APPENDIX A

Notice of Preparation

This page intentionally left blank

Department of Conservation and Development

30 Muir Road
Martinez, CA 94553

Phone:1-855-323-2626

Contra Costa County

John Kopchik
Director

Aruna Bhat
Deputy Director

Jason Crapo
Deputy Director

Maureen Toms
Deputy Director

FILED
JUL 24 2015
J.E. CANCIAMILLA COUNTY CLERK
CONTRA COSTA COUNTY
BY _____ DEPUTY

July 24, 2015

NOTICE OF PREPARATION & NOTICE OF PUBLIC SCOPING MEETING
FOR A
RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT
SARANAP VILLAGE MIXED-USE PROJECT

TO: RESPONSIBLE AND TRUSTEE AGENCIES, AND OTHERWISE INTERESTED AGENCIES, ORGANIZATIONS, AND INDIVIDUALS

On September 14, 2014, the Contra Costa County Department of Conservation and Development (DCD) published a Draft Environmental Impact Report (DEIR) for the **General Plan Amendment, Rezone, Major Subdivision, and Final Development Plan applications (County File Numbers GP13-0003, RZ13-3224, SD13-9359, and DP13-3035, respectively)** for the Saranap Village Mixed-Use Project (the "Project"). The DCD, as the lead agency for preparation of the EIR for this project, will prepare a Recirculated Draft EIR (RDEIR) to address a new, smaller Mitigated Alternative proposed by the applicant, a revised analysis of aesthetic impacts of the Project and all alternatives, and a change in the classification of Boulevard Way from "arterial" to "collector." The DCD is accordingly issuing this Notice of Preparation pursuant to Section 15082 of the California Environmental Quality Act (CEQA) Guidelines.

DESCRIPTION OF PROJECT STUDIED IN DRAFT EIR

The Project addressed in the original DEIR is described as follows:

- Redevelopment of a portion of Boulevard Way in Contra Costa County into a mixed-use village with residential uses and neighborhood-serving restaurants, services, and shops. This would be accomplished by replacing outdated buildings (majority constructed in the 1960s) with four buildings (designated Sites A, B, B1, and C) containing a total of 235 multiple-family units; up to approximately 30,000 square feet of street-level retail and restaurant uses; approximately 14,200 square feet of boutique, community-oriented fitness dub; private amenities for use by the project's residents; and off-street structured parking. The buildings would vary in size and each would reflect a different architectural style. The largest building, located on Site A, would contain approximately 315,500 square feet, including its garage. Building heights would vary across the project site.

- Improvements to the Boulevard Way and Saranap Avenue rights-of-way including reducing Boulevard Way from four lanes to two along the project frontage up to the intersection with Flora Avenue and installing a roundabout, a traffic circle, angled and parallel on-street parking, traffic calming elements, streetscape amenities, sidewalks, crosswalks, street lighting, landscaping, and utilities.

PROJECT CHANGES AND OTHER MATTERS TO BE STUDIED IN RECIRCULATED DRAFT EIR

Aesthetics. In response to the comments received on the DEIR's analysis of aesthetic impacts, the DCD will prepare a new aesthetics analysis of the Project, with new visual massing simulations prepared by a new consultant retained and supervised by the DCD. The RDEIR will contain a revised chapter on the Project's aesthetic impacts and a revised discussion comparing the aesthetic impacts of each alternative to those of the Project.

Boulevard Way Reclassification. The DCD has determined that the roadway classification for Boulevard Way should be changed from "arterial" to "collector," which requires amendments to the General Plan Transportation and Circulation Element. Because the Saranap Village Mixed-Use Project proposes physical changes along an approximately 960-foot segment of Boulevard Way, the DCD suggested and the applicant agreed that the change in roadway classification could be addressed in the RDEIR.

Accordingly, the Project description is changed to include a change to the roadway classification of Boulevard Way from "arterial" to "collector" and conforming amendments to the text of the General Plan Circulation Element and the County Roadway Network Map. This change in roadway classification would apply to all of Boulevard Way, from Olympic Boulevard to Mt. Diablo Boulevard. The affected offsite areas are accordingly expanded to include all of Boulevard Way. The RDEIR will address any significant environmental impacts of this change in classification, for the Project and for all alternatives.

Mitigated Alternative. The applicant has proposed a new "Mitigated Alternative" (see attached preliminary plans). The Mitigated Alternative proposes a reduction in building mass of approximately 27 percent compared to the original Project. The Mitigated Alternative proposes 196 multiple-family units and up to 22,261 square feet (Gross Leasable Area) of street-level retail and restaurant uses. Compared to the Project, buildings on Sites A and B in the Mitigated Alternative would be shorter, and in some places would be pulled back farther from the streets. Development of Site C would remain generally as proposed for the Project. Parking for the Mitigated Alternative would be provided on the project site and would exceed standard County Code requirements. Compared to the Project, there would be less subterranean excavation because less parking would be required.

Like the Project, the Mitigated Alternative would include a roundabout at the intersection of Boulevard Way and Saranap Avenue and on-street parking along both sides of Boulevard Way and the Saranap Avenue frontage. As is the case with the Project, most of the on-street parking would be angled, with some parallel spaces. Unlike the Project, the Mitigated Alternative proposes to leave the large oak tree in place on Site B. The traffic circle near Flora Avenue would be landscaped with new vegetation and/or artwork, rather than the relocated tree. The

Mitigated Alternative includes traffic calming components similar to those of the Project, including roadway improvements, utilities, streetscape improvements, crosswalks, street lighting, sidewalks, and landscaping.

The RDEIR will address any significant environmental impacts of the Mitigated Alternative. The RDEIR will include a new visual massing simulation of the Mitigated Alternative, prepared by a new consultant retained and supervised by the DCD.

PROJECT LOCATION

The project site is located in the unincorporated Saranap area of Contra Costa County between the cities of Walnut Creek and Lafayette. The project site is within the City of Walnut Creek's Sphere of Influence and the County's Urban Limit Line, just south of State Highway 24, and less than one-quarter mile west of the Walnut Creek city limits. The project site consists of approximately 4.6 acres clustered around the intersection of Boulevard Way and Saranap Avenue, extending along the north and south sides of Boulevard Way and along the east side of Saranap Avenue. Properties within the project area are addressed as 1285, 1298, 1299, 1300, 1310, and 1326 Boulevard Way, and 1176 and 1180 Saranap Avenue.

Assessor's parcel numbers: 184-010-035, 184-010-046, 184-450-025, 184-480-025, 185-370-010, 185-370-012, 185-370-018, 185-370-033.

No physical changes are proposed to any portions of Boulevard Way outside of the area of on-site and off-site improvements studied in the original DEIR. However, the geographic scope of the RDEIR will be expanded to encompass the proposed change in classification from "arterial" to "collector" along all of Boulevard Way.

ANTICIPATED IMPACTS

The revised aesthetics analysis of the Project is anticipated to identify significant impacts.

The Boulevard Way classification change from "arterial" to "collector" is not anticipated to result in significant impacts. However, all resource areas and relevant CEQA issues will be evaluated in connection with the classification change.

The Mitigated Alternative is anticipated to result in impacts similar to, but lesser than, those of the Project. Based upon the analysis of the original Project, the DCD anticipates that the Mitigated Alternative may result in potentially significant impacts in the following CEQA topic areas: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Transportation/Traffic; Utilities and Service Systems; and Mandatory Findings of Significance. Based upon the analysis of the original Project, the DCD does not anticipate significant impacts to Agricultural and Forestry Resources; Geology and Soils; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; and Recreation. However, all resource areas and relevant CEQA issues will be evaluated in connection with the Mitigated Alternative.

PUBLIC COMMENTS

All responsible and trustee agencies, and otherwise interested agencies, organizations, and individuals are invited to submit comments regarding the scope and content of the RDEIR.

Written responses to this Notice of Preparation must be received at the following address by 5:00 p.m. on Tuesday, August 25, 2015:

Department of Conservation and Development
30 Muir Road
Martinez, CA 94553
Attention: William Nelson

The County File Numbers stated above should be included in all correspondence.

PUBLIC SCOPING MEETING

A scoping meeting will be held on **Monday, August 17, 2015, at 3:30 p.m.** in the offices of the Department of Conservation and Development located at 30 Muir Road, Martinez, California. At this meeting anyone may submit oral or written comments pertaining to the scope and content of the environmental information to be included in the RDEIR.

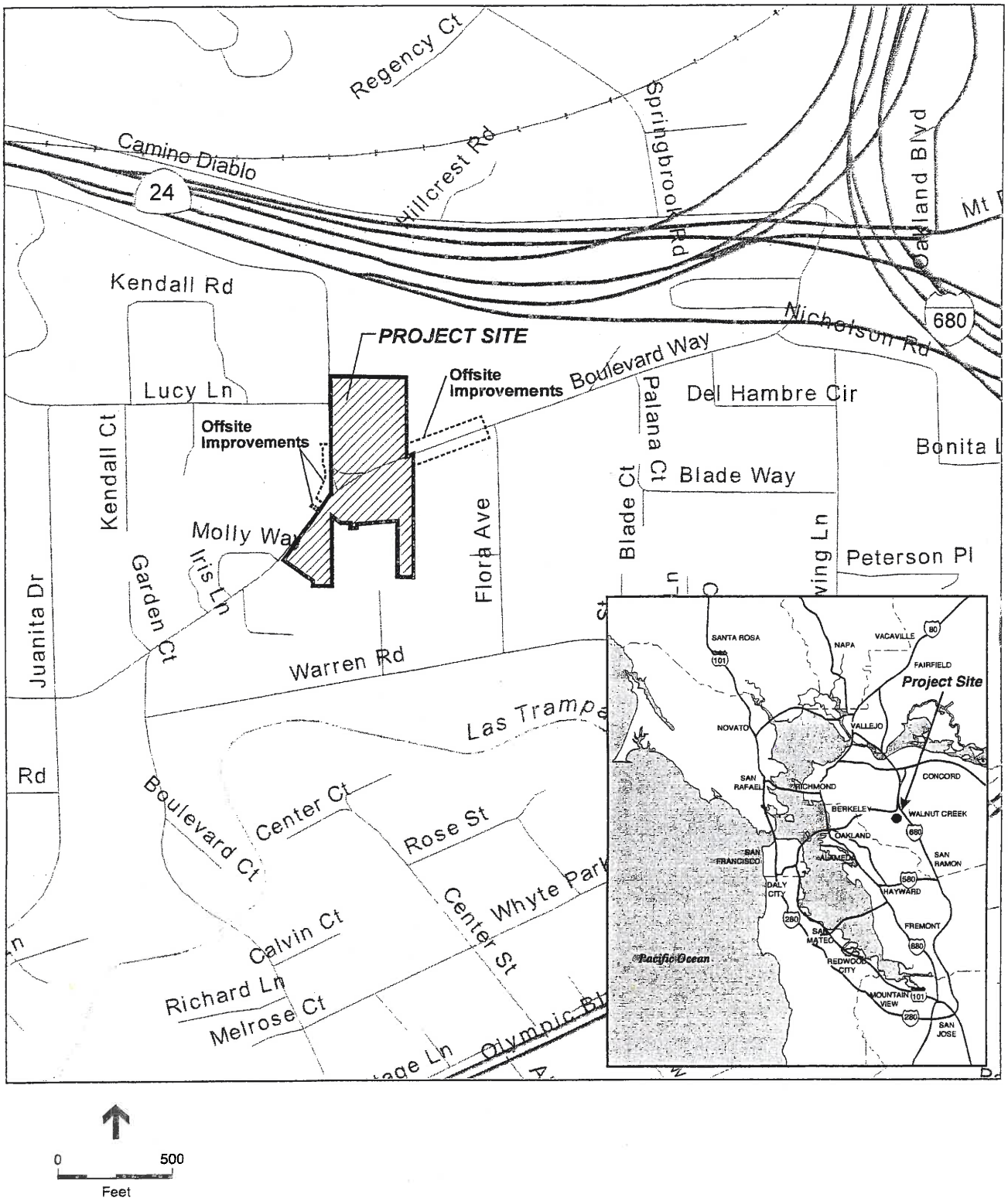
SUPPORTING DOCUMENTS

The development applications and supporting documents are available for review at the offices of the Department of Conservation and Development. Many of the documents are also available at www.contracosta.ca.gov/5195/Saranap-Village. If you wish to obtain a copy of any documents related to this project, please contact me at (925) 674-7791 or william.nelson@dcd.cccounty.us.

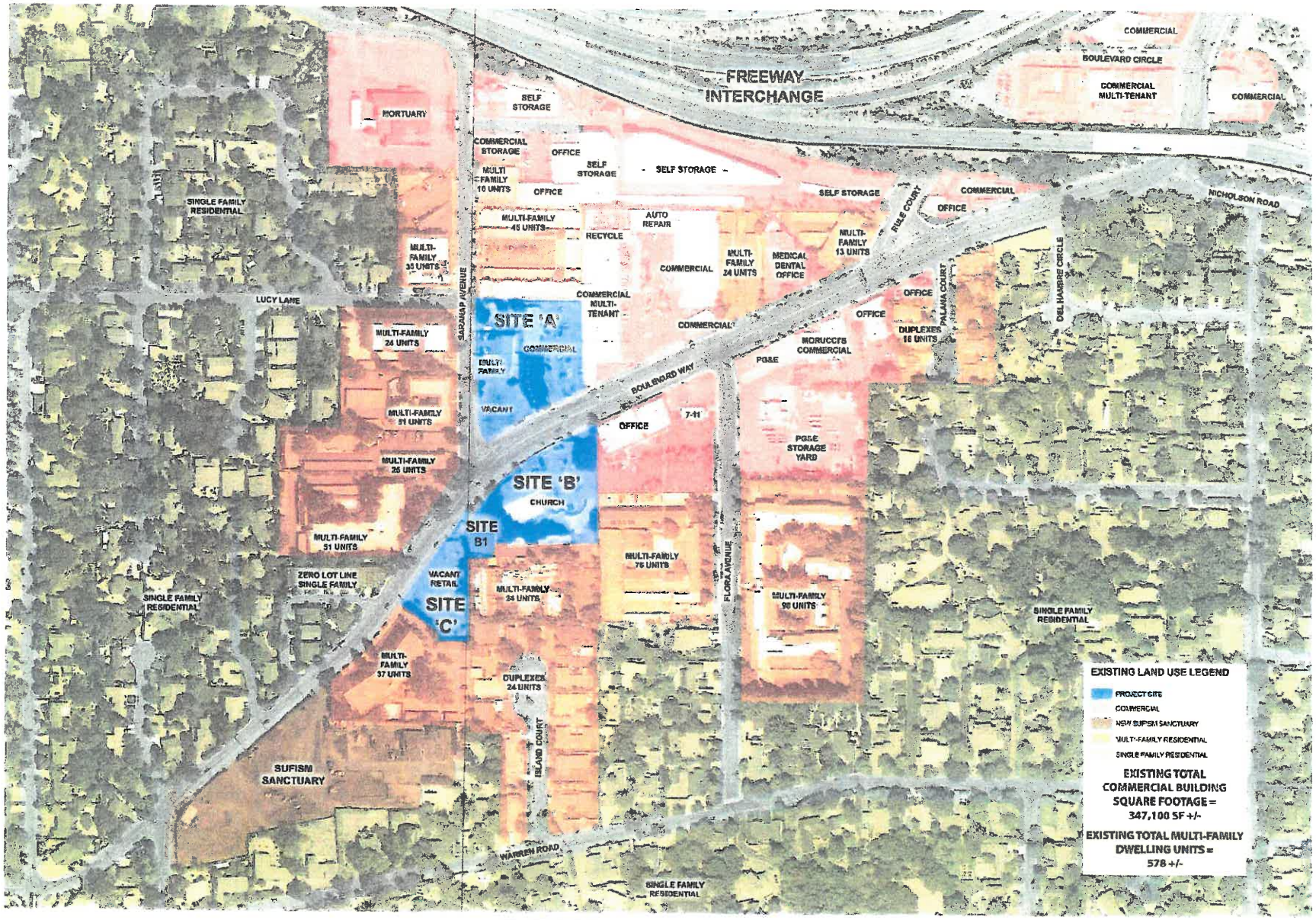
Sincerely,

William R. Nelson
Principal Planner
Contra Costa County
Department of Conservation and Development

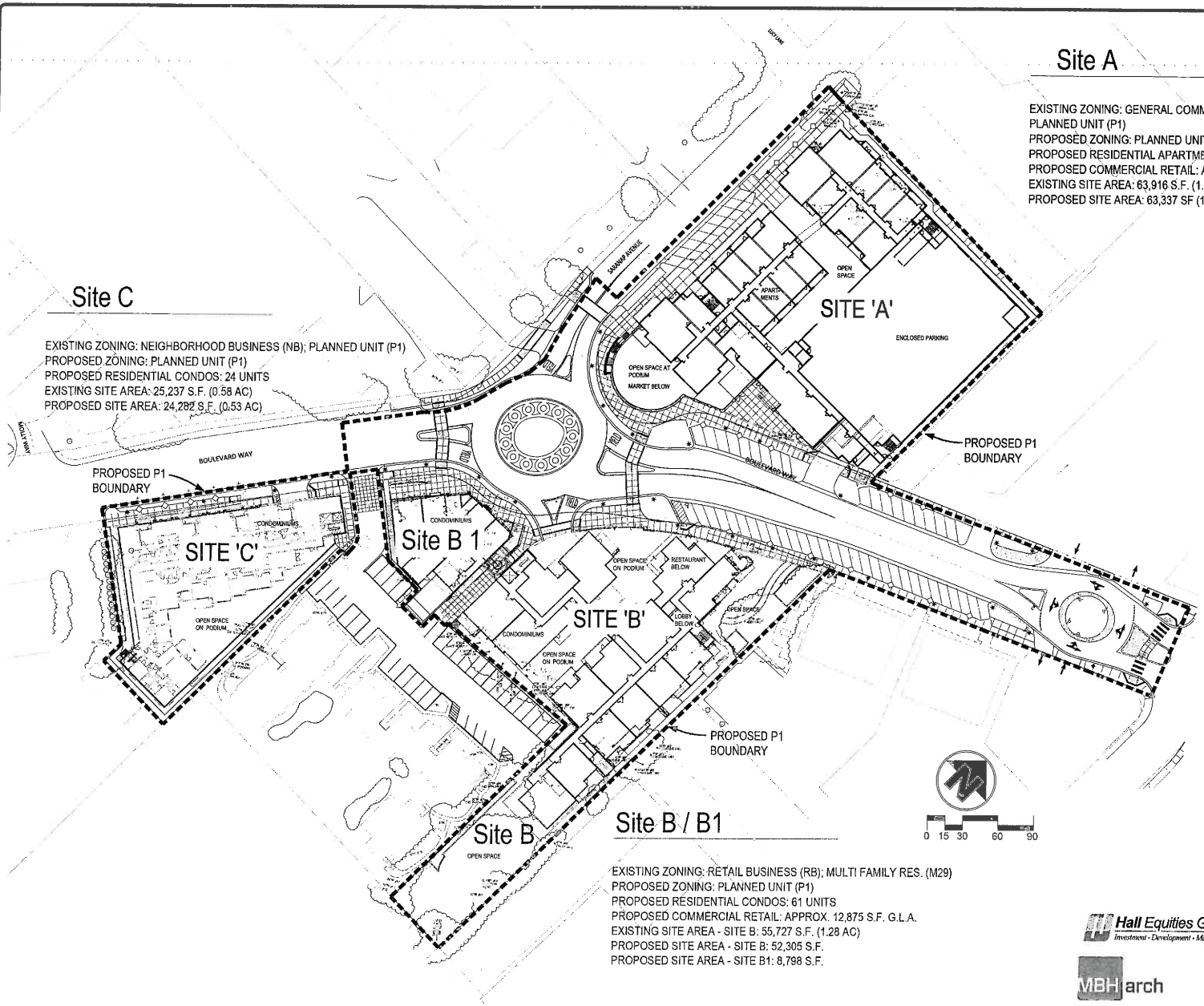
Attachments: Project Location Map
Map of Existing Land Uses
Preliminary Development (Site) Plan – Mitigated Alternative
Preliminary Streetscape and Landscape Plan – Mitigated Alternative
Preliminary Building Elevations – Mitigated Alternative



Project Location Map



EXISTING LAND USES



Site A

EXISTING ZONING: GENERAL COMMERCIAL (C); MULTI FAMILY RES. (M29); PLANNED UNIT (P1)
PROPOSED ZONING: PLANNED UNIT (P1)
PROPOSED RESIDENTIAL APARTMENTS: 111 UNITS
PROPOSED COMMERCIAL RETAIL: APPROX. 9,386 S.F. G.L.A.
EXISTING SITE AREA: 63,916 S.F. (1.47 AC)
PROPOSED SITE AREA: 63,337 SF (1.45 AC)

Site C

EXISTING ZONING: NEIGHBORHOOD BUSINESS (NB); PLANNED UNIT (P1)
PROPOSED ZONING: PLANNED UNIT (P1)
PROPOSED RESIDENTIAL CONDOS: 24 UNITS
EXISTING SITE AREA: 25,237 S.F. (0.58 AC)
PROPOSED SITE AREA: 24,282 S.F. (0.53 AC)

Site B / B1

EXISTING ZONING: RETAIL BUSINESS (RB); MULTI FAMILY RES. (M29)
PROPOSED ZONING: PLANNED UNIT (P1)
PROPOSED RESIDENTIAL CONDOS: 61 UNITS
PROPOSED COMMERCIAL RETAIL: APPROX. 12,875 S.F. G.L.A.
EXISTING SITE AREA - SITE B: 55,727 S.F. (1.28 AC)
PROPOSED SITE AREA - SITE B: 52,305 S.F.
PROPOSED SITE AREA - SITE B1: 8,798 S.F.

Preliminary Development Plan

Proposed Land Uses

DRAFT DESIGN-
SUBJECT TO
MODIFICATION

SARANAP VILLAGE
Walnut Creek, CA

Hall Equities Group
Investment · Development · Management

MBH arch

camp & camp associates
planning & landscape architecture

07-14-15

CS-2

NEW LED STREET LIGHT
MANUFACTURER: ANTIQUE STREET LAMPS
PENDANT STYLE: EUROTIQUE COPENHAGEN SERIES
CROSSARM STYLE: EABM
FINISH: BLACK
WWW.ANTIQUESTREETLAMPS.COM

Preliminary Development Plan
Streetscape and Landscape Plan

DRAFT DESIGN-
SUBJECT TO
MODIFICATION

SARANAP VILLAGE
Walnut Creek, CA

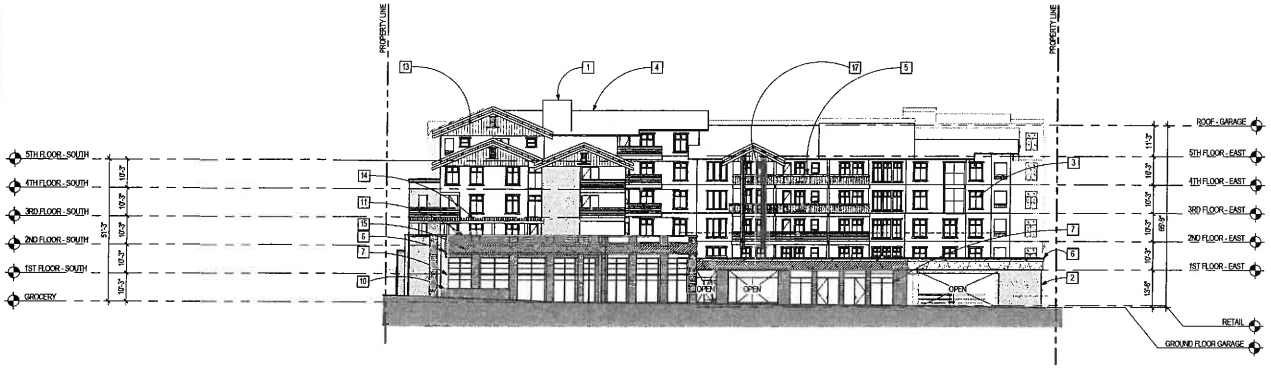
Hall Equities Group
Investment · Development · Management

MBH arch

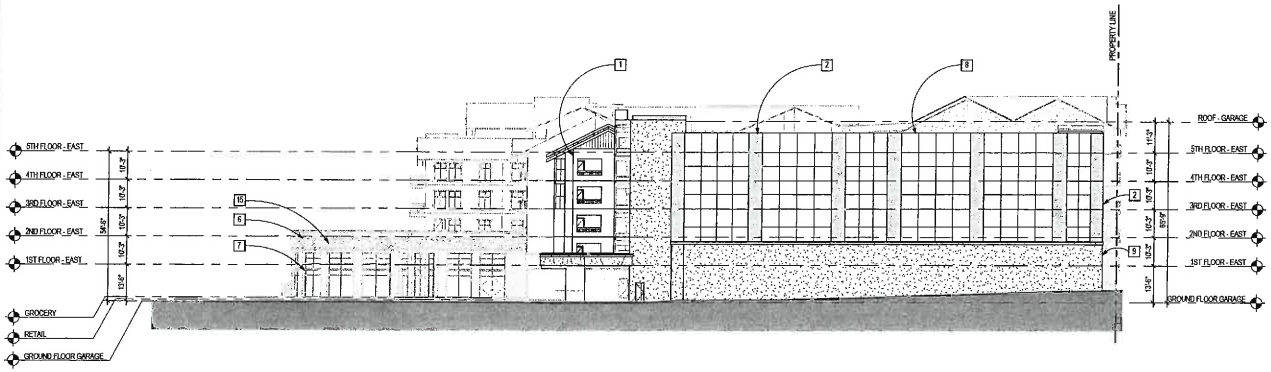
camp & camp associates
planning & landscape architecture

07-14-15

L-1



SOUTH ELEVATION | 1



EAST ELEVATION | 2

KEYNOTES

1. PAINTED CEMENT PLASTER, SMOOTH SAND FINISH
2. THIN BRICK VENEER, NORMAN BOND, SANDED FINISH
3. ALUMINUM AND GLASS WINDOW SYSTEM
4. SLATE TILE ROOFING
5. PAINTED METAL RAILING
6. PRECAST ARCHITECTURAL CONCRETE FRIEZE, BASE AND PLAQUE
7. ALUMINUM AND GLASS STOREFRONT SYSTEM
8. GREEN SCREEN
9. CONCRETE WALL
10. BRICK VENEER RETAINING WALL
11. PARAPET GUARD RAIL AT POOL DECK WITH PRECAST ARCHITECTURAL CONCRETE CORING
12. DECORATIVE TIMBER COLUMNS
13. PAINTED BOARD AND BATTEN SIDING
14. TRELLIS
15. SIGN BAND LOCATION

DRAFT DESIGN - SUBJECT TO MODIFICATION

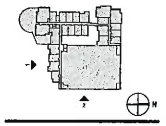
MBH
3478 Mariner Square Loop
Alameda, CA 94501
Tel 510 865 8953
Fax 510 865 1911

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

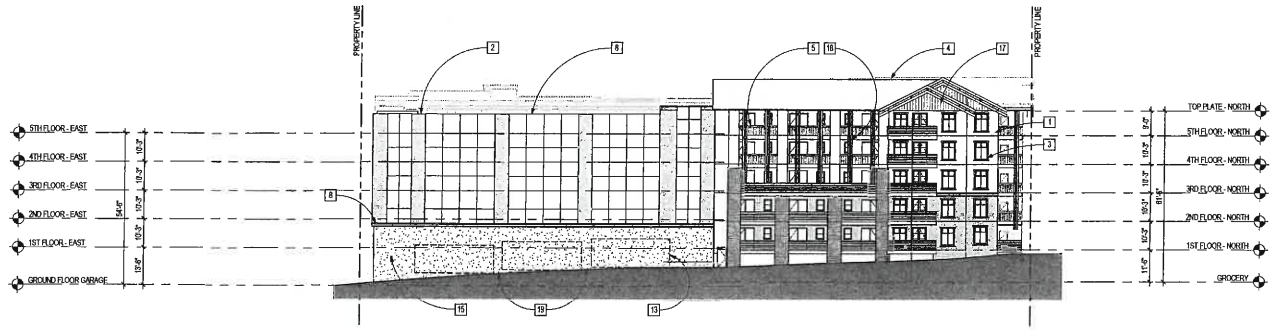
PARCEL A

SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

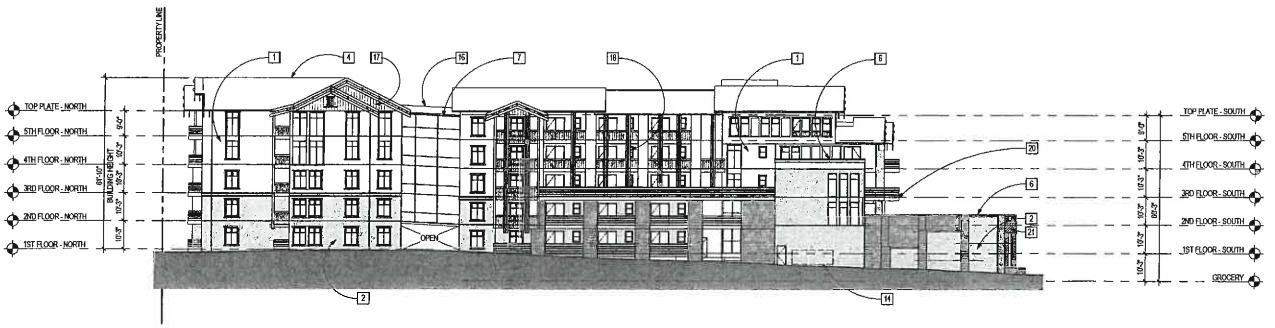
Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2015

No.	Date	Issue
	25 JUN 15	PLANNING SUBMITTAL

Project: 48906
Scale: 1/16" = 1'-0"
Drawing Title: EXTERIOR ELEVATIONS
Drawing No.: A-9



NORTH ELEVATION | 1



WEST ELEVATION | 2

KEY NOTES

1. PAINTED CEMENT PLASTER, SMOOTH SAND FINISH
2. THIN BRICK VENEER, NORMAN BOND, SANDED FINISH
3. ALUMINUM AND GLASS WINDOW SYSTEM
4. SLATE TILE ROOFING
5. PAINTED METAL RAILS
6. PRECAST ARCHITECTURAL CONCRETE COPING, FRIEZE, BASE AND PLAQUE
7. ALUMINUM AND GLASS WINDOW WALL SYSTEM
8. GREEN SCREEN
9. CEDAR SHINGLES
10. CHIMNEY
11. ROLL UP DOOR AT SUB GRADE PIT FOR GROCERY LIFT
12. PARAPET GUARD RAIL AT POOL DECK
13. RESIDENTIAL GAS METERS, TYP
14. RETAIL GAS METERS
15. CONCRETE WALL
16. BRIDGE
17. BOARD AND BATTEN SIDING
18. DECORATIVE TIMBER COLUMNS
19. VINE POCKETS BETWEEN METER BANKS, SCD
20. TRELLIS
21. SIGN BAND LOCATION

DRAFT DESIGN - SUBJECT TO MODIFICATION

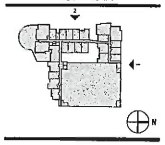
MBH
2410 Mariner Square Loop
Alameda, CA 94501
Tel 510 865 8463
Fax 510 865 1611

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

PARCEL A

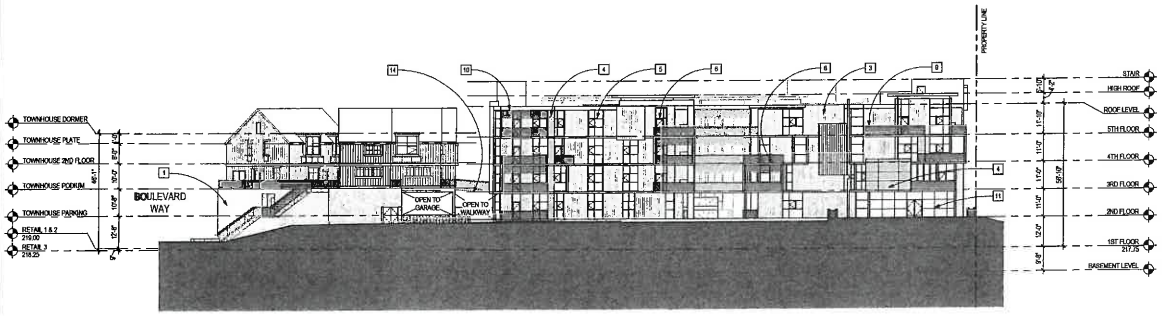
SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2013

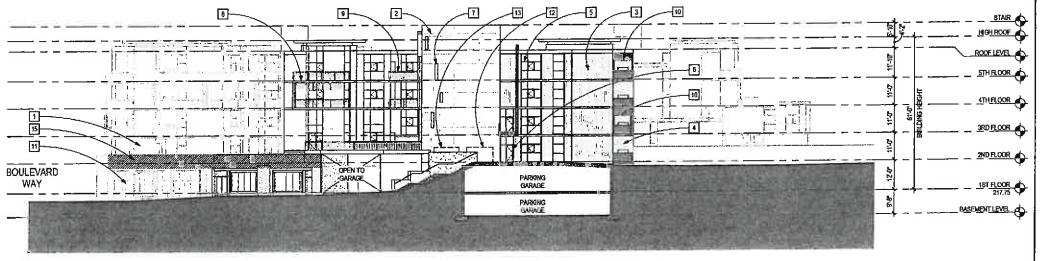
No.	Date	Issue
	25 JUN 15	PLANNING SUBMITTAL

Project: 48606
Scale: 1/16" = 1'-0"
Drawing Title: EXTERIOR ELEVATIONS

Drawing No.
A-10



SOUTH ELEVATION | 1



WEST ELEVATION | 2

KEYNOTES

1. BOARD FORMED CONCRETE
2. PAINTED CEMENT PLASTER, SMOOTH SAND FINISH
3. CELLULOSE AND RESIN PANEL SIDING SYSTEM
4. ZINC CLADDING
5. GLASS WINDOW SYSTEM
6. GLASS DOOR
7. LIGHT COVE WITH BACKLIT COLORED GLASS
8. EXPOSED CONCRETE DECK
9. GUARDRAIL
10. RAIL AND SCRIM ASSEMBLY
11. GLASS WINDOW WALL SYSTEM
12. RESIDENTIAL GAS METERS
13. RETAIL GAS METERS
14. BRIDGE
15. SIGN BAND LOCATION

DRAFT DESIGN - SUBJECT TO MODIFICATION

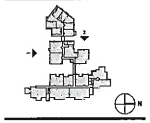
MBH
2470 Mariner Square Loop
Alameda, CA 94501
Tel 510 865 8803
Fax 510 865 1011

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

PARCEL B

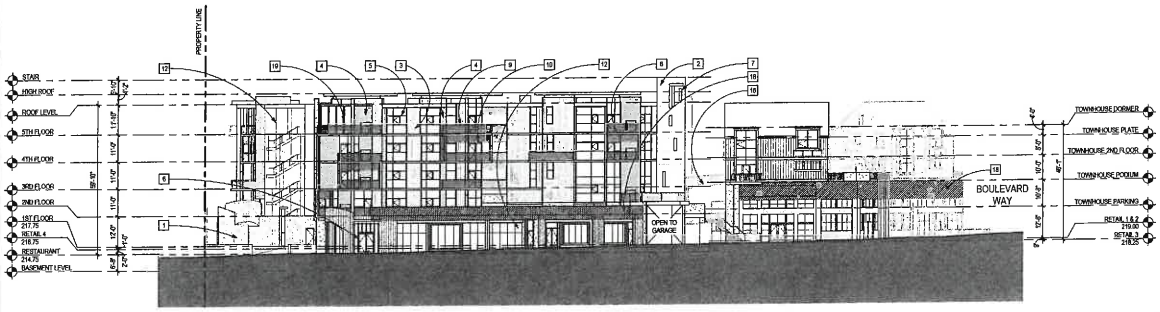
SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2016

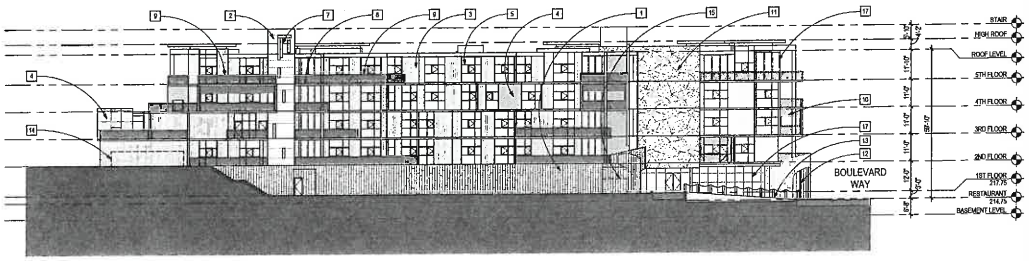
No.	Date	Issue
	25 JUN 15	PLANNING SUBMITTAL

Project 43808
Scale 1/16" = 1'-0"
Sheet Title EXTERIOR ELEVATIONS

Sheet No. A-11



NORTH ELEVATION | 1



EAST ELEVATION | 2

KEYNOTES

1. BOARD FORMED CONCRETE
2. PAINTED CEMENT PLASTER, SMOOTH SAND FINISH
3. CELLULOSE AND RESIN PANEL SIDING SYSTEM
4. ZINC CLADDING
5. GLASS WINDOW SYSTEM
6. GLASS DOOR
7. LIGHT COVE WITH BACKLIT COLORED GLASS
8. EXPOSED CONCRETE DECK
9. GUARD RAIL
10. RAIL AND SCRIM ASSEMBLY
11. ANCHORED STONE VENEER SYSTEM
12. GLASS WINDOW WALL SYSTEM
13. ELEVATED SLOPING BOARDWALK WITH GUARD RAIL
14. RESIDENTIAL GAS METERS
15. RESTAURANT GAS METER
16. BRIDGE
17. FOLDING GLASS WALL SYSTEM
18. SIGN BAND LOCATION

DRAFT DESIGN - SUBJECT TO MODIFICATION

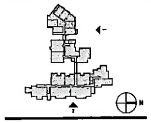
MBH
3478 Buskirk Square Loop
Alameda, CA 94501
Tel 510 865 8963
Fax 510 865 1011

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

PARCEL B

SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

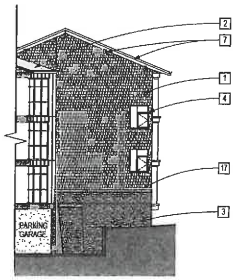
Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2016

No.	Date	Item
	25 JUN 15	PLANNING SUBMITTAL

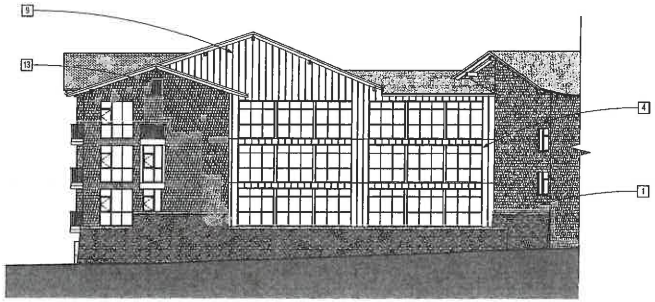
Project 49006
Scale 3/16" = 1'-0"
Drawing Title EXTERIOR ELEVATIONS

Drawing No.
A-12

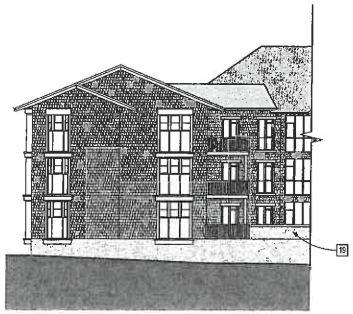
NORTHWEST ELEVATION | 1



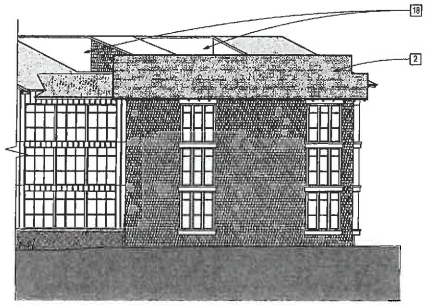
WEST ELEVATION | 3



SOUTHWEST ELEVATION | 2



EAST ELEVATION | 5



SOUTH ELEVATION | 4

KEYNOTES

1. CEMENTITIOUS SHINGLE EXTERIOR SIDING
2. ARCHITECTURAL COMPOSITION SHINGLE ROOF
3. STONE VENEER COMPOSITE AT BATTERED BASE
4. GLASS WINDOW SYSTEM
5. PAINTED DECORATIVE METAL GRILLE AT GARAGE OPENINGS
6. TRELLIS FEATURE
7. STAINED WOOD OUTRIGGERS, RAFTER TAILS, FASCIA BOARDS, AND RAKE BOARDS
8. PAINTED BRACKETS AND KICKERS
9. PAINTED BOARD AND BATTEN SIDING
10. HALF-ROUND METAL GUTTER
11. SLIDING METAL GARAGE DOOR
12. PLANTER BOX
13. ACCENT VENTS
14. ADDRESS NUMERALS
15. GLASS DOORS
16. CONCRETE PIERS
17. CAP TO STONE VENEER
18. MECHANICAL WELL
19. CEMENT PLASTER 42" GUARDWALL WITH CAP PROFILE AND SKIM COAT CEMENT PLASTER ON CONCRETE WALL BELOW

DRAFT DESIGN - SUBJECT TO MODIFICATION

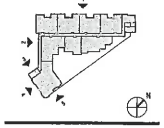
MBH
2470 Mariner Square Loop
Alameda, CA 94501
Tel 510 865 6653
Fax 510 865 7611

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

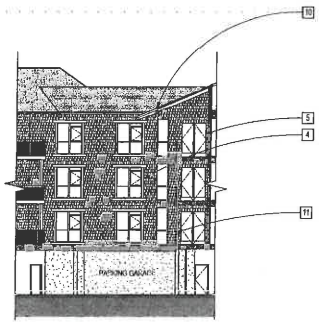
PARCEL C

SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

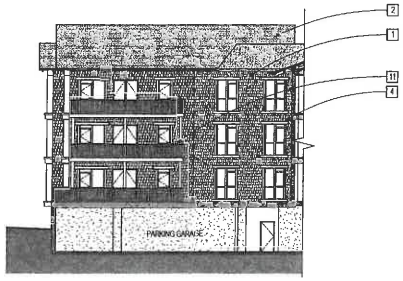
Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be reproduced, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2015

No.	Date	Issue
	14 JULY 15	PLANNING SUBMITTAL

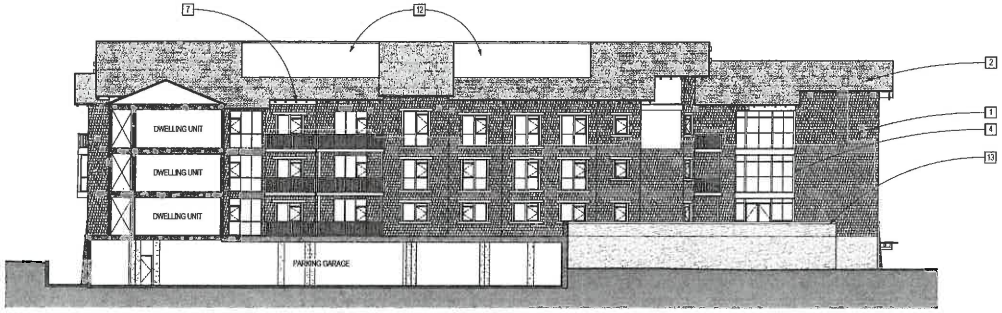
Project: 49606
Scale: 3/32" = 1'-0"
Drawing Title: EXTERIOR ELEVATIONS
Drawing No.: A-7



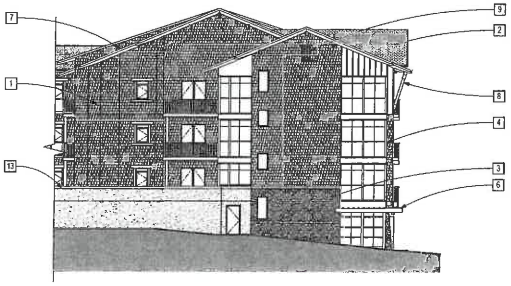
NORTHEAST COURTYARD ELEVATION | 2



NORTH COURTYARD ELEVATION | 1



SOUTHEAST COURTYARD ELEVATION | 3



NORTHEAST ELEVATION | 4

KEYNOTES

1. CEMENTITOUS SHINGLE EXTERIOR SIDING
2. ARCHITECTURAL COMPOSITION SHINGLE ROOF
3. STONE VENEER COMPOSITE AT BATTERED BASE
4. GLASS WINDOW SYSTEM
5. PAINTED DECORATIVE METAL GRILLE AT GARAGE OPENINGS
6. TRELLIS FEATURE
7. STAINED WOOD OUTRIGGERS, RAFTER TAILS, FASCIA BOARDS, AND RAKE BOARDS
8. PAINTED BRACKETS AND KICKERS
9. PAINTED BOARD AND BATTEN SIDING
10. HALF-ROUND METAL GUTTER
11. SLIDING METAL GARAGE DOOR
12. PLANTER BOX
13. ACCENT VENTS
14. ADDRESS NUMERALS
15. GLASS DOORS
16. CONCRETE PIERS
17. CAP TO STONE VENEER
18. MECHANICAL WELL
19. CEMENT PLASTER 42" GUARDWALL WITH CAP PROFILE AND SKIM COAT CEMENT PLASTER ON CONCRETE WALL BELOW

DRAFT DESIGN - SUBJECT TO MODIFICATION

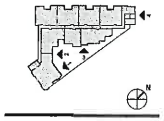
MBH
2670 Mariners Square Loop
Alameda, CA 94501
Tel 510 865 6663
Fax 510 865 1511

PRELIMINARY DEVELOPMENT PLAN

EXTERIOR ELEVATIONS

NOT FOR CONSTRUCTION

KEY PLAN



SARANAP VILLAGE

PARCEL C

SARANAP VILLAGE
CONTRA COSTA COUNTY, CA

Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2016

No.	Date	Issue
	14 JULY 15	PLANNING SUBMITTAL

Project: 486206
Date: 3/32" = 1'-0"
Drawing Title: EXTERIOR ELEVATIONS

Drawing No.
A-8

APPENDIX B

Air Quality Technical Reports

This page intentionally left blank

RAMBOLL ENVIRON

ENVIRONMENT
& HEALTH

Reed Onate
Hall Equities Group
1855 Olympic Boulevard, Suite 300
Walnut Creek, CA 94596

SARANAP – STREET IMPROVEMENT UPDATES
SARANAP VILLAGE, WALNUT CREEK, CALIFORNIA

Date March 01, 2016

Ramboll Environ
201 California Street
Suite 1200
San Francisco, CA 94111
USA

T +1 415 796 1950
F +1 415 398 5812
www.ramboll-environ.com

Dear Mr. Onate:

At the request of the Hall Equities Group (Hall), Ramboll Environ prepared two technical reports evaluating air quality (and health risks) and greenhouse gas (GHG) impacts associated with a Mitigated Alternative for the proposed construction of the mixed-use Saranap Village development located at Boulevard Way and Saranap Avenue in Walnut Creek, California ("Mitigated Alternative").[1],[2] Since issuing those reports, we understand there are some proposed modifications to the Mitigated Alternative analyzed.

Project Updates

We understand that Mitigated Alternative now proposes a median instead of a mid-block traffic circle in Boulevard Way near Flora Avenue. We further understand that Kier & Wright has determined the following, comparing the median to the mid-block traffic circle:

- In the area east of Parcels A and B, the median will entail approximately 16,090 SF of shallow grading, old asphalt removal and installation of new asphalt or other hardscape, and 18,350 SF of pavement overlay. This compares to the mid-block traffic circle, which would have required approximately 20,782 SF of shallow grading, asphalt removal and new asphalt and hardscape, and 6,218 SF of pavement overlay. Thus, the median design proposes less asphalt replacement, and more pavement overlay.
- The 126-day construction schedule and number of hours of equipment operation is not expected to increase, since overlaying new pavement can be accomplished in less time than it takes to remove and replace existing asphalt.

[1] Ramboll Environ. 2015. Saranap Village Mitigated Alternative Air Quality Technical Report. November.
[2] Ramboll Environ. 2015. Saranap Village Mitigated Alternative Greenhouse Gas Technical Report. November.

- The amount of equipment needed will be the same or less, because fewer equipment is required to overlay new pavement than is required to conduct shallow grading, asphalt removal and hardscape installation.
- The equipment mix is expected to remain essentially the same. There may be a slight shift due to a lesser need for grading and a slightly greater need for paving. However, the change is expected to be de minimis and within the margin of error for projecting equipment hours.
- The disturbed area will expand by up to 7500 SF; however, as discussed in the previous bullets, there should be less overall construction activity.
- However, given the increase in total disturbed area, we conservatively assumed that the overall construction duration for the Street Improvements phase of the Mitigated Alternative could be increased by as many as three days.[3]

Impact Assessment

We looked at the impact of this change on Air Quality, GHG Emissions and the Health Risk Assessment.

Ramboll Environ quantified emissions resulting by extending the Street Improvements phase by three days; this phase includes the following equipment: pavers, paving equipment, rollers and skiploaders. Based on the schedule provided by Hall Equities Group, Ramboll Environ predicts the potential increase in construction activity would increase Air Quality and GHG emissions by less than 1% for each pollutant. The predicted increase in health/cancer risk impacts (at current MEISR) is approximately 2%. Given these assumptions, these increases would not result in a change in Air Quality or Greenhouse Gas impact conclusions, and the calculated impacts of 0.1-2% are not significant enough to substantially affect our analysis. Furthermore, the extension of the construction schedule by 3 days is very conservative and the emissions would likely be the same or lower than what was originally evaluated.

Yours sincerely,

Michael Keinath
Principal

D +1 415 796 1934
mkeinath@ramboll.com

Megan Neiderhiser
Manager

D +1 385 282 5311
mneiderhiser@ramboll.com

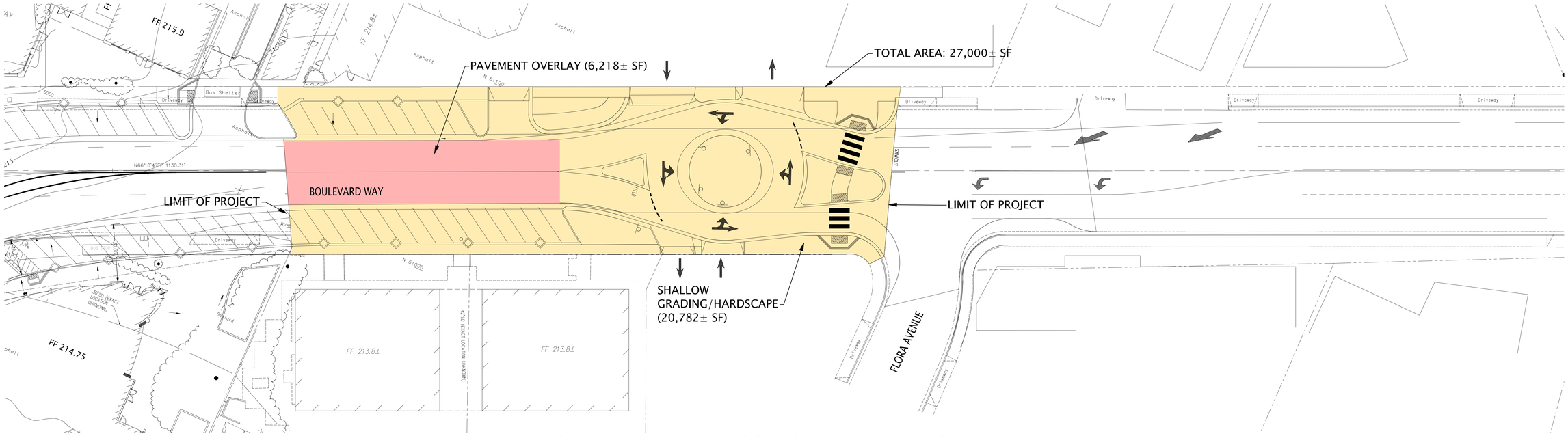
cc: Marie Cooper, Perkins Coie
Cecily Barclay, Perkins Coie

Attachments:

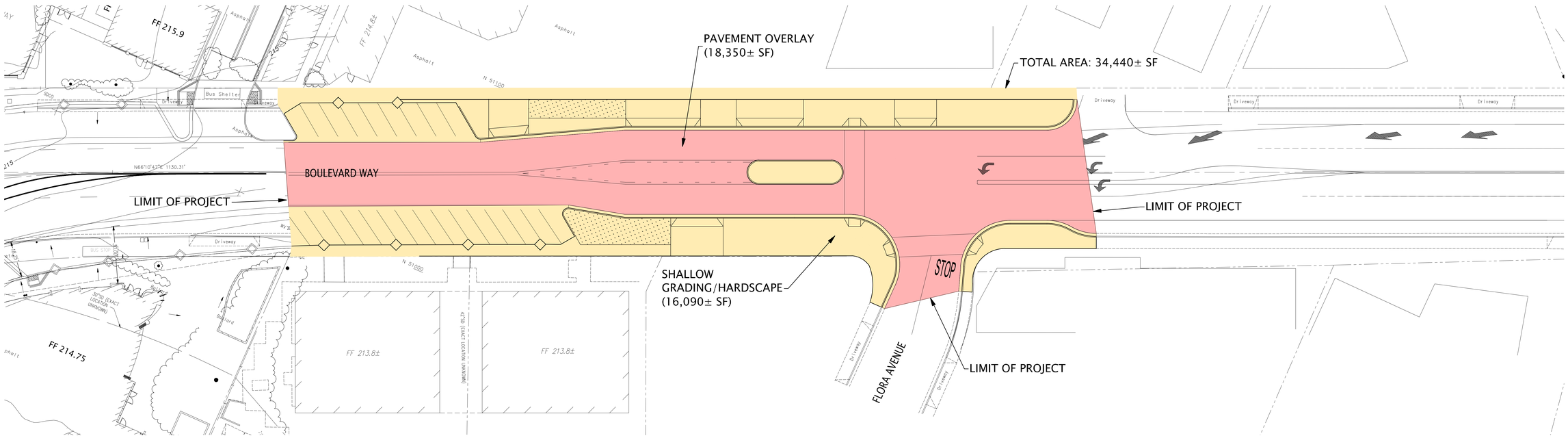
A: Saranap Median Roundabout Design (2016)

[3] Email from Reed Onate, Hall Equities Group, March 1, 2016

ATTACHMENT A
SARANAP MEDIAN ROUNDABOUT DESIGN (2016)



BOULEVARD WAY MIDBLOCK ROUNDABOUT DESIGN (2014)



BOULEVARD WAY MEDIAN DESIGN (2016)

NO.	REVISION	BY	NO.	REVISION	BY
△			△		
△			△		
△			△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

EXHIBIT TO COMPARE
BOULEVARD WAY MIDBLOCK ROUNDABOUT DESIGN (2014)
TO BOULEVARD WAY MEDIAN DESIGN (2016)

CONTRA COSTA COUNTY CALIFORNIA

DATE	FEB., 2016
SCALE	1" = 20'
DESIGNER	MC
JOB NO.	A12549-3
SHEET	EX
OF	1 SHEETS

Z:\2012\A12549-3\A12549-3 PG.dwg 7/13/2015 12:19:53 PM

Intended for:
Hall Equities Group
Walnut Creek, California

Prepared By:
Ramboll Environ
San Francisco, California

Date
November 2015

Project Number
03-34227C

SARANAP VILLAGE MITIGATED ALTERNATIVE AIR QUALITY TECHNICAL REPORT

BOULEVARD WAY & SARANAP AVENUE WALNUT CREEK, CALIFORNIA

RAMBOLL ENVIRON

CONTENTS

1.	**INTRODUCTION**	**1**
1.1	Project Understanding	1
1.2	Objective and Methodology	2
1.3	Report Organization	3
2.	**EMISSION ESTIMATES**	**5**
2.1	Calculation Methodologies for Construction Emissions	5
2.2	Calculation Methodologies for Operational Emissions	6
2.2.1	Area Sources	6
2.2.2	Emergency Generators	6
2.2.3	Mitigated Alternative Traffic	6
2.3	Calculation Methodologies for Cumulative TAC Emissions	7
3.	**ESTIMATED AIR CONCENTRATIONS**	**8**
3.1	Mitigated Alternative Sources	8
3.1.1	Mitigated Alternative Modeling	8
3.2	Roadway Sources for Cumulative Analysis	9
3.3	Stationary Sources for Cumulative Analysis	10
4.	**RISK CHARACTERIZATION METHODS**	**12**
4.1	Mitigated Alternative Sources Evaluated	12
4.2	Exposure Assessment	12
4.3	Toxicity Assessment	13
4.4	Age Sensitivity Factors	14
4.5	Risk Characterization	14
4.5.1	Estimation of Cancer Risks	14
4.5.2	Estimation of Chronic Noncancer Hazard Quotients/Indices	15
4.6	Roadway Sources	15
5.	**PROPOSED MITIGATION MEASURES**	**16**
5.1	Tier 4 Protections On Different Equipment	16
5.2	Reduced Idling	16
5.3	Alternative Fuels	16
5.4	MERV Filters	17
5.5	Construction Phasing	17
6.	**RESULTS FOR MITIGATED ALTERNATIVE ANALYSIS**	**18**
6.1	Criteria Air Pollutants and Precursors	18
6.1.1	Construction CAPs	18
6.1.2	Operation CAPs	18
6.2	Risk and Hazards	19
6.2.1	Construction Risk and Hazards	19
7.	**RESULTS FOR CUMULATIVE ANALYSIS**	**20**
7.1	Cumulative Risk and Hazards	20
7.1.1	Methodology	20

7.1.2 Results 20

8. LOCALIZED CO IMPACTS FROM MOTOR VEHICLE TRAFFIC 22

9. UNCERTAINTIES 23

10. REFERENCES 25

TABLES

Table 1: Conceptual Layout of Proposed Maximum Development

Table 2: Emissions Calculations Methodology

Table 3: Construction Equipment List

Table 4a: Summary of Construction Criteria Air Pollutant Emissions – All Sources (Uncontrolled Scenario)

Table 4b: Summary of Construction Criteria Air Pollutant Emissions – All Sources (Controlled Scenario)

Table 5: Summary of Operational Criteria Air Pollutant Emissions – Emergency Engines

Table 6: Summary of Operational Criteria Air Pollutant Emissions –Traffic

Table 7: Modeling Parameters for Construction Plan

Table 8a: Construction Emissions for HRA Modeling (Uncontrolled Scenario)

Table 8b: Construction Emissions for HRA Modeling (Controlled Scenario)

Table 9: Exposure Parameters for Construction

Table 10: Toxicity Values

Table 11: Age Sensitivity Factors for Construction

Table 12a: Summary of Construction Criteria Air Pollutant Emissions – All Sources (Uncontrolled Scenario)

Table 12b: Summary of Construction Criteria Air Pollutant Emissions – All Sources (Controlled Scenario)

Table 13: Summary of Operational Criteria Air Pollutant Emissions – All Sources

Table 14a: Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration, - Off-Site MEISR (Uncontrolled Scenario)

Table 14b: Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration, - Off-Site MEISR (Controlled Scenario)

Table 14c: Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration, - On-Site MEISR (Uncontrolled Scenario)

Table 15: Stationary Off-Site Sources

Table 16: Traffic Off-Site Sources

Table 17a: Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration – Off-Site MEISR (Uncontrolled Scenario)

Table 17b: Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration – Off-Site MEISR (Controlled Scenario)

Table 17c: Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration – On-Site MEISR (Uncontrolled Scenario)

FIGURES

Figure 1: Property Boundary

Figure 2: Modeling Extent

Figure 3a: Location of Off-site MEISR and PMI – Uncontrolled Scenario

Figure 3b: Location of Off-site MEISR and PMI – Controlled Scenario

Figure 3c: Location of On-site MEISR and PMI – Uncontrolled Scenario

Figure 4: Wind Rose – Concord, CA

APPENDICIES

Appendix A: CalEEMod® Output Files

Appendix B: AERMOD Modeling Files

Appendix C: Stationary Source Impact Evaluation

Appendix D: CAL3QHCR Modeling Files

Appendix E: Proposed Equipment Controls

ACRONYMS AND ABBREVIATIONS

ADT:	Average Daily Trip
ASF:	Age Sensitivity Factor
BAAQMD:	Bay Area Air Quality Management District
CalEEMod®:	California Emissions Estimator Model
Cal/EPA:	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutant
CARB	California Air Resource Board
CEHTP	California Environmental Health Tracking Program
CEQA	California Environmental Quality Act
CO	Carbon Monoxide
CPF	Cancer Potency Factor
CRAF	Cancer Risk Adjustment Factor
cREL	Chronic Reference Exposure Level
DPF	Diesel Particulate Filter
DPM	Diesel Particulate Matter
EMFAC2011	California Air Resource Board's Emissions Factor Model
FIRE	Factor Information Retrieval Software
HEPA	High Efficiency Particulate Air
HI	Hazard Index
HQ	Hazard Quotient
HRA	Health Risk Analysis
HRSA	Health Risk Screening Analysis
IARC	International Agency for Research on Cancer
MEISR	Maximally Exposed Individual Sensitive Receptor
MERV	Minimum Efficiency Reporting Value
NED	National Elevation Dataset
NOx	Nitrogen Oxides
OEHHA	Office of Environmental Health Hazard Assessment
$PM_{2.5}$	Fine Particulate Matter Less than 2.5 Micrometers in Aerodynamic Diameter
PM_{10}	Respirable Particulate Matter Less than 10 Micrometers in Aerodynamic Diameter

PMI	Point of Maximum Impact
ROG	Reactive Organic Gases
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis
TSD	Technical Support Document
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VDECS	Verified Diesel Emissions Control Strategies
VMT	Vehicle Miles Traveled
WHO	World Health Organization
χ/Q	"Chi Over Q", Also Known As A Dispersion Factor

Units

g	Gram	mg	Milligram
kg	Kilogram	mg/kg-day	Milligrams per kilogram per day
kW	Kilowatt		
L	Liter	µg	Microgram
lb	Pound	µg/m3	Micrograms per cubic meter
m^3	Cubic meters	s	Second
		TPY	Tons per year

1. INTRODUCTION

At the request of the Hall Equities Group (Hall), Ramboll Environ has prepared a technical report evaluating air quality impacts and health risks associated with a Mitigated Alternative for the proposed construction of the mixed-use Saranap Village development located at Boulevard Way and Saranap Avenue in Walnut Creek, California ("Mitigated Alternative"). Ramboll Environ (at the time known as ENVIRON International Corp.) prepared the Air Quality Technical Report for the original proposed Project in April 2014.

Ramboll Environ followed recent California Environmental Quality Act (CEQA) Guidelines released by the Bay Area Air Quality Management District (BAAQMD or District) in May 2012 (BAAQMD 2012a) and the most recent Air Toxics Hot Spots Program Risk Assessment Guidelines released by California Environmental Prote ction Agency (Cal/EPA), Office of Environmental Health Hazard Assessment's (OEHHA) (Cal/EPA 2015). The May 2012 CEQA Air Quality Guidelines do not prescribe specific significance thresholds. In this assessment as a conservative measure while litigation is pending, Ramboll Environ has compared the results against the prior thresholds presented in the May 2011 CEQA Guidelines; referred to herein as the 2011 CEQA significance thresholds.[1] The analyses described in this report were performed to support the Mitigated Alternative's CEQA documentation.

1.1 Project Understanding

The proposed Mitigated Alternative would be located around the intersection of Boulevard Way and Saranap Avenue, and would extend along the north and south sides of Boulevard Way, and along the east side of Saranap Avenue. It would lie approximately one quarter of a mile west of the Walnut Creek city limits, and just south of Highway 24. Surrounding existing uses generally include a mixture of multifamily, commercial, retail, services, offices, auto repair, mini-mart, utility operations/storage yard, self-storage uses, funeral home, and other commercial uses.

The project site is comprised of four areas, clustered around the intersection of Boulevard Way and Saranap Avenue, totalling approximately 4.6 acres, and includes the public rights of way along the project frontages. Of that amount, approximately 3.5 acres is occupied by Sites A, B, B1, and C. Off-site improvements would extend east along Boulevard Way to its intersection with Flora Avenue. The total area that would be disturbed by mass grading or trenching, including the offsite improvement areas, is 5.3 acres. **Figure 1** shows the Mitigated Alternative Boundary, Parcel boundaries and area of proposed street improvements.

The proposed Mitigated Alternative will demolish the existing buildings and develop mixed-use buildings and associated parking structures and lots. The Mitigated Alternative will predominantly be used for residential and retail land uses, but also includes a restaurant and coffee shop as well as pools for building occupants. **Table 1** shows the proposed land uses by parcel for the Mitigated Alternative.

[1] The Court of Appeal's decision was appealed to the California Supreme Court, which granted limited review, and the matter is currently pending there with a decision expected by early 2016.

1.2 Objective and Methodology

The BAAQMD 2011 CEQA Guidelines contain recommended thresholds for criteria air pollutants (CAP) emissions, and thresholds for risks and hazards associated with toxic air contaminant (TAC) emissions from an individual project undergoing environmental review pursuant to CEQA. In addition to the evaluation of an individual project, the CEQA Guidelines recommend a cumulative evaluation of a project in addition to other air emissions sources within a "zone of influence" surrounding the project. The BAAQMD CEQA Guidelines recommends analyses on carbon monoxide (CO) localized impact, and odor impact from the Mitigated Alternative. Because the proposed Mitigated Alternative is not anticipated to be a source of significant odors, no analysis of odor impact has been conducted.

The following areas are discussed in this technical report: construction CAPs, operational CAPs, construction health risks, cumulative impacts to off-site and on-site sensitive receptors (including potential impacts from other off-site stationary sources and mobile sources), and CO localized impacts.

This technical report evaluates regional emissions of criteria pollutants and precursors from construction and operation of the Mitigated Alternative and evaluates these emissions against the BAAQMD's May 2011 significance thresholds for emissions.

This Health Risk Analysis (HRA) evaluates the estimated cancer risk, noncancer chronic hazard index (HI), and $PM_{2.5}$ (particulate matter less than 2.5 microns in aerodynamic diameter) concentrations associated with construction and operation of the Mitigated Alternative. The cumulative analysis estimates excess lifetime cancer risks, noncancer HIs, and $PM_{2.5}$ concentrations that are attributable to other mobile and stationary sources within the "zone of influence" in addition to contribution from the Mitigated Alternative.

This screening-level HRA evaluated potential sensitive receptor locations where "an actual person may be located for a given period of time and may include:

- Residential dwellings, including apartments, houses, condominiums;
- Schools, colleges, and universities;
- Daycares;
- Hospitals; and
- Senior-care facilities" (BAAQMD 2012a).

To meet these objectives, this HRA was conducted consistent with the following guidance:

- Air Toxics Hot Spots Program Risk Assessment Guidelines (Cal/EPA 2015),
- May 2011 BAAQMD CEQA Guidelines (BAAQMD 2011a),
- BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards (BAAQMD 2012a),

The results of the health risk analyses are compared with the BAAQMD 2011 CEQA significance thresholds for single source (i.e. project-specific) and cumulative impacts[2] as follows:

Single Source:

- An excess lifetime cancer risk level of more than 10 in one million;
- A noncancer chronic HI greater than 1.0; and
- An incremental increase in the annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter (μg/m^3).

Cumulative Impacts:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic noncancer HI greater than 10.0; and
- An incremental increase in the annual average $PM_{2.5}$ of greater than 0.8 μg/m^3.

1.3 Report Organization

This technical report is divided into nine sections as follows:

Section 1.0 – Introduction: describes the purpose and scope of this technical report, the objectives and methodology used in this technical report and outlines the report organization.

Section 2.0 – Emission Estimates: describes the methods used to estimate the emissions of CAPs and TACs from the Mitigated Alternative;

Section 3.0 – Estimated Air Concentrations: discusses the air dispersion modeling, the selection of the dispersion models, the data used in the dispersion models (e.g., terrain, meteorology, source characterization), and the screening-level identification of residential and sensitive locations evaluated in this technical report.

Section 4.0 – Risk Characterization Methods: provides an overview of the methodology for conducting the HRA.

Section 5.0 – Proposed Mitigation Measures: discusses a control requiring the Mitigated Alternative to achieve a Performance Standard (whereby Project impacts fall below designated CEQA thresholds), which can be achieved with use of California Air Resources Board (CARB)-certified Level 3 Verified Diesel Emissions Control Strategies (VDECS) filters on certain equipment. Section 5 also notes that alternative measures, such as alternative fuels, Minimum Efficiency Reporting Value (MERV) filters, and construction phasing might also help the Mitigated Alternative achieve the Performance Standard.

[2] This report addresses project and cumulative impacts using the language of the BAAQMD guidance and thresholds. BAAQMD's use of these terms encompasses traditional CEQA impacts (impacts of the Project on the environment, the contribution of Project impacts to cumulative impacts of the Project and past, present and future projects combined), as well as impacts of the existing and projected future environments on the Project.

Section 6.0 – Results for Mitigated Alternative Analysis: presents the average daily and maximum annual CAP emissions, estimated excess lifetime cancer risks, chronic noncancer HIs, and $PM_{2.5}$ concentrations for the Mitigated Alternative, and compares them to BAAQMD significance thresholds.

Section 7.0 – Results for Cumulative Analysis: summarizes the approach used in the screening cumulative analysis and presents the estimated cumulative excess lifetime cancer risks, chronic noncancer HIs, and $PM_{2.5}$ concentrations for the Mitigated Alternative and compares them to BAAQMD 2011 CEQA significance thresholds.

Section 8.0 - Localized CO Impacts from Motor Vehicle Traffic: summarizes the approach used in the CO screening analysis, and the corresponding conclusions.

Section 9.0 – Uncertainties: identifies and describes the uncertainties associated with the risk estimates and discusses how these uncertainties may affect the risk assessment conclusions.

Section 10.0 – References: includes a listing of all references cited in this report.

2. EMISSION ESTIMATES

As a conservative measure, this analysis evaluates Mitigated Alternative impacts only, and does not subtract out existing uses. Information regarding emissions of existing uses was not readily available, thus this analysis does not net out existing emissions from Mitigated Alternative emissions. Accordingly, this analysis takes a conservative approach of assuming that existing emissions at the Mitigated Alternative site are zero. The methodology used to calculate emissions from the proposed Mitigated Alternative is presented in **Table 2**, and summarized in each of the following sections.

2.1 Calculation Methodologies for Construction Emissions

Emissions from on-site construction and off-site street improvement-related equipment exhaust were estimated using the equipment inventory, equipment specifications and construction phase scheduling, provided and approved by Hall Equities Group. Sources of construction emissions are off-road exhaust, on-road vehicle exhaust, and off-gassing from paving and architectural coating. Consistent with the approach for estimating operational CAP emissions discussed below, the emissions from on-road vehicles, architectural coating off-gassing, and paving off-gassing from construction activities[3] were estimated using California Emissions Estimator Model (CalEEMod®), which has been accepted for use in CEQA analyses by BAAQMD. The off-road equipment exhaust emissions were calculated using the formulas shown in **Table 2** and CalEEMod® emission factors to analyse emissions from each piece of equipment. For all pollutants, construction equipment emissions were calculated as the product of the equipment emission factor, load factor, horsepower, and period of usage. Emissions from construction were estimated using information on equipment inventory, equipment specifications and construction phase scheduling, generated using CalEEMod®, and refined and approved by Hall Equities Group to reflect the Mitigated Alternative's projected construction activities. Emission estimates for street improvements were calculated based on equipment usage and equipment hours across the time improvements will be occurring. **Table 3** shows the refined construction equipment list with equipment parameters and usage based on CalEEMod® with appropriate refinements by the Hall Equities Group. Emission estimates include the assumption that the Mitigated Alternative will restrict idling to 2 minutes for all diesel powered construction equipment. Emissions were calculated for the entire Mitigated Alternative and equipment usage estimates were separated by parcel using the ratio of building square footage, as shown in **Table 2**.

Construction emission calculation methodologies were consistent with the BAAQMD Recommended Methods (BAAQMD 2012a). **Table 4a** shows emissions for the uncontrolled scenario, which are calculated using Tier 3 off-road emission standards on all construction equipment.[4] **Table 4b** shows emissions for the controlled scenario. The controlled scenario shows, as a proof of concept, that the Performance Standard which limits impacts below the BAAQMD CEQA Threshold can be achieved. The controlled scenario evaluated assumes that Tier 4 equivalent controls, in the form of Level 3 diesel particulate filters (DPF) on Tier 3 engines, will be installed on excavators, rollers, forklift, and air compressor. Note there are

[3] CalEEMod® criteria pollutant construction emissions include on-site and off-site vehicle activity as well as non-mobile emissions such as those from architectural coatings.

[4] CARB. Tier 3 Off-Road Emission Standards. Available online: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls. Accessed: April 2015.

other combinations equipment with additional controls which may also meet the Performance Standard.

2.2 Calculation Methodologies for Operational Emissions

Three types of sources will generate CAP emissions at the proposed Mitigated Alternative, including area sources, natural gas-fired emergency generators, and Mitigated Alternative - generated traffic. The emissions calculation methodologies of these sources are discussed below. Mitigated Alternative Operational emissions are summarized in **Tables 5** and **6**.

2.2.1 Area Sources

Ramboll Environ assumes that all direct area source emissions are based on CalEEMod® defaults for the building type (mid-rise apartment, supermarket, restaurant, and coffee shop). Ramboll Environ used CalEEMod® defaults based on building square footage and operational year to calculate equipment activity and emissions (**Table 1**). The proposed Mitigated Alternative area source emissions are dominated by consumer goods and architectural coatings. These sources include cleaning supplies, kitchen aerosols, and interior/exterior paint. Area source emissions also include emissions from residential natural gas fireplaces.

2.2.2 Emergency Generators

The proposed Mitigated Alternative includes three new natural gas emergency generators, one next to each proposed building. CAP emissions were calculated according to the interim Tier 2 emissions factors for each engine (100 Kilowatt [kW] in size) using the methodology from **Table 5**.

2.2.3 Mitigated Alternative Traffic

Mitigated Alternative generated traffic contributing to the operational CAP emissions includes commercial and residential trips. As shown in **Table 6**, average daily trip counts were based on the Traffic Impact Analysis (TIA) report provided by the Mitigated Alternative transportation engineer.[5] Average trip length and daily/annual vehicle miles travelled (VMT) were estimated by CalEEMod® (Contra Costa County defaults by land use, which represent average trip length throughout the county for each land use) and Economic and Planning Systems, Inc. (location-specific survey data) for the Mitigated Alternative traffic impact analysis. The CalEEMod® default trip lengths were used to model trips to and from home for the residents of the proposed Mitigated Alternative. The commercial trip lengths for consumers of the proposed Mitigated Alternative were adjusted from defaults based on a trade area analysis provided by Economic and Planning Systems, Inc.[6] Note the Mitigated Alternative trips do not include a subtraction of existing trips. This is conservative and in line with the project impact analysis for all sources.

The CalEEMod® emission factors, based on the county-wide annual average emission factors obtained from California Air Resource Board's Emissions Factor Model (EMFAC2011) for calendar year 2018 (Mitigated Alternative Build-out Year), were used to estimate traffic emissions.

[5] Omni-Means. Traffic Impact Analysis for the Saranap Village Mitigated Alternative. Table 2a. July 1, 2015.

[6] Data received from Ashleigh Kanat, Economic and Planning Systems, Inc. March 31, 2014.

2.3 Calculation Methodologies for Cumulative TAC Emissions

Consistent with the BAAQMD CEQA guidelines, cumulative impacts to off-site sensitive receptors were evaluated by summing potential impacts from other off-site stationary sources and mobile sources within the "zone of influence" in addition to the impacts from the Mitigated Alternative. The BAAQMD screening tools and BAAQMD provided emissions were used in conjunction with refined modeling inputs for these sources as described in sections below. Refined modeling for off-site stationary sources and mobile sources are discussed in Section 4.6 below.

3. ESTIMATED AIR CONCENTRATIONS

To evaluate air toxics, BAAQMD recommends that the project applicant evaluate health risks and hazards (including $PM_{2.5}$ concentrations) imposed by a project upon the surrounding community. This health risk and hazards analysis must be conducted both on a project-specific basis as well as a cumulative basis. Consistent with BAAQMD CEQA Guidelines, this analysis encompassed a "zone of influence" extending 1,000 feet from the proposed Mitigated Alternative site. The methodologies used to evaluate concentrations for the Mitigated Alternative and cumulative HRA were based on the most recent BAAQMD Recommended Methods (BAAQMD 2012a).

3.1 Mitigated Alternative Sources

The most recent version of the American Meteorological Society/Environmental Protection Agency regulatory air dispersion model (AERMOD Version 14134) was used to evaluate ambient air concentrations of DPM and $PM_{2.5}$ from the Mitigated Alternative sources. AERMOD is approved and recommended by BAAQMD for CEQA air quality analysis.[7]

This task includes evaluating construction emissions and estimating air concentrations based on those emissions. Ramboll Environ derived estimates of construction emissions using default assumptions about construction activity generated using CalEEMod® and OFFROAD2011 Tier 3 emission factors, as discussed above. For construction emissions, potential receptors evaluated included off-site sensitive receptors. Construction of Parcel C and street improvements overlap with the occupancy of new residents at Parcels A and B, so on-site sensitive receptors are included to evaluate the impact of that overlap. To estimate ambient air concentrations of DPM and $PM_{2.5}$ from diesel exhaust from construction activity, Ramboll Environ used the most recent version of the AERMOD dispersion model.[8] The estimated annual concentration of $PM_{2.5}$ at the point of maximum impact (conservatively greater than or equal to impact at maximum off-site sensitive receptor) was compared with the BAAQMD 2011 CEQA significance threshold for $PM_{2.5}$ from a single source.

3.1.1 Mitigated Alternative Modeling

For each receptor location, the model generated air concentrations (or air dispersion factors as unit emissions were modeled) that result from emissions from multiple sources.

Air dispersion models such as AERMOD require a variety of inputs such as source parameters, meteorological parameters, topography information, and receptor parameters. When site-specific information is unknown, Ramboll Environ used default parameter sets that are designed to produce conservative (i.e., overestimates of) air concentrations. The Mitigated Alternative boundary is shown in **Figure 1**.

Meteorological data: Air dispersion modeling applications require the use of meteorological data that ideally are spatially and temporally representative of conditions in the immediate vicinity of the site under consideration. For this technical report, meteorological data for years 2010 through 2014 from the Buchanan Airport meteorological site (KCCR) in Concord,

[7] Email from Jim Cordova, BAAQMD, January 9, 2014.

[8] USEPA. Alternative Models. Available online: http://www.epa.gov/scram001/dispersion_alt.htm [Accessed April 2015].

California, the closest BAAQMD-operated site to the Mitigated Alternative, was used. This meteorological data was processed into AERMOD ready data using USEPA's meteorological processor, AERMET (version 14134) and Oakland Airport's upper air data.

Terrain considerations: Elevation and land use data were imported from the National Elevation Dataset (NED) maintained by the United States Geological Survey (USGS, 2014). An important consideration in an air dispersion modeling analysis is the selection of rural or urban dispersion coefficients. Due to the residential/suburban areas surrounding the Mitigated Alternative site, Ramboll Environ used rural dispersion coefficients, which are more conservative.

Emissions: Emitting activities were modeled to reflect the potential range of hours of construction, up to a 10-hour day. The Mitigated Alternative will comply with grading noise ordinance, which generally limits construction from 7:30 a.m. to 5:30 p.m. Emissions were modeled using the χ/Q ("chi over q") method, such that the source has a unit emission rate (i.e., 1 gram per second [g/s]), and the model estimates dispersion factors (with units of [$\mu g/m^3$]/[g/s]).

For annual average ambient air concentrations, the estimated annual average dispersion factors were multiplied by the annual average emission rates. The model was set up to assume 7 a.m. to 5 p.m. distribution of emissions during all construction days (AERMOD does not allow half hour increments so this most closely approximates a 7:30 a.m. to 5:30 p.m. operation). Construction emissions are assumed to be evenly distributed throughout each parcel of the Mitigated Alternative site, and are represented by volume sources spaces 5 meters apart for both the on-site construction model and off-site street improvements. Modeling parameters for the volume sources are shown in **Table 7**. The modeled emission rates, for which the calculation methodology was discussed in Section 2.1, are shown in **Table 8a** (uncontrolled scenario) and **Table 8b** (controlled scenario). Emissions for construction equipment are assumed to be spread across a ten hour workday.

Receptors: In order to evaluate health impacts to off-site receptors, Ramboll Environ identified nearby sensitive receptor populations and included those discrete receptors in the model. Furthermore, to identify possible residential receptors, Ramboll Environ modeled a grid out to 1,000 feet at a 10 meter resolution. The modeled receptors cover both the possible sensitive receptors within 1,000 feet of the Mitigated Alternative, as well as the on-site and off-site residential receptors. To estimate the impact of construction on the new on-site residents, a 5 meter grid of receptors on-site was modeled. Ramboll Environ conservatively assumed receptors across Parcels A and B/B1. Modeled receptors are shown in **Figure 2**. Off-site receptors were modeled at 1.8 meters of height, while on-site receptors were modeled at 1.8 meters, 4.8 meters, 7.8 meters, 10.8 meters and 13.8 meters of height, reflective of ground-level, and second, third, fourth and fifth stories, respectively. As discussed previously, annual average dispersion factors were estimated for each receptor location.

3.2 Roadway Sources for Cumulative Analysis

BAAQMD recommends evaluating the impact of nearby roadways with traffic greater than 10,000 vehicles per day on new receptors of a project and at the maximally exposed

individual sensitive receptor (MEISR) of a project's construction. The analysis of off-site emissions on on0-site receptors applies to both the Project and the Mitigated Alternative.

The roadways within the 1,000 foot zone of influence of the project site are Boulevard Way, Highway 24, and multiple off- and on-ramps for Highway 24. The impact from Boulevard Way were estimated using BAAQMD's screening tool for surface streets as discussed in Section 4, so emissions were not estimated and dispersion modeling was not performed for this roadway.

TAC concentrations from vehicles traveling on Highway 24 and its ramps were estimated using CAL3QHCR, USEPA's recommended model for roadway modeling and the model used by BAAQMD for their screening tools. These roadways were explicitly modelled to take into account the complicated geometry of the area, take into account the later occupancy, and incorporate new OEHHA guidance.

Meteorological data from BAAQMD's Concord station (KCCR) for 2005 was used in the model. Similar to the AERMOD modelling, rural dispersion factors were used. The roadway sources include all travel lanes and 3 meters on either side to account for turbulent mixing of the plume behind the cars, consistent with CAL3QHCR guidance (USEPA 1995).

Traffic volumes for the ramps were obtained from Caltrans's Ramp Volumes (Caltrans 2013). Traffic volumes for Highway 24 were obtained from Caltrans's Traffic Volumes (Caltrans 2013b) and volumes on the ramps were removed to account for the actual traffic volume on that segment of the roadway. The truck traffic on Highway 24 was obtained from Caltrans's Truck Traffic (Caltrans 2013b).

Emission factors were calculated based on EMFAC2011, California Air Resources Board's emissions estimator model for on-road emissions. Emission factors were calculated consistent with the approach described in BAAQMD's Recommended Methods (BAAQMD 2012a) for 2018. Consistent with the BAAQMD guidance, emission factors were calculated for DPM, $PM_{2.5}$ (exhaust and brake and tire ware), and TOG from exhaust and evaporation from gasoline vehicles. The emission factors were combined with the correct traffic volume (e.g., DPM emissions for diesel traffic only), using the percent of vehicle miles travelled for each fuel type from EMFAC.

The same on-site receptors used in the AERMOD modeling were used here.

In accordance with BAAQMD Guidance, cumulative impacts were evaluated at the maximally exposed individual sensitive receptor (MEISR) for the incremental cancer risk/chronic HI identified for the Mitigated Alternative (BAAQMD 2012a). The MEISRs for the Project are at similar locations and would experience similar exposures to off-site emissions. (See Figure 3a, *Hall Saranap Air Quality Technical Report,* dated April 17, 2014)

3.3 Stationary Sources for Cumulative Analysis

Based on a search of the most recent BAAQMD stationary source database (BAAQMD 2012b), there is one stationary source within 1,000 feet of the project site (Hull's Chapel). Ramboll Environ refined the impact reported in BAAQMD's stationary source tool using emissions provided by BAAQMD and SCREEN3 (a USEPA screening model), as shown in

Appendix C. A health risk assessment was also performed on this source, consistent with methods described in Section 4 of this report. To evaluate the contribution to risk, hazards and $PM_{2.5}$ from this source, the impact from this source was added to the contribution from the vehicle emissions at the MEISR, as discussed in the following sections.

4. RISK CHARACTERIZATION METHODS

In response to concerns regarding children's health and to address the specific mandates of Senate Bill 25, OEHHA recently finalized the Hot Spots Program Guidance Manual for Preparation of HRAs to incorporate the critical information from the three previously released Technical Support Documents (TSDs) into one guidance manual. The updated Guidance Manual supersedes the 2003 OEHHA Hot Spots Guidance Manual. The methodology used in this HRA follows the recommended approach in the 2015 Hot Spots Guidance Manual, including the incorporation of age-sensitivity factors (ASFs) in the cancer risk evaluation, age-specific breathing rates, and "fraction of time at home" (FAH) in residential risk evaluations. Due to the updated guidance in the 2015 Hot Spots Guidance Manual, Ramboll Environ utilized a Daily Breathing Rate for the Mitigated Alternative that is approximately double of what was used for the 2014 Project (thus risks calculated would be approximately double for the same air quality impacts).

The following sections discuss in detail the various components required to conduct the HRA.

4.1 Mitigated Alternative Sources Evaluated

As discussed in Section 1.2, Ramboll Environ evaluated excess lifetime cancer risk, chronic HIs, and $PM_{2.5}$ concentrations for Mitigated Alternative construction (Parcel A, 1.75 years; or approximately 21 months; Parcel B, 1.5 years or approximately 18 months; and Parcel C, 1 year or approximately 11 months) as well as street improvements that are occurring concurrently with construction activities (0.5 years; or approximately 6 months). For on-site impacts, Ramboll Environ modeled construction duration when on-site residents may be present during construction (up to 7 months). Note that impacts from the operational scenario were not evaluated because TAC emissions will be minimal due to the use of natural-gas fired generators, which emit only negligible levels of TACs.

4.2 Exposure Assessment

Potentially Exposed Populations: This evaluation conservatively evaluated the off-site and on-site adult and child resident receptor populations for the construction scenario.

As the residential exposure assumptions are more conservative than those for other sensitive receptor types, a conservative approach of considering all sensitive receptors as residential receptors was used in this HRA. Similarly, because the exposure assumptions for a resident child age 0-<2 years are the most conservative residential assumptions, the analysis was conducted for resident children in this age group as a conservative approach. The off-site receptors grid extends from the Mitigated Alternative boundary to a 1000 foot buffer with 10 meter spacing and is shown in **Figure 2**. The on-site receptor grid is modeled with 5 meter spacing as discussed above.

Exposure Parameters: The exposure parameters used to estimate excess lifetime cancer risks for the on-site and off-site resident child population for the construction scenario were obtained from the OEHHA 2015 Hot Spots Risk Assessment Guidelines from (Cal/EPA 2015), unless otherwise noted, and are presented in **Table 9**. **Table 9** presents exposure parameters for all Mitigated Alternative construction phases as well as street improvements for both off-site and on-site sensitive receptors. As discussed in Section 2.1, construction durations less than one year were set to one year to allow for annualization of emissions. For

the calculation of intake factors the duration was set to one year to match the averaging period. As discussed previously, the exposure periods and exposure durations varies among these evaluations while other exposure parameters are the same.

Calculation of Intake: The dose estimated for each exposure pathway is a function of the concentration of a chemical and the intake of that chemical. The intake factor for inhalation, IF_{inh}, can be calculated as follows:

$$IF_{inh} = \frac{DBR * FAH * EF * ED * CF}{AT}$$

Where:

IF_{inh}	=	Intake Factor for Inhalation (m^3/kg-day)
DBR	=	Daily Breathing Rate (L/kg-day)[9]
FAH	=	Fraction of Time at Home (unitless)
F	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)[10]
AT	=	Averaging Time (days)
CF	=	Conversion Factor, 0.001 (m^3/L)

FAH is an exposure parameter that is newly incorporated in the 2015 Hot Spots Guidance Manual to adjust for time spent away from the home under the assumption that exposure to facility-specific emissions are not occurring away from the home for the residents. In this conservative analysis the FAH was conservatively assumed to be 1.

The chemical intake or dose is estimated by multiplying the inhalation intake factor, IF_{inh}, by the chemical concentration in air, C_i. When coupled with the chemical concentration, this calculation is mathematically equivalent to the dose algorithm given in the Office of Environmental Health Hazard Assessment (OEHHA) Hot Spots guidance (Cal/EPA 2015).

4.3 Toxicity Assessment

The toxicity assessment characterizes the relationship between the magnitude of exposure and the nature and magnitude of adverse health effects that may result from such exposure. For purposes of calculating exposure criteria to be used in risk assessments, adverse health effects are classified into two broad categories – cancer and non-cancer endpoints. Toxicity values used to estimate the likelihood of adverse effects occurring in humans at different exposure levels are identified as part of the toxicity assessment component of a risk assessment.

[9] Although the total construction exposure duration is over two years for the offsite resident, the most conservative breathing rate for a 0-<2 year old resident was used for all components of this analysis.

[10] As discussed in Section 2.1, construction durations less than one year were set to one year to allow for annualization of emissions. For the calculation of intake factors the duration was set to one year to match the averaging period.

Toxicity values for DPM are summarized in **Table 10**.

4.4 Age Sensitivity Factors

The estimated excess lifetime cancer risks for a resident child was adjusted using the age sensitivity factors (ASFs) recommended by OEHHA (Cal/EPA 2009, and 2015). This approach accounts for an "anticipated special sensitivity to carcinogens" of infants and children. Cancer risk estimates are weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to two years of age and by a factor of three for exposures that occur from two years through 15 years of age. No weighting factor (i.e., an ASF of one, which is equivalent to no adjustment) is applied to ages 16 to 70 years. **Table 11** shows the ASF used for resident children ages 0-<2 years. Although the total construction duration is longer than two years, the maximum ASF of 10 was used for this analysis to be protective of on- and off-site residential children.

4.5 Risk Characterization

4.5.1 Estimation of Cancer Risks

Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF).

The equation used to calculate the potential excess lifetime cancer risk for the inhalation pathway is as follows:

$$Risk_{inh} = C_i \times CF \times IF_{inh} \times CPF \times ASF$$

Where:

$Risk_{inh}$	=	Cancer Risk; the incremental probability of an individual developing cancer as a result of inhalation exposure to a particular potential carcinogen (unit-less)
C_i	=	Annual Average Air Concentration for $Chemical_i$ ($\mu g/m^3$)
CF	=	Conversion Factor (mg/µg)
IF_{inh}	=	Intake Factor for Inhalation (m^3/kg-day)
CPF_I	=	Cancer Potency Factor for $Chemical_i$ (mg chemical/kg body weight-day)$^{-1}$
ASF	=	Age Sensitivity Factor (unitless)

The excess lifetime cancer risk is estimated for all Mitigated Alternative construction phases as well as street improvements; those results are then summed to calculate the total excess lifetime cancer risk for each receptor due to the emissions associated with construction of the Mitigated Alternative and street improvements.

4.5.2 Estimation of Chronic Noncancer Hazard Quotients/Indices

Chronic HI

The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the noncancer chronic reference exposure level (cREL) for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient (HQ). To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the HQs for all chemicals are summed, yielding a HI. DPM is the only pollutant evaluated for chronic non-cancer hazard in this HRA; therefore the HQ for DPM is the same as the overall HI.

$$HQ_i = C_i / cREL_i$$

$$HI = \sum HQ_i$$

Where:

HQ_i = Chronic hazard quotient for chemical$_i$
HI = Hazard index
C_i = Annual average concentration of chemical$_i$ (µg/m^3)
$cREL_i$ = Chronic noncancer reference exposure level for chemical$_i$ (µg/m^3)

The chronic HI is estimated for all Mitigated Alternative construction phases and street improvements; because there are overlaps among the construction phases those results for each phase are then conservatively summed to calculate the total chronic HI for each receptor due to the emissions associated with construction of the Mitigated Alternative and street improvements.

4.6 Roadway Sources

Highway 24 and its ramps were explicitly modeled and health impacts were explicitly evaluated, with the results applying to the Project and to the Mitigated Alternative. The modeled concentrations were scaled to take into account the reduction in emissions with time and higher age sensitivity factor and breathing rate early in occupancy. This scaling was performed consistent with guidance in BAAQMD’s Recommended Methods (BAAQMD 2012a), but was updated to include the intake factor to incorporate the change in breathing rate by age from the new OEHHA guidance. In order to consider the 2015 OEHHA guidance in the surface street screening, a ratio of intake factors between the 2003 guidance and the 2015 guidance was applied to the cancer risk estimated in BAAQMD's screening tool.

5. PROPOSED MITIGATION MEASURES

The analysis of the uncontrolled scenario demonstrates that the uncontrolled Mitigated Alternative will have potentially significant health risk impacts on off-site receptors. Controls should be imposed requiring the Mitigated Alternative to achieve a Performance Standard consisting of the BAAQMD health risk thresholds stated above. The use of CARB-certified Level 3 VDECS filters on certain equipment, and 2 minute idling restrictions on all diesel powered construction equipment, achieves this performance standard, as demonstrated in the controlled scenario.

Other potential means of achieving the Performance Standard are listed below. If the applicant determines to employ an alternative means of achieving the Performance Standard, it should be required to demonstrate, to the satisfaction of the County, that the alternative measures achieve the Performance Standard.

5.1 Tier 4 Protections On Different Equipment

Tier 4 equipment or CARB-certified Level 3 VDECS, such as a DPF, installed on Tier 3 equipment can be used on equipment other than the engines identified above to achieve significant reductions in DPM emissions from construction equipment. Level 3 DPFs remove at least 85% of diesel particulate matter. DPF installation can also result in co-benefits for other CAPs, such as NO_x and ROG.[11]

5.2 Reduced Idling

According to BAAQMD CEQA 2011 CEQA Guidelines, one mitigation measure that will reduce emissions is Construction Mitigation Measure # 9, which specifies: "minimizing the idling time of diesel powered construction equipment to two minutes."[12] According to BAAQMD CEQA 2011 Guidelines, implementation of Measure # 9 will result in a 20 percent reduction for NO_x and a 45 percent reduction of PM_{10} and $PM_{2.5}$ emissions. As discussed in Section 2.1, Ramboll Environ assumes Saranap will impose a 2 minute idling limit on all construction equipment as a way to achieve the desired Performance Standard.

5.3 Alternative Fuels

Construction equipment emissions can be mitigated through the use of alternative fuel. Biodiesel/biofuel and hybrid electrification are alternative fuel options for construction equipment.[13] Biodiesel can reduce DPM emissions by up to 10 percent.[14] Hybrid electrification is the use of two different sources of energy to power equipment, such as diesel fuel and electricity. The use of hybrid electrification can reduce diesel fuel usage by 25 percent.[15]

---

[11] CARB. Verified Diesel Control Technologies. Available online: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm. Accessed: April 2015.

[12] BAAQMD. CEQA Air Quality Guidelines. May 2011. Table 8-2.

[13] USEPA. *Cleaner Diesels: Low Cost Ways to Reduce Emissions from Construction Equipment.* http://www.epa.gov/sectors/pdf/emission_0307.pdf [Accessed April 2015].

[14] Ibid.

[15] https://www.johndeereemissionshub.com/2013/04/25/hybrid-electrification-provides-a-productive-and-even-more-efficient-emissions-solution/ [Accessed April 2015].

5.4 MERV Filters

In their CEQA guidelines, the BAAQMD outlines potential mitigation measures for reducing emissions and exposure to sensitive receptors, including:

> "Install and maintain air filtration systems of fresh air supply either on an individual unit-by-unit basis, with individual air intake and exhaust ducts ventilating each unit separately, or through a centralized building ventilation system. The ventilation system should be certified to achieve a performance effectiveness, for example, to remove at least 85% of ambient $PM_{2.5}$ concentrations from indoor areas. Air intakes should be located away from emission sources areas, such as major roadways."

This recommendation is based on the work of Fisk et al. (2002), who conducted a study of the performance and costs of particulate air filtration technologies and determined that ASHRAE Dust Spot 85% (identified as having a minimum efficiency reporting value rating of 13 [MERV-13]) filters provided an 80% or greater reduction of outdoor fine particulate matter (such as DPM) if the ventilation systems is operated with one air exchange per hour of outside air and four air exchanges per hour of recirculated air. The removal efficiency increased up to 95% with use of a high efficiency particulate air (HEPA) filter.

Installing filters and adjusting the ventilation system in such a way to meet the parameters specified by Fisk et al. (i.e., with one air exchange per hour of outside air and four air exchanges per hour of recirculated air), may provide an 80% or greater reduction in indoor air concentrations of $PM_{2.5}$ and compounds which contribute to the excess cancer risk (such as DPM).

5.5 Construction Phasing

As discussed in Section 4.4, cancer risk calculations are adjusted to account for exposure of infants and children, who are assumed to be particularly sensitive to carcinogens. By conducting construction in phases and extending construction duration, the levels of air concentrations to which infants and children are exposed to at the most sensitive age (i.e., from the third trimester through two years) will be decreased and may decrease the estimated lifetime cancer risk associated with those exposures. This impact may be minimal unless construction phasing significantly extends the total project duration.

6. RESULTS FOR MITIGATED ALTERNATIVE ANALYSIS

In this Section, the Mitigated Alternative results are compared to the BAAQMD thresholds for a single source.

6.1 Criteria Air Pollutants and Precursors

6.1.1 Construction CAPs

The BAAQMD 2011 CEQA significance thresholds for construction-related CAPs and precursors are:

- Average daily ROG, $PM_{2.5}$, and NO_x emissions greater than 54 pounds per day (lb/day);
- Average daily PM_{10} emissions greater than 82 lb/day;

Table 12a shows the total CAP emissions associated with the Mitigated Alternative construction for the uncontrolled scenario. The average daily incremental ROG (7.8 lb/day), NO_x (7.5 lb/day), PM_{10} (0.16 lb/day), and $PM_{2.5}$ (0.16 lb/day) emissions associated with the Mitigated Alternative operation are all below the BAAQMD 2011 CEQA significance thresholds.

Table 12b shows the total CAP emissions associated with the Mitigated Alternative construction for the controlled scenario. The average daily incremental ROG (7.7 lb/day), NO_x (7.5 lb/day), PM_{10} (0.12 lb/day), and $PM_{2.5}$ (0.12 lb/day) emissions associated with the Mitigated Alternative operation are all below the BAAQMD 2011 CEQA significance thresholds.

6.1.2 Operation CAPs

The BAAQMD 2011 CEQA significance thresholds for operation-related CAPs and precursors are:

- Average daily ROG, $PM_{2.5}$, and NO_x emissions greater than 54 lb/day;
- Average daily PM_{10} emissions greater than 82 lb/day;
- Maximum annual ROG, $PM_{2.5}$, and NO_x emissions greater than 10 tons/year (tpy); and,
- Maximum annual PM_{10} emissions greater than 15 tpy.

Table 13 shows the total CAP emissions associated with the Mitigated Alternative operation. The average daily incremental ROG (25 lb/day), NO_x (18 lb/day), PM_{10} (9.4lb/day), and $PM_{2.5}$ (2.8 lb/day) emissions associated with the Mitigated Alternative operation are below the BAAQMD CEQA thresholds. The maximum annual ROG (4.5 tpy), NO_x (3.2 tpy), PM_{10} (1.7 tpy), and $PM_{2.5}$ (0.51 tpy) emissions associated with the Mitigated Alternative operation are also below the BAAQMD 2011 CEQA significance thresholds. As discussed previously, this analysis does not net out existing emissions from Mitigated Alternative emissions. Instead, this analysis takes a conservative approach of assuming that existing emissions at the Mitigated Alternative site are zero.

6.2 Risk and Hazards

6.2.1 Construction Risk and Hazards

Table 14a shows the total estimated excess lifetime cancer risk, chronic noncancer HI, and $PM_{2.5}$ concentration at the MEISR during Mitigated Alternative construction and street improvements for the uncontrolled construction scenario. The estimated cancer risk and $PM_{2.5}$ concentration due to Mitigated Alternative construction does exceed the BAAQMD 2011 CEQA significance threshold. Accordingly, mitigation as proposed in Section 5.1 above is appropriate. The $PM_{2.5}$ concentration and Chronic HI due to Mitigated Alternative construction are below the BAAQMD 2011 CEQA significance threshold. **Figure 3a** shows the location of the lifetime excess cancer risk off-site MEISR, the chronic HI MEISR, and (conservatively) the $PM_{2.5}$ concentration point of maximum impact (PMI) for the uncontrolled scenario.

Table 14b shows the total estimated excess lifetime cancer risk, chronic noncancer HI, and $PM_{2.5}$ concentration at the off-site MEISR during Mitigated Alternative construction and street improvements for the controlled construction scenario. The estimated cancer risk, chronic HI, and $PM_{2.5}$ concentration due to Mitigated Alternative construction are below the respective BAAQMD 2011 CEQA significance thresholds. **Figure 3b** shows the location of the lifetime excess cancer risk off-site MEISR, the chronic HI off-site MEISR, and (conservatively) the $PM_{2.5}$ concentration PMI for the controlled scenario. This controlled scenario demonstrates that a Performance Standard of meeting the BAAQMD 2011 CEQA significance threshold can be achieved in practice. The controlled scenario assumes off-road construction equipment has the following pollution control measures, which are summarized in **Appendix E**, **Table E-1**:

1. All off-road construction equipment has Tier 3 rated engines.
2. All off-road construction equipment is restricted to 2-minute idling.
3. The following equipment has a Diesel Particulate Filter (DPF): excavators in both the demolition and grading construction phases, forklifts in the building construction phase, air compressors in the architectural coating phase, and rollers in the street improvements phase of construction.

Table 14c shows the total estimated excess lifetime cancer risk, chronic noncancer HI, and $PM_{2.5}$ concentration at the on-site MEISR during Mitigated Alternative construction and street improvements for the uncontrolled construction scenario. The estimated cancer risk, chronic HI, and $PM_{2.5}$ concentration due to Mitigated Alternative construction are below the respective BAAQMD 2011 CEQA significance thresholds. **Figure 3c** shows the location of the lifetime excess cancer risk on-site MEISR, the chronic HI on-site MEISR, and (conservatively) the $PM_{2.5}$ concentration point of maximum impact (PMI) for the uncontrolled scenario. This uncontrolled scenario demonstrates that the BAAQMD 2011 CEQA significance threshold can be achieved in practice; therefore, the results from the controlled scenario are not presented for the onsite receptor.

7. RESULTS FOR CUMULATIVE ANALYSIS

7.1 Cumulative Risk and Hazards

7.1.1 Methodology

The cumulative analysis is conducted at the MEISR identified for the Mitigated Alternative; results at that location are compared to the BAAQMD 2011 CEQA significance thresholds for cumulative impacts:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic noncancer HI greater than 10; and
- An incremental increase in the annual average $PM_{2.5}$ of greater than 0.8 µg/m^3.

The incremental cancer risk, chronic HI, and $PM_{2.5}$ MEISR for Mitigated Alternative construction was identified as a residential location within 1,000 feet of the Mitigated Alternative; emissions from all identified sources within 1,000 feet of the Mitigated Alternative boundary were evaluated at this single location and added to the results from the Mitigated Alternative's single source evaluation, summarized in Section 5.3.

Stationary Sources: For stationary sources, the BAAQMD Risk Analysis Tool was used to identify stationary sources within 1,000 feet of the Mitigated Alternative, as discussed in previous sections. The results of the stationary source screening are presented in **Table 15**. These results are generally the same as they are for the Project.

Major Roadways: Impacts from traffic on major roadways within 1,000 feet of the Mitigated Alternative were evaluated using the BAAQMD screening methodology for surface streets and highways, as discussed in previous sections. The results of the roadway screening and highway modeling are presented in **Table 16**. These results are generally the same as they are for the Project. As shown in Table 16, Ramboll Environ evaluated each source against single source thresholds outlined by BAAQMD.

7.1.2 Results

Table 17a shows a summary of the estimated excess lifetime cancer risks, chronic noncancer HIs, and $PM_{2.5}$ concentrations for each of the source types listed above evaluated at the Mitigated Alternative's respective off-site MEISRs for the uncontrolled construction scenario. As discussed in Section 4.1, operational health impacts to off-site receptors will be negligible. Due to limited project trips (fewer than 10,000 average annual daily trips), Ramboll Environ assumes impacts from project traffic will be minimal. The estimated cumulative cancer risk is 34 in one million, which is below the BAAQMD 2011 CEQA significance threshold of 100 in one million. The estimated chronic noncancer HI is 0.03, which is below the BAAQMD 2011 CEQA significance threshold of 10. The estimated $PM_{2.5}$ concentration is 0.49 µg/m^3, which is below the BAAQMD 2011 CEQA significance threshold of greater than 0.8 µg/m^3.

Table 17b shows a summary of the estimated excess lifetime cancer risks, chronic noncancer HIs, and $PM_{2.5}$ concentrations for each of the source types listed above evaluated at the Mitigated Alternative's respective off-site MEISR including the controlled construction

scenario. As discussed in Section 4.1, there will be negligible operational impacts to off-site receptors. The estimated cumulative cancer risk is 28 in one million, which is below the BAAQMD 2011 CEQA significance threshold of 100 in one million. The estimated chronic noncancer HI is 0.03, which is below the BAAQMD 2011 CEQA significance threshold of 10. The estimated $PM_{2.5}$ concentration is 0.46 $\mu g/m^3$, which is below the BAAQMD 2011 CEQA significance threshold of 0.8 $\mu g/m^3$.

Table 17c shows a summary of the estimated excess lifetime cancer risks, chronic noncancer HIs, and $PM_{2.5}$ concentrations for each of the source types listed above evaluated at the Mitigated Alternative's respective on-site MEISR including the uncontrolled construction scenario. As discussed in Section 4.1, there will be negligible operational impacts to on-site receptors. The estimated cumulative cancer risk is 23 in one million, which is below the BAAQMD 2011 CEQA significance threshold of 100 in one million. Note modeled impacts from Highway 24 contribute to 8.6 in a million of the cumulative cancer risk. The estimated chronic noncancer HI is 0.02, which is below the BAAQMD 2011 CEQA significance threshold of 10. The estimated $PM_{2.5}$ concentration is 0.41 $\mu g/m^3$, which is below the BAAQMD 2011 CEQA significance threshold of 0.8 $\mu g/m^3$.

Since the Mitigated Alternative will utilize natural gas generators only, as discussed in Section 4.1, the cumulative results at the on-site operational MEISR are due to impacts from off-site stationary sources and roadways only. The results presented in **Tables 15** and **16** represent the cumulative impacts on-site from off-site sources, which apply to the Project as well as the Mitigated Alternative. They are an overestimate of impacts because they represent the maximum impact anywhere on-site and not at one specific location.

8. LOCALIZED CO IMPACTS FROM MOTOR VEHICLE TRAFFIC

According to the BAAQMD's screening criteria for CO (BAAQMD 2011a), projects are considered less than significant if:

1. The project is consistent with an applicable congestion management program established by the county's congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

In order to calculate the traffic volumes at affected intersections, average daily traffic (ADT) and peak hour traffic volumes for roadways within 1,000 feet of the Mitigated Alternative were obtained from data reported by California Environmental Health Tracking Program (CEHTP)[16] for surface streets and California Department of Transportation (Caltrans, 2012)[17] for Highway 24. Based on Ramboll Environ evaluation of Average Daily Trips and Peak Traffic Volume (vehicles/hour) at key intersections, the Mitigated Alternative traffic will not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. In order to be conservative, the highway network at the north edge of the 1000 foot Mitigated Alternative buffer is considered as an intersection. The maximum traffic is at the intersection (Highway 24 plus Camino Diablo) and has an estimated 18,250 existing plus project maximum vehicles/hour.

This Mitigated Alternative is consistent with the applicable congestion management program established by the county's congestion management agency, and no vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway) at the affected interactions. Therefore, the Mitigated Alternative will meet all the criteria at key intersections near the Mitigated Alternative site and is less than significant for CO.

[16] California Environmental Health Tracking Program (CEHTP) traffic spatial linkage web service. Available online at: http://www.ehib.org/traffic_tool.jsp. Accessed: April 2015.

[17] California Department of Transportation (Caltrans). Available online at: http://traffic-counts.dot.ca.gov/. Accessed: April 2015.

9. UNCERTAINTIES

In accordance with risk assessment guidance, Ramboll Environ has evaluated the uncertainties associated with this technical report, including emissions estimation, air dispersion modeling, and risk estimation. This HRA was performed using the best data and methodologies available at the time, notwithstanding the fact that there are the uncertainties outlined below.

Estimation of Emissions: There are uncertainties associated with the estimation of emissions from operation of the Mitigated Alternative. Where project-specific data, such as emission factors, are not available, default assumptions in AP-42, CalEEMod®, California Air Resource's Board Emissions Factor Model (EMFAC2011), and United States Environmental Protection Agency (USEPA) Factor Information Retrieval (FIRE) database were used.

Estimation of Exposure Concentrations: There is also uncertainty associated with the estimated exposure concentrations. The limitations of the air dispersion model provide a source of uncertainty in the estimation of exposure concentrations. According to USEPA, errors due to the limitation of the algorithms implemented in the air dispersion model in the highest estimated concentrations of +/- 10 percent to 40 percent are typical (USEPA 2005).

Source Representation: The source parameters used to model emission sources add uncertainty. For all emission sources, Ramboll Environ used source parameters which were source-specific, recommended as defaults, or expected to produce more conservative results. Discrepancies might exist in actual emissions characteristics of a source and its representation in the model; exposure concentrations used in this assessment represent approximate exposure concentrations.

Exposure Assumptions: For the risk and hazards calculations as well as the cumulative impact HRA, numerous assumptions must be made in order to estimate human exposure to chemicals. These assumptions include parameters such as breathing rates, exposure time and frequency, exposure duration, and human activity patterns. While a mean value derived from scientifically defensible studies is the best estimate of central tendency, most of the exposure variables used in this HRA are high-end estimates. For example, it is assumed that off-site residential receptor exposure to emissions due to Mitigated Alternative construction and street improvement activities occurs over the entire construction duration and exposure to the cumulative emissions sources occur 24 hours per day for 350 days per year, a highly conservative assumption since most residents do not remain in their homes for this period of time. The combination of several high-end estimates used as exposure parameters may substantially overestimate chemical intake. The excess lifetime cancer risks calculated in this assessment are therefore likely to be higher than may be required to be protective of public health.

Toxicity Assessment: The Cal/EPA CPF for DPM was used to estimate cancer risks associated with exposure to DPM from construction equipment and off-site stationary sources. However, the CPF derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization (WHO), had classified DPM as Probably Carcinogenic to Humans (Group

2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment (USEPA 2002). However, based on two recent scientific studies (Attfield et al. 2012 and Silverman et al. 2012), IARC recently re-classified DPM as Carcinogenic to Humans to Group 1 (IARC 2012), which means that the agency has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans and represents the strongest weight-of-evidence rating in IARC's carcinogen classification scheme. This determination by the IARC may provide additional impetus for the USEPA to identify a quantitative dose-response relationship between exposure to DPM and cancer.

Risk Calculations: The USEPA notes that the conservative assumptions used in a risk assessment are intended to assure that the estimated risks do not underestimate the actual risks posed by a site and that the estimated risks do not necessarily represent actual risks experienced by populations at or near a site (USEPA 1989).

The estimated risks in this HRA are based primarily on a series of conservative assumptions related to predicted environmental concentrations, exposure, and chemical toxicity. The use of conservative assumptions tends to produce upper-bound estimates of risk. Although it is difficult to quantify the uncertainties associated with all the assumptions made in this risk assessment, the use of conservative assumptions is likely to result in substantial overestimates of exposure, and hence, risk. BAAQMD acknowledges this uncertainty by stating: "the methods used [to estimate risk] are conservative, meaning that the real risks from the source may be lower than the calculations, but it is unlikely that they will be higher" (BAAQMD 2011d).

10. REFERENCES

Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT. 2012. The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust. J Natl Cancer Inst; Environmental Data Resources, Inc. (EDR). 2004. "Aerial Photography Print Service: Inquiry Number 123," Month and day.

Bay Area Air Quality Management District (BAAQMD). 2010. Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines. January.

BAAQMD. 2011a. California Environmental Quality Act Air Quality Guidelines. May. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx. Accessed April 2015.

BAAQMD. 2011b. Roadway Screening Tables. Contra Costa County. April. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/County%20Surface%20Street%20Screening%20Tables%20Dec%202011.ashx?la=en. Accessed April 2015.

BAAQMD. 2011c. Highway Screening Analysis Tool. Contra Costa County. April. Available online at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. Accessed April 2015.

BAAQMD. 2011d. Frequently Asked Questions – Toxic Air Contaminants. Available online at: http://www.baaqmd.gov/Help/~/~/link.aspx?_id=C8992846AA0045ECABDB489211201B61&_z=z. Accessed April 2015.

BAAQMD. 2012a. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

BAAQMD. 2012b. Stationary Source Screening Analysis Tool. Santa Clara County. May. Available online at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx. Accessed April 2015.

Cal/EPA. 2015. The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Office of Environmental Health Hazard Assessment. February.

California Environmental Protection Agency (Cal/EPA). 2009. Technical Support Document for Cancer Potency Factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. Office of Environmental Health Hazard Assessment. May.

CalTrans. 2013a. Ramp Volumes. Available at: http://traffic-counts.dot.ca.gov/

CalTrans. 2013b. Traffic Volumes. Available at: http://traffic-counts.dot.ca.gov/

CalTrans. 2013c. Truck Traffic Volumes. Available at: http://traffic-counts.dot.ca.gov/

Fisk, W.J., D. Faulkner, J. Palonen, and O. Seppanen. 2002. Performance and costs of particle air filtration technologies. Indoor Air. 12: 223-234.

International Agency for Research on Cancer (IARC). 2012. Press Release No. 213. IARC: Diesel Engine Exhaust Carcinogenic. June.

Silverman DT, Samanic CM, Lubin JH, Blair AE, Stewart PA, Vermeulen R, Coble JB, Rothman N, Schleiff PL, Travis WD, Ziegler RG, Wacholder S, Attfield MD. 2012. The Diesel Exhaust in Miners Study: A Cohort Mortality Study With Emphasis on Lung Cancer. J Natl Cancer Inst.

United States Environmental Protection Agency (USEPA). 1989. Risk Assessment Guidance for Superfund Human Health Risk Assessment: U.S. EPA Region IX Recommendations (Interim Final). San Francisco, CA. December.

USEPA. 1995. Addendum to the User's Guide to CAL3QHC Version 2.0 (CAL3QHCR User's Guide). Peter A. Eckhoff and Thomas N. Braverman. Available online at: http://www.epa.gov/ttn/scram/userg/regmod/cal3qhcrug.pdf. Accessed June 2015.

USEPA. 2002. Health Assessment Document for Diesel Engine Exhaust. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. EPA/600/8-90/057F. May.

USEPA. 2005. Guideline on Air Quality Models (Revised). 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. November.

United States Geological Survey (USGS). National Elevation Dataset. Available online at: http://viewer.nationalmap.gov/viewer/. Accessed April 2015.

TABLES

Table 1
Conceptual Layout of Proposed Maximum Development
Saranap Village Mitigated Alternative
Walnut Creek, California

Parcel	Proposed Land Use	CalEEMod Land Use Type and Subtype	Proposed Size	Unit
A	Residential - Apartments	Apartments - Mid Rise	111	dwelling units
	Retail - Grocery Store	Supermarket	7,636	square feet
	Retail	Strip Mall[1]	1,750	square feet
	Swimming Pool	Recreational Swimming Pool	737	square feet
	Parking Garage	Enclosed Parking with Elevator	315	parking spaces
B	Residential - Apartments	Apartments - Mid Rise	55	dwelling units
	Swimming Pool	Recreational Swimming Pool	936	square feet
	Retail	Strip Mall	2,475	square feet
	Restaurant	High Turnover (Sit Down Restaurant)	4,813	square feet
	Parking Garage	Enclosed Parking with Elevator	108	parking spaces
B1	Residential - Apartments	Apartments - Mid Rise	6	dwelling units
	Coffee Shop	Fast Food w/o Drive Through	2,135	square feet
	Retail	Strip Mall[1]	3,452	square feet
C	Residential - Apartments	Apartments - Mid Rise	24	dwelling units
	Parking Garage	Enclosed Parking with Elevator	48	parking spaces
O	Onsite Surface Streets	Parking lot[1]	0.73	acres

Notes:
[1]This is the best CalEEMod land-use type fit.

Table 2
Emissions Calculations Methodology
Saranap Village Mitigated Alternative
Walnut Creek, California

Type	Source	Methodology and Formula	Reference
Construction Equipment	Off-Road Equipment[1]	$Ec = \Sigma(EFc * HP * LF * Hr * C)$	ARB/USEPA Engine Standards USEPA NONROAD
Operational On-Road Mobile Sources[2]	Running Exhaust, Brake Wear, Tire Wear, and Running Losses	$E_R = \Sigma(EF_R * VMT * C)$, where VMT = Trip Length * Trip Number	EMFAC2011
	Starting Exhaust and Evaporative ROG	$E_S = \Sigma(EF_S * \text{Trip Number} * C)$	EMFAC2011
	Idling Exhaust	$E_I = \Sigma(EF_I * \text{Trip Number})$	EMFAC2011
Operation	Generators and Fire Pumps[3]	$E = EF * HP * Hr$	ARB/USEPA Off-Road Engine Standards

Notes:

1. Ec: off-road equipment exhaust emissions (lb).
   EFc: emission factor (g/hp-hr). CalEEMod 2013.2.2. default emission factors used.
   HP: equipment horsepower. OFFROAD2011.
   LF: equipment load factor. OFFROAD2011.
   Hr: equipment hours. The detailed equipment hours by construction phase will be presented in Appendix A.
   C: unit conversion factor.

2. Operational on-road mobile VMT is based on data from the Project sponsor and fleet mix based on CalEEMod defaults.

   E_R: emissions for running exhaust, brake wear, tire wear and running losses (lb).
   EF_R: emission factor (g/mile). From EMFAC2011. VMT: vehicle miles traveled C: unit conversion factor.

   E_S: vehicle starting exhaust and evaporative ROG emissions (lb).
   EF_S: vehicle starting or evaporative ROG emission factor (g/trip). From EMFAC2011. EMFAC reports emission rates in g/vehicle/day, vehicle population and trips in trips/day. The emission factor is calculated as the product of emission rates and vehicle population, divided by the daily trips. C: unit conversion factor.

   E_I: vehicle idling emissions (lb).
   Idling emissions were not calculated for operational on-road mobile sources to be consistent with CRRP-HRA methodology. EF_I: vehicle idling emission factor (g/hr-trip). From EMFAC2011. T_I: idling time C: unit conversion factor.

Table 2
Emissions Calculations Methodology
Saranap Village Mitigated Alternative
Walnut Creek, California
(Continued)

3. E: generator engine emissions
   EF: compression-ignition (diesel) engine emission factor. ARB/USEPA engine PM standard based on engine tier will be used.
   HP: generator horsepower.
   Hr: generator hours. Assume 50 hours of operation annually as a conservative assumption, as required by BAAQMD permitting requirements. The Air Toxics Control Measure (ACTM) for Stationary Toxic Compression Ignition Engines (Section 93115, Title 17, California Code of Regulations (CCR) limits maintenance and testing for non-emergency use to 50 hours for engines that emit less than 0.15 grams per break horsepower-hour (g/bhp/hr).

Abbreviations:
ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
CalEEMod: CALifornia Emissions Estimator MODel
EF: Emission Factor
EP: Environmental Planning
g: gram
HP: Horsepower
lb: pound
LF: Load Factor
mi: mile
USEPA: United States Environmental Protection Agency

References:
ARB/USEPA. Table 1: ARB and USEPA Off-Road Compression-Ignition (Diesel) Engine Standards. http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
ARB. 2011b. Off-Road Diesel Equipment 2011 Inventory Model (OFFROAD2011). Available online at: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles.

Table 3
Construction Equipment List[1]
Saranap Village Mitigated Alternative
Walnut Creek, California

	Duration (Months)	Notes
Parcel A	21	
Parcels B/B1	18	
Parcel C	11	Overlaps with occupants in Parcels A and B/B1 for 7 months
Street Improvements	6	Overlaps with occupants in Parcels A and B/B1 for 1 month

		Parcel A	Parcels B/B1	Parcel C
Percentage of Total Square Feet		55%	33%	11%
Phase	**Total Construction Days**	**Construction Days**		
Demolition	40	22	13	5
Grading	23	12	8	3
Building Construction	296	164	99	33
Architectural Coating	271	150	90	31
Street Improvements	126	70	42	14

Equipment use will be spread across parcels. The breakdown in use by parcel is calculated based on the percent of square footage in each parcel.

Equipment List[2]

Phase	Equipment	Quantity	Usage Hours per Day	Horsepower	Load Factor	Equipment Usage Days
Demolition	Concrete/Industrial Saws	1	8	81	0.73	40
	Excavators	1	8	268	0.85	40
	Rubber Tired Dozers	2	8	255	0.40	40
Grading	Excavators	1	2	268	0.85	23
	Rubber Tired Dozers	1	3	255	0.40	23
	Water Truck	1	3	300	0.35	23
	Tractors/Loaders/Backhoes	1	3	265	0.70	23
	Skiploader	1	3	95	0.50	23
Building Construction	Cranes	1	2	226	0.29	8
	Forklifts	1	8	89	0.20	296
	Tractors/Loaders/Backhoes	1	7	265	0.70	31
	Skiploader	2	7	95	0.50	31
	Welders	1	8	46	0.45	12
Architectural Coating	Air Compressors	1	5	78	0.48	271
Off Site Street Improvements	Pavers	1	4.5	125	0.42	126
	Paving Equipment	2	4	130	0.36	126
	Rollers	2	4	80	0.38	126
	Skiploader	1	4	95	0.50	126

Hauling Trips

Phase Name	Worker Trip Number (trips/day)	Vendor Trip Number (trips/day)	Hauling Trip Number (total trips)	Worker Trip Length (miles/trip)	Vendor Trip Length (miles/trip)	Hauling Trip Length (miles/trip)
Demolition	15	0	60	12.4	7.3	20
Grading	20	0	5400	12.4	7.3	20
Building Construction	324	48	1400	12.4	7.3	20
Off Site Street Improvements	15	0	35	12.4	7.3	20
Architectural Coating	65	0	50	12.4	7.3	20

Notes:

1. The construction schedule is described in the Saranap Village Mitigated Alternative Overview dated May 31, 2015 provided by Hall Equities Group.
2. Construction equipment information is from a combination of CalEEMod default values, a project study of load factors, and information provided by Hall Equities Group.
3. CalEEMod defaults were used for the trip length values.

Abbreviations:
CalEEMod: CALifornia Emissions Estimator MODel

References:
1. CalEEMod Version 2013.2.2 Available Online at: http://www.caleemod.com
2. Saranap Village Mitigated Alternative Overview (May 31, 2015)

Table 4a
Summary of Construction Criteria Air Pollutant Emissions - All Sources (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

	Construction Emissions			
	ROG	**NOx**	**PM_{10}** (exhaust only)	**$PM_{2.5}$** (exhaust only)
Off-Road Construction Emissions[1] [ton]	0.064	1.1	0.039	0.039
On-Road Construction Emissions[2] [ton]	0.39	2.1	0.028	0.026
Architectural Coating Emissions[2] [ton]	2.8	--	--	--
Paving Emissions[2] [ton]	9.6E-04	--	--	--
Total Construction Emissions [ton]	3.3	3.1	0.068	0.065
Average Daily Emissions[3] [lbs/day]	**7.8**	**7.5**	**0.16**	**0.16**

Notes:
1. Off-Road Construction emissions were calculated using Off-road Tier standards, assuming all Tier 3 emissions.
2. On-Road Construction, Architectural Coating, and Paving emissions were calculated in CalEEMod version 2013.2.2.
3. Emissions averaged over the 840 days to represent the construction schedule from August 26, 2016 to December 14, 2018.

Abbreviations:
CalEEMod: California Emissions Estimator Model
lbs: pounds
NO_x: Nitrogen Oxides
PM: Particulate Matter
ROG: Reactive Organic Gases
ton: short ton

Reference:
CalEEMod Version 2013.2.2 Available online at: http://www.caleemod.com
Tier standards available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
BAAQMD Average Daily Thresholds from BAAQMD CEQA Guidelines, May 2011

Table 4b
Summary of Construction Criteria Air Pollutant Emissions - All Sources (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

	Construction Emissions			
	ROG	**NOx**	**PM_{10}** (exhaust only)	**$PM_{2.5}$** (exhaust only)
Off-Road Construction Emissions[1] [ton]	0.040	1.1	0.023	0.023
On-Road Construction Emissions[2] [ton]	0.39	2.1	0.028	0.026
Architectural Coating Emissions[2] [ton]	2.8	--	--	--
Paving Emissions[2] [ton]	9.6E-04	--	--	--
Total Construction Emissions [ton]	3.2	3.1	0.052	0.049
Average Daily Emissions[3] [lbs/day]	**7.7**	**7.5**	**0.12**	**0.12**

Notes:
1. Off-Road Construction emissions were calculated using OFFROAD2011, assuming all Tier 3 emissions.
2. On-Road Construction, Architectural Coating, and Paving emissions were calculated in CalEEMod version 2013.2.2.
3. Emissions averaged over the 840 days to represent the construction schedule from August 26, 2016 to December 14, 2018.

Abbreviations:
CalEEMod: California Emissions Estimator Model
lbs: pounds
NO_x: Nitrogen Oxides
PM: Particulate Matter
ROG: Reactive Organic Gases
ton: short ton

Reference:
CalEEMod Version 2013.2.2 Available online at: http://www.caleemod.com
Tier standards available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
BAAQMD Average Daily Thresholds from BAAQMD CEQA Guidelines, May 2011

Table 5
Summary of Operational Criteria Air Pollutant Emissions - Emergency Engines
Saranap Village Mitigated Alternative
Walnut Creek, California

Generators	Size (kW)	Fuel Type	Operation[1] (hrs/yr)	Maximum Fuel Flow[2] (m^3/hr)	Emission Factors[3] (g/HP-hr)				Emission Factors[4] (lb/MMBtu)	Emission Rate (tpy)			
					NMHC	NMHC + NO_x	NO_x	CO	PM	NMHC	NO_x	CO	PM
Site A	100	NG	50	39.9	1.00	--	2.0	4.0	1.94E-02	0.007	0.015	0.030	6.97E-04
Site B/B1	100	NG	50	39.9	1.00	--	2.0	4.0	1.94E-02	0.007	0.015	0.030	6.97E-04
Site C	80	NG	50	39.9	--	10.00	--	387	1.94E-02	0.003	0.059	1.7	6.97E-04
									Total	**0.018**	**0.089**	**1.8**	**2.1E-03**

Notes:

1. Non-emergency operation of all generators conservatively assumed to be 50 hours per year, the maximum allowable.
2. The maximum fuel flow was determined by product specification sheets for 100 HP natural gas generators. The maximum value was chosen from five randomly chosen specification sheets. The values for the 80 HP engine at Site C are conservatively assumed to be equal to the 100 HP engines. Natural gas is assumed to have an energy density of 1020 Btu/ft^3 as per AP-42 (1995).
3. Emission factors are conservatively based on emission standards for natural gas emergency generators according to 40 CFR Part 60, Subpart JJJJ of the NSPS.
4. AP-42 (1995) emission factors for 4-stroke natural gas-fired reciprocating engines are used (maximum of lean-burn and rich-burn), available at http://www.epa.gov/ttnchie1/ap42/ch03/final/c03s02.pdf

Table 5
Summary of Operational Criteria Air Pollutant Emissions - Emergency Engines
Saranap Village Mitigated Alternative
Walnut Creek, California

(Continued)

Abbreviations:

AP-42: Air Pollution Emission Factors
CARB: California Air Resources Board
CO: carbon monoxide
g: gram
HP: horsepower
hr: hour
kW: kilowatt
m^3: cubic meters
MMBTU: Million British Thermal Units
NG: natural gas
NMHC: non-methane hydrocarbons
NO_x: nitrogen oxides
NSPS: New Source Performance Standards.
PM: particulate matter
tpy: tons per year
USEPA: U. S. Environmental Protection Agency
yr: year

References:

AP-42, 1995. Compilation of Air Pollutant Emission Factors, Fifth edition. http://www.epa.gov/ttnchie1/ap42/

CARB. 2004. *Policy: CARB Emission Factors for CI Diesel Engines - Percent HC in Relation to NMHC + NOx.*

CARB. 2012. Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-regulation.htm

eCFR. (Table 1 in on-line documentation available at http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=5cad118045b921585dbef4079dc88e3a&r=SUBPART&n=40y7.0.1.1.1.98#40:7.0.1.1.1.98.266.20.64). The combined emission factor for NMHC+NOx is used as an emission factor for NMHC and NOx assuming a conservative breakdown of 5% and 100%, respectively (guidance from CARB, 2004 suggests 5% and 95%, respectively).

Table 6
Summary of Operational Criteria Air Pollutant Emissions - Traffic
Saranap Village Mitigated Alternative
Walnut Creek, California

Description[1]	Pollutant	Trips and VMT		Emissions	
		Average Daily Trips[1] (one-way trips)	Annual VMT[2] (vehicle-miles)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
Project Traffic	ROG	4,858	4,462,479	12.2	2.2
	NO_x			16.2	3.0
	PM_{10}			9.3	1.7
	$PM_{2.5}$			2.6	0.47

Notes:
1. Number of vehicle trips provided by Omni-Means. Saranap Mitigated Alternative TIA, July 1, 2015.
2. The VMT data in this table is based on the following percentage breakdown by trip type for residential and commercial land uses. Percentage of trips varies for commercial land uses by land use type. The commercial trip lengths for consumers and employees of the proposed project were adjusted based on analysis provided by Economic and Planning Systems, Inc.
   Home -- work: Default 12.4 miles (26.1% of trips)
   Home -- shop: Default 4.3 miles (29.1% of trips)
   Home -- other: Default 5.4 miles (44.8% of trips)
   Commercial -- customer: 1.38 miles (Average 72.7% of trips), from Economic and Planning Systems, Inc.
   Commercial -- worker: Default 9.5 miles (Average 8.3% of trips)
   Commercial -- non-worker: Default 7.3 miles (19% of trips)
3. Emissions were estimated using CalEEMod 2013.2.2

Abbreviations:
CalEEMod: California Emissions Estimator MODel
lb: pound
NO_x: oxides of nitrogen
PM: Particulate Matter
ROG: reactive organic compounds
tpy: tons per year
VMT: vehicle miles traveled

Reference:
CalEEMod Version 2013.2.2. Appendix A. Available Online at: http://www.caleemod.com.
Economic and Planning Systems, Inc. March 2014.
Omni-Means., Traffic Impact Analysis for the Proposed Saranap Village Project. Table 2a Revised. June 17, 2015.
ITE. 2008. Trip Generation 8th Edition. In September 2012, ITE published the 9th edition that updated some of the trip rates from the 8th edition. The updates are not yet incorporated into CalEEMod but the user has the ability to override the trip rate default.

Table 7
Modeling Parameters for Construction Plan
Saranap Village Mitigated Alternative
Walnut Creek, California

Area	Source Type[1]	Spacing (m)	Number of Sources	Release Height[2] (m)	Initial Vertical Dimension[3] (m)	Initial Lateral Dimension[3] (m)
Parcel A	Volume	5m x 5m	265	5	1.4	2.3
Parcel B	Volume	5m x 5m	243	5	1.4	2.3
Parcel C	Volume	5m x 5m	80	5	1.4	2.3
Street Improvements	Volume	5m x 5m	283	5	1.4	2.3

Notes:
1. Due to lack of specific instructions on modeling of construction emissions from BAAQMD, ENVIRON used methodology from the CRRP-HRA (BAAQMD 2012) when setting up the model. According to the CRRP-HRA methodology, construction sources were modeled as volume sources.
2. According to the CRRP-HRA methodology, release height of the modeled volume sources representing construction equipment was set to 5 meters.
3. According to USEPA ISC3 User's Guide Volume II, initial lateral dimension of adjacent volume sources is length of side divided by 2.15.

Abbreviations:
BAAQMD: Bay Area Air Quality Management District
g: gram
ISC: Industrial Source Complex Model
m: meter
SCAQMD: South Coast Air Quality Management District
STI: Sonoma Technology, Inc.
USEPA: United States Environmental Protection Agency

References:
BAAQMD. 2012. *The San Francisco Community Risk Reduction Plan: Technical Support Documentation, V9.*
SCAQMD. 2008. *Final Localized Significance Threshold (LST) Methodology*. July. Available at http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf
STI. 2011. *Default modeling parameters for stationary sources*. April. Provided by San Francisco Department of Planning, Environmental Planning.
USEPA. 1995. User's Guide for the Industrial Source Complex (ISC3) Dispersion Models. Volume II - Description of Model Algorithms. September. Available at http://www.epa.gov/scram001/userg/regmod/isc3v2.pdf

Table 8a
Construction Emissions for HRA Modeling (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Project Phase	Receptor Location[1]	Annual DPM Emissions from Construction[2,3,4] (g/s)	Annual $PM_{2.5}$ Emissions from Construction[2,4] (g/s)
Parcel A	Offsite	6.01E-04	6.01E-04
Parcels B/B1	Offsite	4.23E-04	4.23E-04
Parcel C	Offsite	2.26E-04	2.26E-04
Street Improvements	Offsite	7.92E-04	7.92E-04
Parcel C	Parcels A & B/B1	1.23E-04	1.23E-04
Street Improvements	Parcels A & B/B1	1.32E-04	1.32E-04

Notes:
1. Offsite receptors are assumed to be exposed to all construction emissions from each parcel. Construction on Parcel C is scheduled to overlap with new residents on Parcels A and B/B1 for 7 months. Thus, these new residents are assumed to be exposed to only building construction and architectural coating emissions. Construction for street improvements is scheduled to overlap with the new residents for one month. Thus, these residents are assumed to be only exposed to 1/6 of the total street improvement emissions.
2. Emission rate is calculated by taking total emissions, dividing by the duration, and converting to g/s. To be consistent with the air dispersion model, these rates assume 10 hours/day of operation. Construction on Parcel A is assumed to occur for 1.75 years and Parcel B is 1.5 years. Parcel C and Street improvements are scheduled to occur for less than one year, so to be consistent with the annual average dispersion factors, a one year duration was used to calculate the emission rate.
3. DPM emissions of off-road equipment are assumed equivalent to the PM_{10} emissions.
4. Emissions include exhaust emissions for off-road construction equipment. On-road emissions associated with construction trips such as hauling, vendor, and worker trips are assumed to be negligible and are not included.

Abbreviation:
DPM: Diesel Particulate Matter
g: gram
HRA: Health Risk Assessment
PM: Particulate Matter

Table 8b
Construction Emissions for HRA Modeling (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Project Phase	Receptor Location[1]	Annual DPM Emissions from Construction[2,3,4,5] (g/s)	Annual $PM_{2.5}$ Emissions from Construction[2,4,5] (g/s)
Parcel A	Offsite	3.18E-04	3.18E-04
Parcels B/B1	Offsite	2.25E-04	2.25E-04
Parcel C	Offsite	1.22E-04	1.22E-04
Street Improvements	Offsite	5.85E-04	5.85E-04
Parcel C	Parcels A & B/B1	5.08E-05	5.08E-05
Street Improvements	Parcels A & B/B1	9.75E-05	9.75E-05

Notes:
1. Offsite receptors are assumed to be exposed to all construction emissions from each parcel. Construction on Parcel C is scheduled to overlap with new residents on Parcels A and B/B1 for 7 months. Thus, these new residents are assumed to be exposed to only building construction and architectural coating emissions. Construction for street improvements is scheduled to overlap with the new residents for one month. Thus, these residents are assumed to be only exposed to 1/6 of the total street improvement emissions.
2. Emission rate is calculated by taking total emissions, dividing by construction period, and converting to g/s. To be consistent with the air dispersion model, these rates assume 10 hours/day of operation.
3. DPM emissions of off-road equipment are assumed equivalent to the PM_{10} emissions.
4. Emissions include exhaust emissions for off-road construction equipment. On-road emissions associated with construction trips such as hauling, vendor, and worker trips are assumed to be negligible and are not included.
5. Assumes Level 3 diesel particulate filters, that reduce PM emissions by 85%, are used on some pieces of construction equipment. Information on DPF can be found online at http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Abbreviation:
DPM: Diesel Particulate Matter
g: gram
HRA: Health Risk Assessment
PM: Particulate Matter
s: second
DPF: Diesel Particulate Filter

Table 9
Exposure Parameters for Construction
Saranap Village Mitigated Alternative
Walnut Creek, California

Exposure Parameter	Units	Off-site Resident Child				Parcel A and B On-site Resident Child	
		Parcel A Construction	Parcel B Construction	Parcel C Construction	Street Improvements	Parcel C Construction	Street Improvements
Daily Breathing Rate (DBR) [1]	(L/kg-day)	1090	1090	1090	1090	1090	1090
Fraction at Home (FAH)[2]	Unitless	1	1	1	1	1	1
Exposure Frequency (EF) [3]	(days/year)	350	350	350	350	350	350
Exposure Duration (ED) [4]	(years)	1.8	1.5	1.0	1.0	1.0	1.0
Averaging Time (AT)	(days)	25550	25550	25550	25550	25550	25550
Intake Factor, Inhalation (IF_{inh})	(m^3/kg-day)	0.026	0.022	0.015	0.0149	0.0149	0.0149

Equation used:

IF_{inh} = DBR * FAH * EF * ED * CF / AT

CF: 0.001 (m^3/L)

Notes:

1. Daily breathing rate reflects default breathing rate for child residents age 0-2 years from OEHHA 2015. Although exposures could occur for residents from other age groups, the 0-<2 year age group exposure parameters were used to be conservative.
2. Conservatively assumed a resident child is at home 24 hours a day.
3. Exposure frequency reflects default exposure frequency for residents from OEHHA 2015.
4. Construction exposure durations greater than one year reflect the actual project construction schedule by parcel. For construction activities that last less than one year, the exposure durations were set to one year to align with annualized emissions and dispersion factors. Actual construction durations and additional information are discussed in Section 2.1.

Abbreviations:

OEHHA: Office of Environmental Health Hazard Assessment
kg: kilogram
L: liter
m^3: cubic meters

Reference:

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.

Table 10
Toxicity Values
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	Chemical	Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	Chronic Reference Exposure Level $(\mu g/m^3)$
Construction	Diesel PM	1.1	5

Note:
All toxicity values from Cal/EPA (2015).

Abbreviations:
(mg/kg-day)-1: per milligram per kilogram-day
µg/m3: micrograms per cubic meter
ARB: Air Resources Board
Cal/EPA: California Environmental Protection Agency
OEHHA: Office of Environmental Health Hazard Assessment
PM: Particulate Matter

Reference:
California Environmental Protection Agency (Cal/EPA). 2015. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. May.
http://www.arb.ca.gov/toxics/healthval/contable.pdf

Table 11
Age Sensitivity Factors for Construction
Saranap Village Mitigated Alternative
Walnut Creek, California

Receptor	Phase	Age Sensitivity Factor (ASF)[1]
Resident Child[2]	All Construction Phases [3]	10

Notes:

1. Based on OEHHA 2015.

2. A resident child is conservatively assumed to be exposed between ages 0-<2 years which is the age group with the most conservative exposure assumptions and ASF, even when the entire construction period extends beyond 2 years in duration, and exposures could occur for residents from other age groups.

3. Street improvements occur within the timeframe of the proposed project construction period; therefore, the ASF applies to both project construction (all phases) and street improvements.

Abbreviation:

OEHHA: Office of Environmental Health Hazard Assessment

Reference:

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments.

Table 12a
Summary of Construction Criteria Air Pollutant Emissions - All Sources (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

	Construction Emissions			
	ROG	**NOx**	**PM_{10}** (exhaust only)	**$PM_{2.5}$** (exhaust only)
Off-Road Construction Emissions[1] [ton]	0.06	1.1	0.039	0.039
On-Road Construction Emissions[2] [ton]	0.39	2.1	0.028	0.026
Architectural Coating Emissions[2] [ton]	2.8	--	--	--
Paving Emissions[2] [ton]	9.6E-04	--	--	--
Total Construction Emissions [ton]	3.3	3.1	0.068	0.065
Average Daily Emissions[3] [lbs/day]	**7.8**	**7.5**	**0.16**	**0.16**
BAAQMD Average Daily Threshold [lbs/day]	54	54	82	54
Exceeds daily thresholds? [Y/N]	N	N	N	N

Notes:
1. Off-Road Construction emissions were calculated using Off-road Tier standards, assuming all Tier 3 emissions.
2. On-Road Construction, Architectural Coating, and Paving emissions were calculated in CalEEMod version 2013.2.2.
3. Emissions averaged over the 840 days to represent the construction schedule from August 26, 2016 to December 14, 2018.

Abbreviations:
CalEEMod: California Emissions Estimator Model
lbs: pounds
NO_x: Nitrogen Oxides
PM: Particulate Matter
ROG: Reactive Organic Gases
ton: short ton

Reference:
CalEEMod Version 2013.2.2 Available online at: http://www.caleemod.com
Tier standards available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
BAAQMD Average Daily Thresholds from BAAQMD CEQA Guidelines, May 2011

Table 12b
Summary of Construction Criteria Air Pollutant Emissions - All Sources (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

	Construction Emissions			
	ROG	**NOx**	**PM_{10}** (exhaust only)	**$PM_{2.5}$** (exhaust only)
Off-Road Construction Emissions[1] [ton]	0.040	1.1	0.023	0.023
On-Road Construction Emissions[2] [ton]	0.39	2.1	0.028	0.026
Architectural Coating Emissions[2] [ton]	2.8	--	--	--
Paving Emissions[2] [ton]	9.6E-04	--	--	--
Total Construction Emissions [ton]	3.2	3.1	0.052	0.049
Average Daily Emissions[3] [lbs/day]	**7.7**	**7.5**	**0.12**	**0.12**
BAAQMD Average Daily Threshold [lbs/day]	54	54	82	54
Exceeds daily thresholds? [Y/N]	N	N	N	N

Notes:
1. Off-Road Construction emissions were calculated using Off-road Tier standards, assuming all Tier 3 emissions.
2. On-Road Construction, Architectural Coating, and Paving emissions were calculated in CalEEMod version 2013.2.2.
3. Emissions averaged over the 840 days to represent the construction schedule from August 26, 2016 to December 14, 2018.

Abbreviations:
CalEEMod: California Emissions Estimator Model
lbs: pounds
NO_x: Nitrogen Oxides
PM: Particulate Matter
ROG: Reactive Organic Gases
ton: short ton

Reference:
CalEEMod Version 2013.2.2 Available online at: http://www.caleemod.com
Tier standards available online at: http://www.arb.ca.gov/msprog/ordiesel/documents/Off-Road_Diesel_Stds.xls
BAAQMD Average Daily Thresholds from BAAQMD CEQA Guidelines, May 2011

Table 13
Summary of Operational Criteria Air Pollutant Emissions - All Sources
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	Average Daily Emissions (lb/day)				Maximum Annual Emissions (tpy)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area[1]	12	0.10	0.10	0.10	2.2	0.018	0.018	0.018
Energy[1]	0.092	0.81	0.064	0.064	0.017	0.15	0.012	0.012
Mobile[1,2]	12	16	9.3	2.6	2.2	3.0	1.7	0.47
Generators[3]	0.10	0.49	0.011	0.011	1.8E-02	8.9E-02	2.1E-03	2.1E-03
Total	**25**	**18**	**9.4**	**2.8**	**4.5**	**3.2**	**1.7**	**0.51**
Operational Threshold	54	54	82	54	10	10	15	10
Above Threshold?	No	No	No	No	No	No	No	No

Notes:
1. Emissions estimated using CalEEMod version 2013.2.2
2. See Table 6 for detailed calculations.
3. See Table 5 for detailed calculations, $PM_{2.5}$ conservatively assumed to be equal to PM_{10}. Lb/day calculation based on assumption of generator operation 365 days/year.

Abbreviation:
CalEEMod: California Emissions Estimator Model
lb: pound
NO_x: nitrogen oxide compounds ($NO + NO_2$)
PM = particulate matter
ROG: reactive organic gas
tpy: tons per year

Reference:
CalEEMod Version 2013.2.2 Available Online at: http://www.caleemod.com

Table 14a
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	UTMx (m)	UTMy (m)	Parcel A	Parcels B/B1	Parcel C	Street Improvements	Total[3]	BAAQMD Individual Source Significance Threshold	Exceeds Threshold? [Y/N]
Lifetime Excess Cancer Risk[1] (in a million)	581140	4194500	12	1.1	0.17	1.7	15	**10**	**Yes**
Chronic HI[2]	581100	4194320	0.001	0.004	0.004	0.004	0.01	**1**	**No**
$PM_{2.5}$ Concentration ($\mu g/m^3$)	581180	4194400	0.019	0.028	0.001	0.05	0.1	**0.3**	**No**

Equations used:

$Risk_{inh} = \Sigma Risk_{inh,i} = \Sigma C_i \times MAF \times CF \times IF_{inh} \times CPF_i \times ASF$

Where:

$Risk_{inh}$: Cancer Risk, as a result of inhalation exposure to Project emissions (unitless)
$Risk_{inh,i}$: Cancer Risk for Chemical i
C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)
MAF : Modeling Adjustment Factor
CF: Conversion Factor (mg/µg)
IF_{inh}: Intake Factor for Inhalation (m^3/kg-day)
CPF_i: Cancer Potency Factor for Chemical i (mg chemical/kg body weight-day)
ASF: Age Sensitivity Factor

$Chronic\ HI_{inh} = \Sigma Chronic\ HQ_{inh,i} = \Sigma C_i/cREL_i$

Where:

Chronic HI_{inh}: Chronic hazard index, as a result of inhalation exposure to Project emissions (unitless)
Chronic $HQ_{inh,i}$: Chronic hazard quotient for Chemical i
C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)
$cREL_i$: Chronic reference exposure level for chemical i ($\mu g/m^3$)

Table 14a
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California
(Continued)

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risks attributed to the uncontrolled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average air concentrations, the intake factors for resident children presented in Table 9, the CPF presented in Table 10, and the ASF for a resident child presented in Table 11. These risks correspond to umitigated construction emissions and are not necessarily reflective of actual construction impacts.

2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the noncancer chronic REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index. The chronic hazard indices attributed to the uncontrolled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average DPM concentration presented in Table 4 and the chronic REL presented in Table 10.

3. The results presented are the results at the location of the maximum combined total impact due to uncontrolled project construction and street improvements. The maximum result for project construction or street improvements individually may be at a different location. The results for cancer risk and chronic HI represent the MEISR; the results for $PM_{2.5}$ represent the point of maximum impact (PMI).

Abbreviations:

m: meter
$\mu g/m^3$: micrograms per cubic meter
MEISR = Maximally exposed individual sensitive receptor
$PM_{2.5}$: Particulate matter 2.5 microns or less
PMI = Point of maximum impact
UTM: Universal Transverse Mercator

Table 14b
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	UTMx (m)	UTMy (m)	Parcel A	Parcels B/B1	Parcel C	Street Improvements	Total[3]	BAAQMD Individual Source Significance Threshold	Exceeds Threshold? [Y/N]
Lifetime Excess Cancer Risk[1] (in a million)	581080	4194380	2.1	0.76	0.54	4.9	8	**10**	**No**
Chronic HI[2]	581080	4194380	1.5E-03	6.2E-04	6.6E-04	6.0E-03	0.009	**1**	**No**
$PM_{2.5}$ Concentration ($\mu g/m^3$)	581180	4194400	0.010	0.015	7.03E-04	0.036	0.06	**0.3**	**No**

Equations used:

$Risk_{inh} = \Sigma Risk_{inh,i} = \Sigma C_i \times MAF \times CF \times IF_{inh} \times CPF_i \times ASF$

Where:

$Risk_{inh}$: Cancer Risk, as a result of inhalation exposure to Project emissions (unitless)
$Risk_{inh,i}$: Cancer Risk for Chemical i
C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)
MAF : Modeling Adjustment Factor
CF: Conversion Factor (mg/µg)
IF_{inh}: Intake Factor for Inhalation (m^3/kg-day)
CPF_i: Cancer Potency Factor for Chemical i (mg chemical/kg body weight-day)
ASF: Age Sensitivity Factor

$Chronic\ HI_{inh} = \Sigma Chronic\ HQ_{inh,i} = \Sigma C_i/cREL_i$

Where:

$Chronic\ HI_{inh}$: Chronic hazard index, as a result of inhalation exposure to Project emissions (unitless)
$Chronic\ HQ_{inh,i}$: Chronic hazard quotient for Chemical i
C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)
$cREL_i$: Chronic reference exposure level for chemical i ($\mu g/m^3$)

Table 14b
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California
(Continued)

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risks attributed to the controlled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average air concentrations, the intake factors for resident children presented in Table 9, the CPF presented in Table 10, and the ASF for a resident child presented in Table 11.

2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the noncancer chronic REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index. The chronic hazard indices attributed to the controlled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average DPM concentration presented in Table 4 and the chronic REL presented in Table 10.

3. The results presented are the results at the location of the maximum combined total impact due to controlled project construction and street improvements. The maximum result for project construction or street improvements individually may be at a different location. The results for cancer risk and chronic HI represent the MEISR which is at a different location from the MEISR for the uncontrolled scenario; the results for $PM_{2.5}$ represent the point of maximum impact (PMI).

Abbreviations:
m: meter
$\mu g/m^3$: micrograms per cubic meter
MEISR = Maximally exposed individual sensitive receptor
$PM_{2.5}$: Particulate matter 2.5 microns or less
PMI = Point of maximum impact
UTM: Universal Transverse Mercator

Table 14c
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - On-Site MEISR
(Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	UTMx (m)	UTMy (m)	Parcel C	Street Improvements	Total[3]	BAAQMD Individual Source Significance Threshold	Exceeds Threshold? [Y/N]
Lifetime Excess Cancer Risk[1] (in a million)	581091	4194330	2.3	0.95	3	**10**	**No**
Chronic HI[2]	581091	4194330	2.8E-03	1.2E-03	0.004	**1**	**No**
$PM_{2.5}$ Concentration ($\mu g/m^3$)	581091	4194330	1.39E-02	0.006	0.02	**0.3**	**No**

Equations used:

$Risk_{inh} = \Sigma Risk_{inh,i} = \Sigma C_i \times MAF \times CF \times IF_{inh} \times CPF_i \times ASF$

Where:

$Risk_{inh}$: Cancer Risk, as a result of inhalation exposure to Project emissions (unitless)

$Risk_{inh,i}$: Cancer Risk for Chemical i

C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)

MAF : Modeling Adjustment Factor

CF: Conversion Factor (mg/µg)

IF_{inh}: Intake Factor for Inhalation (m^3/kg-day)

CPF_i: Cancer Potency Factor for Chemical i (mg chemical/kg body weight-day)

ASF: Age Sensitivity Factor

Chronic $HI_{inh} = \Sigma$Chronic $HQ_{inh,i} = \Sigma C_i/cREL_i$

Where:

Chronic HI_{inh}: Chronic hazard index, as a result of inhalation exposure to Project emissions (unitless)

Chronic $HQ_{inh,i}$: Chronic hazard quotient for Chemical i

C_i: Modeled Annual Average Concentration in air for Chemical i ($\mu g/m^3$)

$cREL_i$: Chronic reference exposure level for chemical i ($\mu g/m^3$)

Table 14c
Modeled Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - On-Site MEISR
(Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California
(Continued)

Notes:

1. Excess lifetime cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens. The estimated risk is expressed as a unitless probability. The cancer risks attributed to the controlled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average air concentrations, the intake factors for resident children presented in Table 9, the CPF presented in Table 10, and the ASF for a resident child presented in Table 11.

2. The potential for exposure to result in adverse chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the noncancer chronic REL for each chemical. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. To evaluate the potential for adverse chronic noncancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index. The chronic hazard indices attributed to the controlled emissions associated with construction of the Project and street improvements were calculated based on the modeled annual average DPM concentration presented in Table 4 and the chronic REL presented in Table 10.

3. The results presented are the results at the location of the maximum combined total impact due to uncontrolled project construction and street improvements. The maximum result for project construction or street improvements individually may be at a different location. The results for cancer risk and chronic HI represent the MEISR; the results for $PM_{2.5}$ represent the point of maximum impact (PMI).

Abbreviations:
m: meter
$\mu g/m^3$: micrograms per cubic meter
MEISR = Maximally exposed individual sensitive receptor
$PM_{2.5}$: Particulate matter 2.5 microns or less
PMI = Point of maximum impact
UTM: Universal Transverse Mercator

Table 15
Stationary Off-Site Sources
Saranap Village Mitigated Alternative
Walnut Creek, California

Facility Name	Street Address	Cancer Risk (in a million)	Chronic Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Hull's Walnut Creek Chapel	1139 Saranap Avenue	0.4	0.008	0.001

Notes:
1. Hull's Walnut Creek Chapel is the only stationary source within the Project's zone of influence according to the BAAQMD screening tool for stationary sources. The impacts in the screening tool were refined using emissions provided by BAAQMD and SCREEN3 modeling, as shown in Appendix C.

Abbreviations:
$\mu g/m^3$: microgram per cubic meter
BAAQMD: Bay Area Air Quality Management District
$PM_{2.5}$: Particulate matter 2.5 microns or less

Reference:
BAAQMD. 2012. Stationary Source Screening Analysis Tool. Available online at: http://baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Table 16
Traffic Off-Site Sources
Saranap Village Mitigated Alternative
Walnut Creek, California

Roadway Type	Roadway	Interpolated Lifetime Excess Cancer Risk[2] (in a million)	Interpolated Chronic Hazard Index[2]	Interpolated $PM_{2.5}$ Concentration[2] ($\mu g/m^3$)
Surface Street[1]	Boulevard Way	7.4	--	0.12
Highway Ramp[2]	EB 24 Off-Ramp	0.43	0.0004	0.010
	EB 24 to SB 680	1.6	0.0015	0.039
	WB 24 On-Ramp	0.32	0.0003	0.007
	WB 24 from NB 680	0.63	0.0006	0.015
Highway[2]	Highway 24	8.6	0.0079	0.20
Total		**19**	**0.01**	**0.4**

Notes:
1. Screening values for surface streets were obtained from BAAQMD Roadway Screening Calculator (BAAQMD 2015) and scaled by intake factors to account for the new OEHHA guidance. The traffic volume of Boulevard Way found from the CEHTB database is 10,100 vehicles per day. The impacts shown are for an east-west roadway, 10 feet north of the roadway. The risk is multiplied by the intake factor based on 2015 guidance (0.804) and divided by the intake factor based on the 2003 guidance (0.492).
2. Impacts from the highway ramps and Highway 24 were estimated using CAL3QHCR, as described in the report.

Abbreviations:
-- = Not available
$\mu g/m^3$: microgram per cubic meter
$PM_{2.5}$: Particulate matter 2.5 microns or less
ADT: Average daily traffic
ARB: California Air Resources Board
BAAQMD: Bay Area Air Quality Management District
EB: East-bound
NB: North-bound
SB: South-bound
WB: West-bound

References:
BAAQMD. 2015. Roadway Screening Calculator. Available at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

BAAQMD. 2012.CEQA Air Quality Guidelines. May.

Table 17a
Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	Risks or Hazards		
	Cancer Risk (in a million)	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Uncontrolled Construction[1]	15	0.01	0.1
Off-site Stationary Sources[2]	0.4	0.008	0.001
Off-site Traffic[3]	19	0.01	0.4
Cumulative Total	**34**	**0.03**	**0.5**
BAAQMD Cumulative Threshold	**100**	**10**	**0.8**
Exceeds BAAQMD Threshold? [Y/N]	**N**	**N**	**N**

Notes:
1. Total of project construction and street improvements as presented in Table 14a.
2. As presented in Table 15.
3. Total as presented in Table 16. Note modeled impacts from Highway 24 are specifically listed in Table 16.

Abbreviations:
$\mu g/m^3$: microgram per cubic meter

Table 17b
Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - Off-Site MEISR (Controlled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	Risks or Hazards		
	Cancer Risk (in a million)	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Controlled Construction[1]	8	0.009	0.06
Off-site Stationary Sources[2]	0.4	0.008	0.001
Off-site Traffic[3]	19	0.01	0.4
Cumulative Total	**28**	**0.03**	**0.5**
BAAQMD Cumulative Threshold	**100**	**10**	**0.8**
Exceeds BAAQMD Threshold? [Y/N]	**N**	**N**	**N**

Notes:
1. Total of project construction and street improvements as presented in Table 14b.
2. As presented in Table 15.
3. Total as presented in Table 16. Note modeled impacts from Highway 24 are specifically listed in Table 16.

Abbreviations:
$\mu g/m^3$: microgram per cubic meter

Table 17c
Cumulative Excess Lifetime Cancer Risk, Chronic HI, and $PM_{2.5}$ Concentration - On-Site MEISR (Uncontrolled Scenario)
Saranap Village Mitigated Alternative
Walnut Creek, California

Source	Risks or Hazards		
	Cancer Risk (in a million)	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Uncontrolled Construction[1]	3	0.004	0.02
Off-site Stationary Sources[2]	0.4	0.008	0.001
Off-site Traffic[3]	19	0.01	0.4
Cumulative Total	**23**	**0.02**	**0.4**
BAAQMD Cumulative Threshold	**100**	**10**	**0.8**
Exceeds BAAQMD Threshold? [Y/N]	**N**	**N**	**N**

Notes:
1. Total of project construction and street improvements as presented in Table 14c.
2. As presented in Table 15.
3. Total as presented in Table 16. Note modeled impacts from Highway 24 are specifically listed in Table 16.

Abbreviations:
$\mu g/m^3$: microgram per cubic meter

FIGURES

U:\Hall Saranap\Mitigated Plan\GIS\Figure1 - Property Boundary.mxd

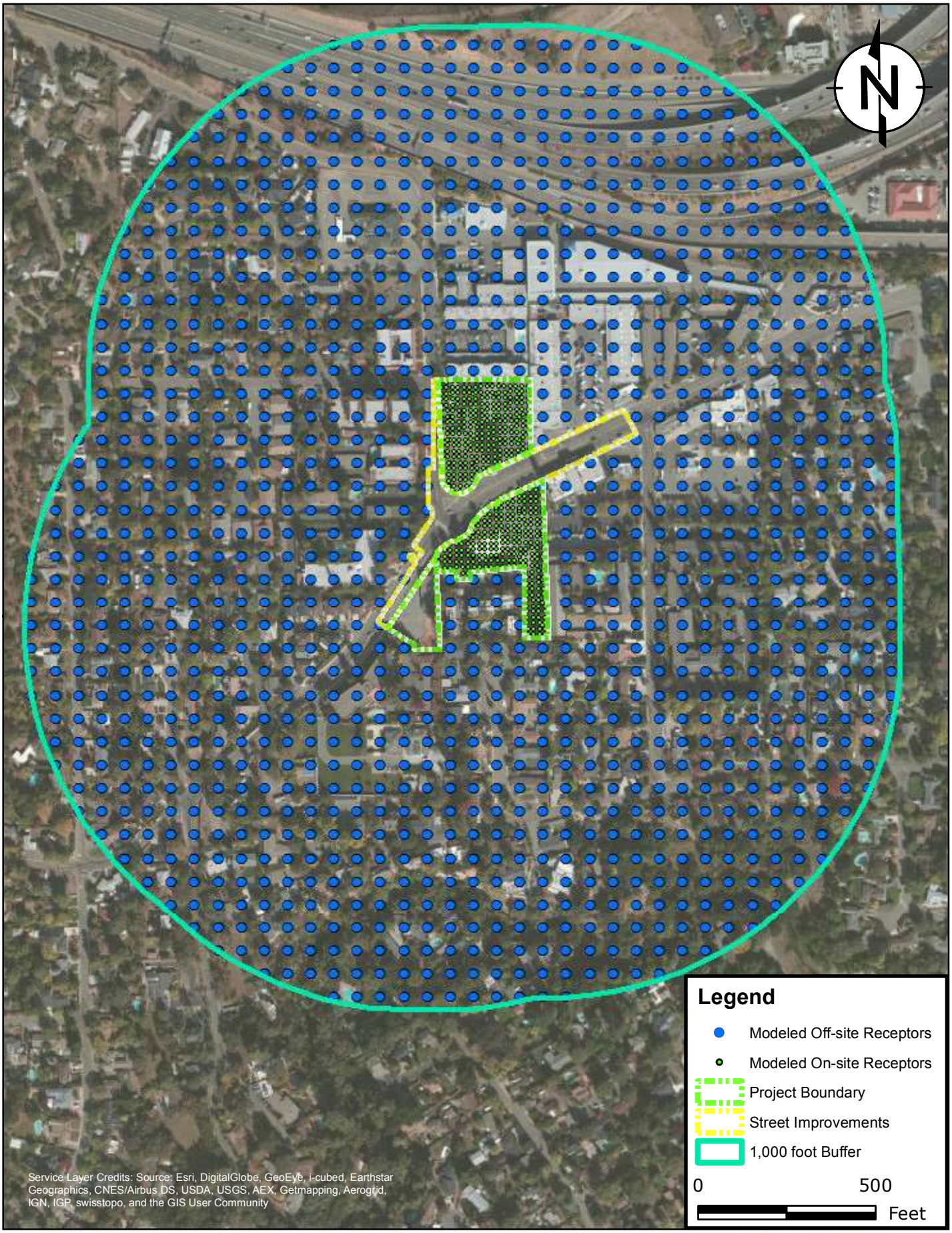
RAMBOLL ENVIRON

DRAFTED BY: SEM | DATE: 6/1/2015

Property Boundary
Saranap Mitigated Plan
Hall Equities Group
Walnut Creek, CA

FIGURE
1

03-34227B



U:\Hall Saranap\Mitigated Plan\GIS\Figure 2 - Modeling Extent.mxd

RAMBOLL ENVIRON

DRAFTED BY: SEM

DATE: 6/1/2015

Modeling Extent

Saranap Mitigated Plan

Hall Equities Group

Walnut Creek, CA

FIGURE

2

03-34227B

U:\Hall Saranap\Mitigated Plan\GIS\Figure 3a - Location of MEISR and PMI.mxd

RAMBOLL ENVIRON

DRAFTED BY: SEM

DATE: 6/1/2015

Location of Off-site MEISR and PMI - Uncontrolled Scenario

Saranap Mitigated Plan

Hall Equities Group

Walnut Creek, CA

FIGURE

3a

03-34227B

U:\Hall Saranap\Mitigated Plan\GIS\Figure 3b - Location of MEISR and PMI.mxd

RAMBOLL ENVIRON

DRAFTED BY: SEM

DATE: 6/1/2015

Location of Off-site MEISR and PMI - Controlled Scenario

Saranap Mitigated Plan

Hall Equities Group

Walnut Creek, CA

FIGURE

3b

03-34227B

U:\Hall Saranap\Mitigated Plan\GIS\Figure 3c - Location of MEISR and PMI.mxd

RAMBOLL ENVIRON

DRAFTED BY: SEM

DATE: 6/1/2015

Location of On-site MEISR and PMI - Uncontrolled Scenario

Saranap Mitigated Plan

Hall Equities Group

Walnut Creek, CA

FIGURE

3c

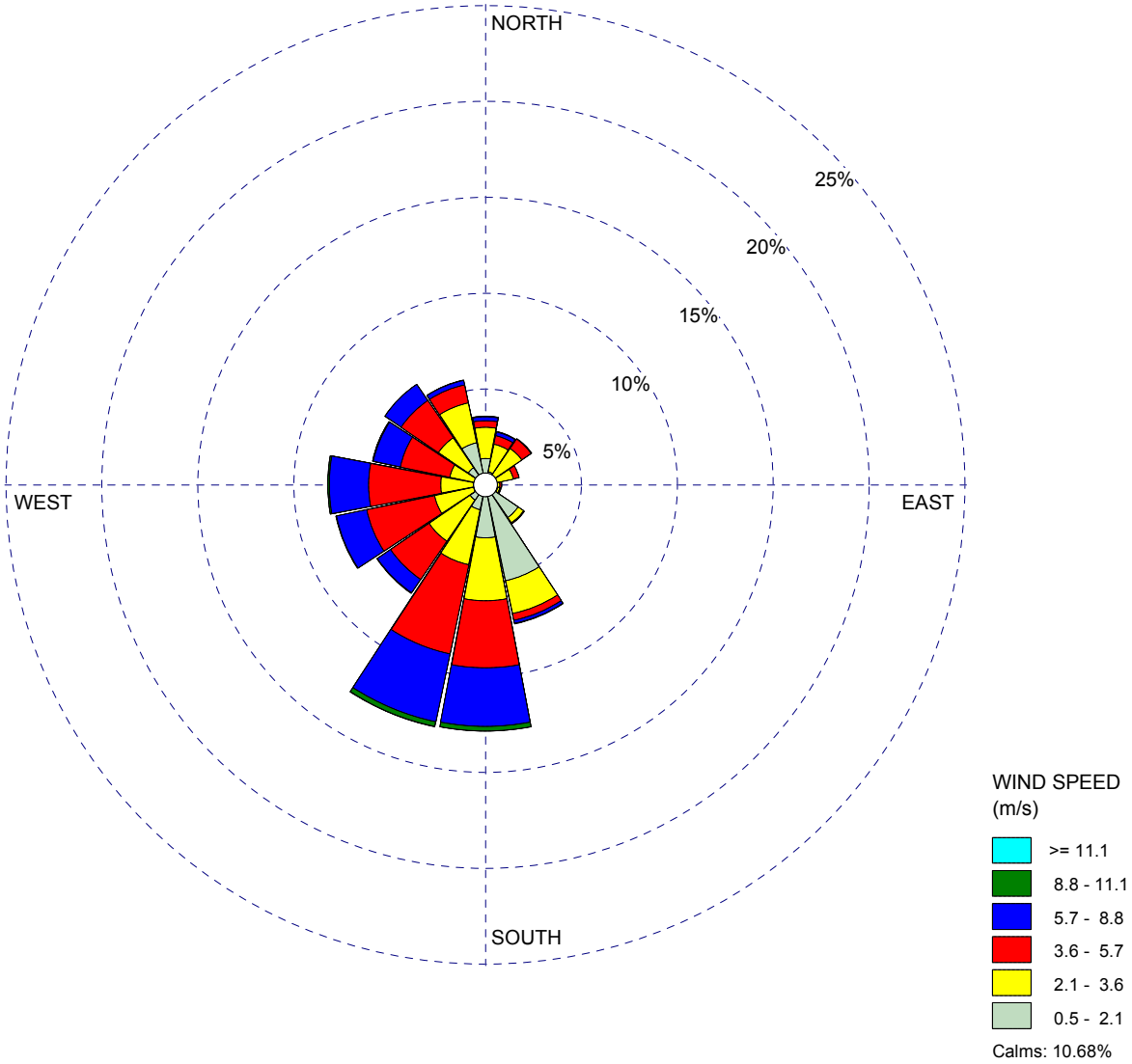
03-34227B

WIND ROSE PLOT:

Hall Saranap Mitigated Alternative - 5 year Wind Rose
2010-2014 Station #23254 - Concord, CA

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2010 - 00:00 **End Date: 12/31/2014 - 23:00**	MODELER:	FIGURE **4**
	CALM WINDS: **10.68%**	TOTAL COUNT: **43427 hrs.**	
	AVG. WIND SPEED: **3.32 m/s**	DATE: **6/24/2015**	PROJECT NO.: **03-34227B**

WRPLOT View - Lakes Environmental Software

APPENDIX A
CALEEMOD® OUTPUT FILES

Saranap Construction - non Offroad Equipment

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	22,261.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Enclosed Parking Structure	471.00	Space	4.24	188,400.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CalEEMod Run for Construction Emissions from non-offroad-equipment. Emissions from Offroad equipment estimated outside of CalEEMod

Land Use - Pseudo land use for construction emissions

Construction Phase - Start and End dates not accurate. Total Days is accurate

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - pseudo equipment

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Consistent with Client provided data

Demolition -

Grading -

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	271.00
tblConstructionPhase	NumDays	300.00	296.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	126.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	5/6/2017	11/11/2016
tblConstructionPhase	PhaseEndDate	11/24/2016	10/22/2016
tblConstructionPhase	PhaseEndDate	3/29/2016	2/2/2016
tblConstructionPhase	PhaseEndDate	4/17/2017	6/24/2016
tblConstructionPhase	PhaseStartDate	6/25/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	2/3/2016	1/1/2016

tblConstructionPhase	PhaseStartDate	2/26/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	10/23/2016	1/1/2016
tblGrading	AcresOfGrading	57.50	46.00
tblGrading	MaterialExported	0.00	2,650.00
tblLandUse	LandUseSquareFeet	0.00	22,261.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	331.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	35.00
tblTripsAndVMT	HaulingTripNumber	223.00	60.00
tblTripsAndVMT	VendorTripNumber	61.00	48.00
tblTripsAndVMT	WorkerTripNumber	48.00	65.00
tblTripsAndVMT	WorkerTripNumber	241.00	324.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0491	9.7992	10.2316	0.0179	0.7525	0.5127	1.2652	0.2146	0.4800	0.6946	0.0000	1,536.4410	1,536.4410	0.2028	0.0000	1,540.6994
Total	**4.0491**	**9.7992**	**10.2316**	**0.0179**	**0.7525**	**0.5127**	**1.2652**	**0.2146**	**0.4800**	**0.6946**	**0.0000**	**1,536.4410**	**1,536.4410**	**0.2028**	**0.0000**	**1,540.6994**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0491	9.7992	10.2316	0.0179	0.7525	0.5127	1.2652	0.2146	0.4800	0.6946	0.0000	1,536.4402	1,536.4402	0.2028	0.0000	1,540.6986
Total	**4.0491**	**9.7992**	**10.2316**	**0.0179**	**0.7525**	**0.5127**	**1.2652**	**0.2146**	**0.4800**	**0.6946**	**0.0000**	**1,536.4402**	**1,536.4402**	**0.2028**	**0.0000**	**1,540.6986**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Energy	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	666.0307	666.0307	0.0277	7.0600e-003	668.8017
Mobile	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Waste						0.0000	0.0000		0.0000	0.0000	18.3017	0.0000	18.3017	1.0816	0.0000	41.0152
Water						0.0000	0.0000		0.0000	0.0000	4.0514	28.2991	32.3504	0.4174	0.0101	44.2437
Total	**3.2200**	**1.8699**	**10.1452**	**0.0160**	**1.0742**	**0.0674**	**1.1416**	**0.2877**	**0.0656**	**0.3533**	**25.5611**	**1,907.8112**	**1,933.3723**	**1.5904**	**0.0174**	**1,972.1709**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Energy	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	666.0307	666.0307	0.0277	7.0600e-003	668.8017
Mobile	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Waste						0.0000	0.0000		0.0000	0.0000	18.3017	0.0000	18.3017	1.0816	0.0000	41.0152
Water						0.0000	0.0000		0.0000	0.0000	4.0514	28.2991	32.3504	0.4173	0.0101	44.2373
Total	**3.2200**	**1.8699**	**10.1452**	**0.0160**	**1.0742**	**0.0674**	**1.1416**	**0.2877**	**0.0656**	**0.3533**	**25.5611**	**1,907.8112**	**1,933.3723**	**1.5903**	**0.0174**	**1,972.1644**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	2/25/2016	5	40	
2	Grading	Grading	1/1/2016	2/2/2016	5	23	
3	Building Construction	Building Construction	1/1/2016	10/22/2016	7	296	
4	Paving	Paving	1/1/2016	6/24/2016	5	126	
5	Architectural Coating	Architectural Coating	1/1/2016	11/11/2016	6	271	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 46

Acres of Paving: 0

Residential Indoor: 491,854; Residential Outdoor: 163,951; Non-Residential Indoor: 317,450; Non-Residential Outdoor: 105,817 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	65.00	0.00	50.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	324.00	48.00	1,400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	35.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	60.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.9131	0.7006	8.0000e-004		0.0458	0.0458		0.0427	0.0427	0.0000	74.1947	74.1947	0.0202	0.0000	74.6184
Total	**0.0858**	**0.9131**	**0.7006**	**8.0000e-004**	**0.0241**	**0.0458**	**0.0699**	**3.6500e-003**	**0.0427**	**0.0464**	**0.0000**	**74.1947**	**74.1947**	**0.0202**	**0.0000**	**74.6184**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	8.9900e-003	7.5000e-003	2.0000e-005	5.1000e-004	1.2000e-004	6.2000e-004	1.4000e-004	1.1000e-004	2.5000e-004	0.0000	2.0565	2.0565	2.0000e-005	0.0000	2.0568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.6600e-003	0.0162	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.4666	2.4666	1.4000e-004	0.0000	2.4695
Total	**1.8200e-003**	**0.0107**	**0.0237**	**5.0000e-005**	**3.2400e-003**	**1.4000e-004**	**3.3700e-003**	**8.7000e-004**	**1.3000e-004**	**1.0000e-003**	**0.0000**	**4.5231**	**4.5231**	**1.6000e-004**	**0.0000**	**4.5263**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.9131	0.7006	8.0000e-004		0.0458	0.0458		0.0427	0.0427	0.0000	74.1946	74.1946	0.0202	0.0000	74.6184
Total	**0.0858**	**0.9131**	**0.7006**	**8.0000e-004**	**0.0241**	**0.0458**	**0.0699**	**3.6500e-003**	**0.0427**	**0.0464**	**0.0000**	**74.1946**	**74.1946**	**0.0202**	**0.0000**	**74.6184**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	8.9900e-003	7.5000e-003	2.0000e-005	5.1000e-004	1.2000e-004	6.2000e-004	1.4000e-004	1.1000e-004	2.5000e-004	0.0000	2.0565	2.0565	2.0000e-005	0.0000	2.0568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.6600e-003	0.0162	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.4666	2.4666	1.4000e-004	0.0000	2.4695
Total	**1.8200e-003**	**0.0107**	**0.0237**	**5.0000e-005**	**3.2400e-003**	**1.4000e-004**	**3.3700e-003**	**8.7000e-004**	**1.3000e-004**	**1.0000e-003**	**0.0000**	**4.5231**	**4.5231**	**1.6000e-004**	**0.0000**	**4.5263**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0938	0.0000	0.0938	0.0407	0.0000	0.0407	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0745	0.8604	0.5651	7.1000e-004		0.0412	0.0412		0.0379	0.0379	0.0000	66.9251	66.9251	0.0202	0.0000	67.3490
Total	**0.0745**	**0.8604**	**0.5651**	**7.1000e-004**	**0.0938**	**0.0412**	**0.1350**	**0.0407**	**0.0379**	**0.0786**	**0.0000**	**66.9251**	**66.9251**	**0.0202**	**0.0000**	**67.3490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0625	0.8095	0.6746	2.0300e-003	0.0456	0.0105	0.0561	0.0125	9.6600e-003	0.0222	0.0000	185.0831	185.0831	1.3700e-003	0.0000	185.1119
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.2700e-003	0.0124	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8911	1.8911	1.0000e-004	0.0000	1.8933
Total	**0.0634**	**0.8108**	**0.6870**	**2.0500e-003**	**0.0477**	**0.0105**	**0.0582**	**0.0131**	**9.6800e-003**	**0.0228**	**0.0000**	**186.9742**	**186.9742**	**1.4700e-003**	**0.0000**	**187.0052**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0938	0.0000	0.0938	0.0407	0.0000	0.0407	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0745	0.8604	0.5651	7.1000e-004		0.0412	0.0412		0.0379	0.0379	0.0000	66.9250	66.9250	0.0202	0.0000	67.3489
Total	**0.0745**	**0.8604**	**0.5651**	**7.1000e-004**	**0.0938**	**0.0412**	**0.1350**	**0.0407**	**0.0379**	**0.0786**	**0.0000**	**66.9250**	**66.9250**	**0.0202**	**0.0000**	**67.3489**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0625	0.8095	0.6746	2.0300e-003	0.0456	0.0105	0.0561	0.0125	9.6600e-003	0.0222	0.0000	185.0831	185.0831	1.3700e-003	0.0000	185.1119
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.2700e-003	0.0124	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8911	1.8911	1.0000e-004	0.0000	1.8933
Total	**0.0634**	**0.8108**	**0.6870**	**2.0500e-003**	**0.0477**	**0.0105**	**0.0582**	**0.0131**	**9.6800e-003**	**0.0228**	**0.0000**	**186.9742**	**186.9742**	**1.4700e-003**	**0.0000**	**187.0052**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5041	4.2189	2.7390	3.9700e-003		0.2912	0.2912		0.2736	0.2736	0.0000	358.3873	358.3873	0.0889	0.0000	360.2539
Total	**0.5041**	**4.2189**	**2.7390**	**3.9700e-003**		**0.2912**	**0.2912**		**0.2736**	**0.2736**	**0.0000**	**358.3873**	**358.3873**	**0.0889**	**0.0000**	**360.2539**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0162	0.2099	0.1749	5.3000e-004	0.0118	2.7200e-003	0.0146	3.2500e-003	2.5000e-003	5.7500e-003	0.0000	47.9845	47.9845	3.6000e-004	0.0000	47.9920
Vendor	0.0891	0.7115	1.0224	1.6900e-003	0.0458	0.0105	0.0563	0.0131	9.6600e-003	0.0228	0.0000	153.1045	153.1045	1.2200e-003	0.0000	153.1302
Worker	0.1807	0.2655	2.5922	5.1800e-003	0.4366	3.5600e-003	0.4401	0.1161	3.2600e-003	0.1194	0.0000	394.2649	394.2649	0.0218	0.0000	394.7236
Total	**0.2859**	**1.1868**	**3.7896**	**7.4000e-003**	**0.4942**	**0.0168**	**0.5110**	**0.1325**	**0.0154**	**0.1479**	**0.0000**	**595.3539**	**595.3539**	**0.0234**	**0.0000**	**595.8458**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5041	4.2189	2.7390	3.9700e-003		0.2912	0.2912		0.2736	0.2736	0.0000	358.3869	358.3869	0.0889	0.0000	360.2535
Total	**0.5041**	**4.2189**	**2.7390**	**3.9700e-003**		**0.2912**	**0.2912**		**0.2736**	**0.2736**	**0.0000**	**358.3869**	**358.3869**	**0.0889**	**0.0000**	**360.2535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0162	0.2099	0.1749	5.3000e-004	0.0118	2.7200e-003	0.0146	3.2500e-003	2.5000e-003	5.7500e-003	0.0000	47.9845	47.9845	3.6000e-004	0.0000	47.9920
Vendor	0.0891	0.7115	1.0224	1.6900e-003	0.0458	0.0105	0.0563	0.0131	9.6600e-003	0.0228	0.0000	153.1045	153.1045	1.2200e-003	0.0000	153.1302
Worker	0.1807	0.2655	2.5922	5.1800e-003	0.4366	3.5600e-003	0.4401	0.1161	3.2600e-003	0.1194	0.0000	394.2649	394.2649	0.0218	0.0000	394.7236
Total	**0.2859**	**1.1868**	**3.7896**	**7.4000e-003**	**0.4942**	**0.0168**	**0.5110**	**0.1325**	**0.0154**	**0.1479**	**0.0000**	**595.3539**	**595.3539**	**0.0234**	**0.0000**	**595.8458**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1317	1.4103	0.9335	1.4000e-003		0.0794	0.0794		0.0731	0.0731	0.0000	132.3870	132.3870	0.0399	0.0000	133.2256
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1326**	**1.4103**	**0.9335**	**1.4000e-003**		**0.0794**	**0.0794**		**0.0731**	**0.0731**	**0.0000**	**132.3870**	**132.3870**	**0.0399**	**0.0000**	**133.2256**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	5.2500e-003	4.3700e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1996	1.1996	1.0000e-005	0.0000	1.1998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	5.2300e-003	0.0511	1.0000e-004	8.6000e-003	7.0000e-005	8.6700e-003	2.2900e-003	6.0000e-005	2.3500e-003	0.0000	7.7699	7.7699	4.3000e-004	0.0000	7.7789
Total	**3.9700e-003**	**0.0105**	**0.0555**	**1.1000e-004**	**8.9000e-003**	**1.4000e-004**	**9.0300e-003**	**2.3700e-003**	**1.2000e-004**	**2.4900e-003**	**0.0000**	**8.9695**	**8.9695**	**4.4000e-004**	**0.0000**	**8.9787**

3.5 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1317	1.4103	0.9335	1.4000e-003		0.0794	0.0794		0.0731	0.0731	0.0000	132.3869	132.3869	0.0399	0.0000	133.2255
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1326**	**1.4103**	**0.9335**	**1.4000e-003**		**0.0794**	**0.0794**		**0.0731**	**0.0731**	**0.0000**	**132.3869**	**132.3869**	**0.0399**	**0.0000**	**133.2255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	5.2500e-003	4.3700e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1996	1.1996	1.0000e-005	0.0000	1.1998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	5.2300e-003	0.0511	1.0000e-004	8.6000e-003	7.0000e-005	8.6700e-003	2.2900e-003	6.0000e-005	2.3500e-003	0.0000	7.7699	7.7699	4.3000e-004	0.0000	7.7789
Total	**3.9700e-003**	**0.0105**	**0.0555**	**1.1000e-004**	**8.9000e-003**	**1.4000e-004**	**9.0300e-003**	**2.3700e-003**	**1.2000e-004**	**2.4900e-003**	**0.0000**	**8.9695**	**8.9695**	**4.4000e-004**	**0.0000**	**8.9787**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0499	0.3214	0.2553	4.0000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	34.5966	34.5966	4.0800e-003	0.0000	34.6822
Total	**2.8633**	**0.3214**	**0.2553**	**4.0000e-004**		**0.0266**	**0.0266**		**0.0266**	**0.0266**	**0.0000**	**34.5966**	**34.5966**	**4.0800e-003**	**0.0000**	**34.6822**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	7.5000e-003	6.2500e-003	2.0000e-005	4.2000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7137	1.7137	1.0000e-005	0.0000	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0488	0.4761	9.5000e-004	0.0802	6.5000e-004	0.0808	0.0213	6.0000e-004	0.0219	0.0000	72.4159	72.4159	4.0100e-003	0.0000	72.5002
Total	**0.0338**	**0.0563**	**0.4824**	**9.7000e-004**	**0.0806**	**7.5000e-004**	**0.0814**	**0.0215**	**6.9000e-004**	**0.0221**	**0.0000**	**74.1297**	**74.1297**	**4.0200e-003**	**0.0000**	**74.2142**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0499	0.3214	0.2553	4.0000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	34.5966	34.5966	4.0800e-003	0.0000	34.6822
Total	**2.8633**	**0.3214**	**0.2553**	**4.0000e-004**		**0.0266**	**0.0266**		**0.0266**	**0.0266**	**0.0000**	**34.5966**	**34.5966**	**4.0800e-003**	**0.0000**	**34.6822**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	7.5000e-003	6.2500e-003	2.0000e-005	4.2000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7137	1.7137	1.0000e-005	0.0000	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0488	0.4761	9.5000e-004	0.0802	6.5000e-004	0.0808	0.0213	6.0000e-004	0.0219	0.0000	72.4159	72.4159	4.0100e-003	0.0000	72.5002
Total	**0.0338**	**0.0563**	**0.4824**	**9.7000e-004**	**0.0806**	**7.5000e-004**	**0.0814**	**0.0215**	**6.9000e-004**	**0.0221**	**0.0000**	**74.1297**	**74.1297**	**4.0200e-003**	**0.0000**	**74.2142**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Unmitigated	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,291.64	1,403.36	1189.72	2,886,539	2,886,539
User Defined Commercial	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,291.64	1,403.36	1,189.72	2,886,539	2,886,539

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
User Defined Commercial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527627	0.065080	0.176461	0.145848	0.036424	0.004888	0.009671	0.020781	0.001221	0.001487	0.006359	0.002101	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.4274	573.4274	0.0259	5.3600e-003	575.6349
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.4274	573.4274	0.0259	5.3600e-003	575.6349
NaturalGas Mitigated	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
NaturalGas Unmitigated	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.73532e+006	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.3600e-003**	**0.0800**	**0.0340**	**5.1000e-004**		**6.4600e-003**	**6.4600e-003**		**6.4600e-003**	**6.4600e-003**	**0.0000**	**92.6033**	**92.6033**	**1.7700e-003**	**1.7000e-003**	**93.1668**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.73532e+006	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
Total		**9.3600e-003**	**0.0800**	**0.0340**	**5.1000e-004**		**6.4600e-003**	**6.4600e-003**		**6.4600e-003**	**6.4600e-003**	**0.0000**	**92.6033**	**92.6033**	**1.7700e-003**	**1.7000e-003**	**93.1668**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	708609	206.1424	9.3200e-003	1.9300e-003	206.9360
Enclosed Parking Structure	1.23402e+006	358.9906	0.0162	3.3600e-003	360.3726
Parking Lot	28512	8.2945	3.8000e-004	8.0000e-005	8.3264
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**573.4274**	**0.0259**	**5.3700e-003**	**575.6349**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	708609	206.1424	9.3200e-003	1.9300e-003	206.9360
Enclosed Parking Structure	1.23402e+006	358.9906	0.0162	3.3600e-003	360.3726
Parking Lot	28512	8.2945	3.8000e-004	8.0000e-005	8.3264
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**573.4274**	**0.0259**	**5.3700e-003**	**575.6349**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Unmitigated	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2813					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1520	2.5800e-003	0.2175	1.9000e-004		0.0317	0.0317		0.0317	0.0317	3.2080	5.1825	8.3906	5.9600e-003	2.7000e-004	8.5986
Landscaping	0.0470	0.0173	1.4808	8.0000e-005		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	2.3871	2.3871	2.4500e-003	0.0000	2.4386
Total	**2.3782**	**0.0199**	**1.6983**	**2.7000e-004**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**3.2080**	**7.5697**	**10.7777**	**8.4100e-003**	**2.7000e-004**	**11.0372**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2813					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1520	2.5800e-003	0.2175	1.9000e-004		0.0317	0.0317		0.0317	0.0317	3.2080	5.1825	8.3906	5.9600e-003	2.7000e-004	8.5986
Landscaping	0.0470	0.0173	1.4808	8.0000e-005		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	2.3871	2.3871	2.4500e-003	0.0000	2.4386
Total	**2.3782**	**0.0199**	**1.6983**	**2.7000e-004**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**3.2080**	**7.5697**	**10.7777**	**8.4100e-003**	**2.7000e-004**	**11.0372**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.3504	0.4173	0.0101	44.2373
Unmitigated	32.3504	0.4174	0.0101	44.2437

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.7702 / 8.05077	32.3504	0.4174	0.0101	44.2437
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**32.3504**	**0.4174**	**0.0101**	**44.2437**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.7702 / 8.05077	32.3504	0.4173	0.0101	44.2373
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**32.3504**	**0.4173**	**0.0101**	**44.2373**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.3017	1.0816	0.0000	41.0152
Unmitigated	18.3017	1.0816	0.0000	41.0152

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**18.3017**	**1.0816**	**0.0000**	**41.0152**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**18.3017**	**1.0816**	**0.0000**	**41.0152**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Saranap Village - Mitigated Plan - Operational

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	315.00	Space	2.84	117,287.00	0
Enclosed Parking Structure	108.00	Space	0.97	43,200.00	0
Enclosed Parking Structure	48.00	Space	0.43	19,200.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0
Fast Food Restaurant w/o Drive Thru	2.13	1000sqft	0.05	2,135.00	0
High Turnover (Sit Down Restaurant)	4.81	1000sqft	0.11	4,813.00	0
Recreational Swimming Pool	0.74	1000sqft	0.02	737.00	0
Recreational Swimming Pool	0.94	1000sqft	0.02	936.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Strip Mall	1.75	1000sqft	0.04	1,750.00	0
Strip Mall	2.48	1000sqft	0.06	2,475.00	0
Strip Mall	3.45	1000sqft	0.08	3,452.00	0
Supermarket	7.64	1000sqft	0.18	7,636.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	422.38	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Climate Zone for Zip Code 94595 (found on Google Maps) using Existing Land Uses map. PG&E assumed for this area. CO2 Intensity Factor assumes 20% Renewable Energy consistent with CA Renewable Portfolio Standard. The service population will be updated based on project-specific metrics in the Greenhouse Gas Technical Report.

Land Use - Consistent with emailed information from client and Project Description

Construction Phase - Construction is modeled in a separate CalEEMod

Off-road Equipment -

Off-road Equipment - Construction modeled separately in CalEEMod

Trips and VMT - Construction modeled separately

Demolition -

Grading - Consistent with client-provided data

Architectural Coating -

Vehicle Trips - Trip rates and pass-by trip percentages based on traffic data from OmniMeans

Energy Use - Default Title 24 energy use adjusted to account for 2013 Title 24 standards

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	306890	488820
tblAreaCoating	Area_Residential_Exterior	163951	158625
tblAreaCoating	Area_Residential_Interior	491854	475875
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	312.05	239.34
tblEnergyUse	T24E	3.92	3.07
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	2.74	2.14
tblEnergyUse	T24E	3.32	2.60
tblEnergyUse	T24NG	7,191.67	6,918.39
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	41.99	34.94

tblEnergyUse	T24NG	4.10	3.41
tblEnergyUse	T24NG	25.82	21.48
tblFireplaces	NumberGas	107.80	135.24
tblFireplaces	NumberWood	27.44	0.00
tblLandUse	LandUseSquareFeet	126,000.00	117,287.00
tblLandUse	LandUseSquareFeet	2,130.00	2,135.00
tblLandUse	LandUseSquareFeet	4,810.00	4,813.00
tblLandUse	LandUseSquareFeet	740.00	737.00
tblLandUse	LandUseSquareFeet	940.00	936.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblLandUse	LandUseSquareFeet	2,480.00	2,475.00
tblLandUse	LandUseSquareFeet	3,450.00	3,452.00
tblLandUse	LandUseSquareFeet	7,640.00	7,636.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	422.38
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	DV_TP	37.00	34.70
tblVehicleTrips	DV_TP	20.00	27.50
tblVehicleTrips	DV_TP	40.00	41.20
tblVehicleTrips	DV_TP	30.00	38.40
tblVehicleTrips	PB_TP	12.00	17.50

tblVehicleTrips	PB_TP	43.00	21.50
tblVehicleTrips	PB_TP	15.00	12.50
tblVehicleTrips	PB_TP	36.00	18.00
tblVehicleTrips	PR_TP	51.00	47.80
tblVehicleTrips	PR_TP	37.00	51.00
tblVehicleTrips	PR_TP	45.00	46.30
tblVehicleTrips	PR_TP	34.00	43.60
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	696.00	715.22
tblVehicleTrips	ST_TR	158.37	119.47
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	42.04	156.70
tblVehicleTrips	ST_TR	177.59	96.12
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	SU_TR	500.00	715.22
tblVehicleTrips	SU_TR	131.84	119.47
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	20.43	156.70
tblVehicleTrips	SU_TR	166.44	96.12
tblVehicleTrips	WD_TR	6.59	4.18
tblVehicleTrips	WD_TR	716.00	715.22
tblVehicleTrips	WD_TR	127.15	119.47
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	44.32	156.70
tblVehicleTrips	WD_TR	102.24	96.12
tblWater	IndoorWaterUseRate	12,770,189.02	21,462,000.00
tblWater	IndoorWaterUseRate	646,526.81	0.00
tblWater	IndoorWaterUseRate	1,459,997.16	0.00

tblWater	IndoorWaterUseRate	99,360.48	0.00
tblWater	IndoorWaterUseRate	568,876.96	406,245.00
tblWater	IndoorWaterUseRate	941,769.16	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	429,699.00
tblWater	OutdoorWaterUseRate	41,267.67	0.00
tblWater	OutdoorWaterUseRate	93,191.31	0.00
tblWater	OutdoorWaterUseRate	60,898.36	0.00
tblWater	OutdoorWaterUseRate	348,666.53	0.00
tblWater	OutdoorWaterUseRate	29,126.88	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	611.8097	611.8097	0.0338	9.3800e-003	615.4258
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	22.9586	29.8964	0.7142	0.0172	50.2106
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,482.2451**	**2,537.6657**	**3.6335**	**0.0267**	**2,622.2290**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	611.8097	611.8097	0.0338	9.3800e-003	615.4258
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	22.9586	29.8964	0.7140	0.0171	50.1996
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,482.2451**	**2,537.6657**	**3.6334**	**0.0266**	**2,622.2179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.00	81	0.73
Demolition	Excavators	3	0.00	162	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Unmitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	819.28	819.28	819.28	1,828,933	1,828,933
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,523.42	1,523.42	1523.42	832,270	832,270
High Turnover (Sit Down Restaurant)	574.65	574.65	574.65	391,280	391,280
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Strip Mall	274.23	274.23	274.23	218,915	218,915
Strip Mall	388.62	388.62	388.62	310,233	310,233
Strip Mall	540.62	540.62	540.62	431,574	431,574
Supermarket	734.36	734.36	734.36	436,068	436,068
Total	4,855.16	4,855.16	4,855.16	4,449,273	4,449,273

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	1.38	7.30	1.50	79.50	19.00	47.8	34.7	17.5
High Turnover (Sit Down	9.50	1.38	7.30	8.50	72.50	19.00	51	27.5	21.5
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Supermarket	9.50	1.38	7.30	6.50	74.50	19.00	43.6	38.4	18

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527213	0.065297	0.176718	0.144995	0.036242	0.004841	0.009763	0.021699	0.001225	0.001482	0.006415	0.002059	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
NaturalGas Unmitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.0362	446.0362	0.0306	6.3400e-003	448.6435
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.0362	446.0362	0.0306	6.3400e-003	448.6435

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	133.0308	9.1300e-003	1.8900e-003	133.8084
Enclosed Parking Structure	109440	20.9674	1.4400e-003	3.0000e-004	21.0900
Enclosed Parking Structure	246240	47.1767	3.2400e-003	6.7000e-004	47.4525
Enclosed Parking Structure	668536	128.0837	8.7900e-003	1.8200e-003	128.8324
Fast Food Restaurant w/o Drive Thru	63046.6	12.0790	8.3000e-004	1.7000e-004	12.1496
High Turnover (Sit Down Restaurant)	142128	27.2301	1.8700e-003	3.9000e-004	27.3892
Parking Lot	28512	5.4626	3.8000e-004	8.0000e-005	5.4945
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	3.6914	2.5000e-004	5.0000e-005	3.7130
Strip Mall	27249.8	5.2207	3.6000e-004	7.0000e-005	5.2513
Strip Mall	38006.5	7.2816	5.0000e-004	1.0000e-004	7.3242
Supermarket	291313	55.8123	3.8300e-003	7.9000e-004	56.1385
Total		**446.0362**	**0.0306**	**6.3300e-003**	**448.6435**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	133.0308	9.1300e-003	1.8900e-003	133.8084
Enclosed Parking Structure	109440	20.9674	1.4400e-003	3.0000e-004	21.0900
Enclosed Parking Structure	246240	47.1767	3.2400e-003	6.7000e-004	47.4525
Enclosed Parking Structure	668536	128.0837	8.7900e-003	1.8200e-003	128.8324
Fast Food Restaurant w/o Drive Thru	63046.6	12.0790	8.3000e-004	1.7000e-004	12.1496
High Turnover (Sit Down Restaurant)	142128	27.2301	1.8700e-003	3.9000e-004	27.3892
Parking Lot	28512	5.4626	3.8000e-004	8.0000e-005	5.4945
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	3.6914	2.5000e-004	5.0000e-005	3.7130
Strip Mall	27249.8	5.2207	3.6000e-004	7.0000e-005	5.2513
Strip Mall	38006.5	7.2816	5.0000e-004	1.0000e-004	7.3242
Supermarket	291313	55.8123	3.8300e-003	7.9000e-004	56.1385
Total		**446.0362**	**0.0306**	**6.3300e-003**	**448.6435**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Unmitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	29.8964	0.7142	0.0172	50.2106
Mitigated	29.8964	0.7140	0.0171	50.1996

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	29.3464	0.7009	0.0168	49.2832
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.5500	0.0133	3.2000e-004	0.9274
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8964**	**0.7142**	**0.0172**	**50.2106**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	29.3464	0.7008	0.0168	49.2724
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.5500	0.0133	3.2000e-004	0.9272
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8964**	**0.7140**	**0.0171**	**50.1996**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2299	2.7912	0.0000	105.8453
Unmitigated	47.2299	2.7912	0.0000	105.8453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B
AERMOD MODELING FILES

AERMOD Input Files

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 1.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/offsite.018.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.offsite.018.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.offsite.018.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.offsite.018.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.offsite.018.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.offsite.018.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.offsite.018.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.offsite.018.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.offsite.018.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 4.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/offsite.048.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.offsite.048.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.offsite.048.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.offsite.048.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.offsite.048.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.offsite.048.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.offsite.048.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.offsite.048.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.offsite.048.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 1.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/a.018.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteA.018.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteA.018.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteA.018.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteA.018.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteA.018.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteA.018.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteA.018.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteA.018.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 4.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/a.048.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteA.048.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteA.048.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteA.048.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteA.048.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteA.048.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteA.048.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteA.048.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteA.048.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 7.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/a.078.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteA.078.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteA.078.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteA.078.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteA.078.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteA.078.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteA.078.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteA.078.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteA.078.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 10.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/a.108.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteA.108.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteA.108.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteA.108.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteA.108.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteA.108.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteA.108.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteA.108.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteA.108.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 13.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/a.138.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteA.138.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteA.138.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteA.138.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteA.138.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteA.138.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteA.138.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteA.138.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteA.138.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 1.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/b.018.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteB.018.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteB.018.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteB.018.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteB.018.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteB.018.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteB.018.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteB.018.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteB.018.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 4.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/b.048.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteB.048.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteB.048.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteB.048.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteB.048.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteB.048.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteB.048.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteB.048.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteB.048.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 7.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/b.078.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteB.078.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteB.078.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteB.078.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteB.078.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteB.078.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteB.078.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteB.078.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteB.078.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 10.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/b.108.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteB.108.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteB.108.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteB.108.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteB.108.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteB.108.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteB.108.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteB.108.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteB.108.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 13.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/b.138.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteB.138.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteB.138.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteB.138.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteB.138.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteB.138.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteB.138.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteB.138.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteB.138.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 1.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/c.018.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteC.018.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteC.018.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteC.018.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteC.018.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteC.018.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteC.018.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteC.018.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteC.018.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 4.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/c.048.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteC.048.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteC.048.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteC.048.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteC.048.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteC.048.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteC.048.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteC.048.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteC.048.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 7.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/c.078.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteC.078.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteC.078.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteC.078.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteC.078.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteC.078.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteC.078.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteC.078.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteC.078.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 10.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/c.108.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteC.108.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteC.108.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteC.108.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteC.108.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteC.108.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteC.108.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteC.108.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteC.108.1st.period.plot 10008
OU FINISHED
```

```
CO STARTING
CO TITLEONE SARANAP
CO MODELOPT CONC
CO AVERTIME 1 PERIOD
CO POLLUTID CHIQ
CO RUNORNOT RUN
CO FLAGPOLE 13.80
CO FINISHED

** Sources
SO STARTING
SO ELEVUNIT  METERS
SO INCLUDED  emissions/sources.txt
SO INCLUDED  emissions/emisfact.txt
SO INCLUDED  emissions/srcgrps.txt
SO FINISHED

** Receptors
RE STARTING
RE ELEVUNIT METERS
RE INCLUDED ../aermap/c.138.rec
RE FINISHED

** Meteorology
ME STARTING
ME SURFFILE ../aermet/KCCR.2010-2014.SFC
ME PROFFILE ../aermet/KCCR.2010-2014.PFL
ME PROFBASE 5.50 METERS
ME SURFDATA 23254 2010
ME UAIRDATA 23230 2010
ME FINISHED

NO ECHO

** Output files
OU STARTING
OU RECTABLE 1 1
OU PLOTFILE 1 SITEA 1 chiQ.5Y.siteA.siteC.138.1st.1hr.plot 10001
OU PLOTFILE 1 SITEB 1 chiQ.5Y.siteB.siteC.138.1st.1hr.plot 10002
OU PLOTFILE 1 SITEC 1 chiQ.5Y.siteC.siteC.138.1st.1hr.plot 10003
OU PLOTFILE 1 STREETS 1 chiQ.5Y.streets.siteC.138.1st.1hr.plot 10004
OU PLOTFILE PERIOD SITEA chiQ.5Y.siteA.siteC.138.1st.period.plot 10005
OU PLOTFILE PERIOD SITEB chiQ.5Y.siteB.siteC.138.1st.period.plot 10006
OU PLOTFILE PERIOD SITEC chiQ.5Y.siteC.siteC.138.1st.period.plot 10007
OU PLOTFILE PERIOD STREETS chiQ.5Y.streets.siteC.138.1st.period.plot 10008
OU FINISHED
```

Receptor Files

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     265  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581104.13  4194395.51  67.46  198.99  1.8
RE DISCCART  581109.13  4194395.63  67.38  198.99  1.8
RE DISCCART  581114.13  4194395.75  67.30  198.99  1.8
RE DISCCART  581099.01  4194400.39  67.59  198.99  1.8
RE DISCCART  581104.01  4194400.51  67.50  198.99  1.8
RE DISCCART  581109.01  4194400.63  67.42  198.99  1.8
RE DISCCART  581114.01  4194400.75  67.32  198.99  1.8
RE DISCCART  581119.01  4194400.86  67.24  198.99  1.8
RE DISCCART  581093.89  4194405.27  67.68  198.99  1.8
RE DISCCART  581098.89  4194405.39  67.61  198.99  1.8
RE DISCCART  581103.89  4194405.51  67.51  198.99  1.8
RE DISCCART  581108.89  4194405.62  67.41  198.99  1.8
RE DISCCART  581113.89  4194405.74  67.31  198.99  1.8
RE DISCCART  581118.89  4194405.86  67.22  198.99  1.8
RE DISCCART  581093.77  4194410.27  67.70  198.99  1.8
RE DISCCART  581098.77  4194410.38  67.64  198.99  1.8
RE DISCCART  581103.77  4194410.50  67.56  198.99  1.8
RE DISCCART  581108.77  4194410.62  67.47  198.99  1.8
RE DISCCART  581113.77  4194410.74  67.39  198.99  1.8
RE DISCCART  581118.77  4194410.86  67.30  198.99  1.8
RE DISCCART  581123.76  4194410.98  67.21  198.99  1.8
RE DISCCART  581093.65  4194415.26  67.72  198.99  1.8
RE DISCCART  581098.65  4194415.38  67.67  198.99  1.8
RE DISCCART  581103.65  4194415.50  67.62  198.99  1.8
RE DISCCART  581108.65  4194415.62  67.56  198.99  1.8
RE DISCCART  581113.65  4194415.74  67.49  198.99  1.8
RE DISCCART  581118.65  4194415.86  67.40  198.99  1.8
RE DISCCART  581123.64  4194415.98  67.31  198.99  1.8
RE DISCCART  581128.64  4194416.10  67.21  198.99  1.8
RE DISCCART  581133.64  4194416.22  67.11  198.99  1.8
RE DISCCART  581138.64  4194416.34  67.01  198.99  1.8
RE DISCCART  581093.53  4194420.26  67.79  198.99  1.8
RE DISCCART  581098.53  4194420.38  67.74  198.99  1.8
RE DISCCART  581103.53  4194420.50  67.69  198.99  1.8
RE DISCCART  581108.53  4194420.62  67.63  198.99  1.8
RE DISCCART  581113.53  4194420.74  67.56  198.99  1.8
RE DISCCART  581118.53  4194420.86  67.47  198.99  1.8
RE DISCCART  581123.53  4194420.98  67.37  198.99  1.8
RE DISCCART  581128.52  4194421.10  67.26  198.99  1.8
RE DISCCART  581133.52  4194421.22  67.15  198.99  1.8
RE DISCCART  581138.52  4194421.34  67.04  198.99  1.8
RE DISCCART  581143.52  4194421.46  66.94  198.99  1.8
RE DISCCART  581148.52  4194421.58  66.84  198.99  1.8
RE DISCCART  581093.41  4194425.26  67.89  198.99  1.8
RE DISCCART  581098.41  4194425.38  67.84  198.99  1.8
RE DISCCART  581103.41  4194425.50  67.78  198.99  1.8
RE DISCCART  581108.41  4194425.62  67.70  198.99  1.8
```

```
RE DISCCART  581113.41  4194425.74  67.61  198.99  1.8
RE DISCCART  581118.41  4194425.86  67.51  198.99  1.8
RE DISCCART  581123.41  4194425.98  67.41  198.99  1.8
RE DISCCART  581128.40  4194426.10  67.31  198.99  1.8
RE DISCCART  581133.40  4194426.22  67.19  198.99  1.8
RE DISCCART  581138.40  4194426.34  67.07  198.99  1.8
RE DISCCART  581143.40  4194426.46  66.96  198.99  1.8
RE DISCCART  581148.40  4194426.58  66.87  198.99  1.8
RE DISCCART  581153.40  4194426.69  66.81  198.99  1.8
RE DISCCART  581158.40  4194426.81  66.73  198.99  1.8
RE DISCCART  581093.29  4194430.26  67.97  198.99  1.8
RE DISCCART  581098.29  4194430.38  67.90  198.99  1.8
RE DISCCART  581103.29  4194430.50  67.83  198.99  1.8
RE DISCCART  581108.29  4194430.62  67.75  198.99  1.8
RE DISCCART  581113.29  4194430.74  67.65  198.99  1.8
RE DISCCART  581118.29  4194430.86  67.55  198.99  1.8
RE DISCCART  581123.29  4194430.98  67.43  198.99  1.8
RE DISCCART  581128.28  4194431.10  67.33  198.99  1.8
RE DISCCART  581133.28  4194431.22  67.22  198.99  1.8
RE DISCCART  581138.28  4194431.34  67.12  198.99  1.8
RE DISCCART  581143.28  4194431.46  67.03  198.99  1.8
RE DISCCART  581148.28  4194431.57  66.94  198.99  1.8
RE DISCCART  581153.28  4194431.69  66.87  198.99  1.8
RE DISCCART  581158.28  4194431.81  66.78  198.99  1.8
RE DISCCART  581163.27  4194431.93  66.67  198.99  1.8
RE DISCCART  581168.27  4194432.05  66.55  198.99  1.8
RE DISCCART  581093.17  4194435.26  68.02  198.99  1.8
RE DISCCART  581098.17  4194435.38  67.92  198.99  1.8
RE DISCCART  581103.17  4194435.50  67.84  198.99  1.8
RE DISCCART  581108.17  4194435.62  67.77  198.99  1.8
RE DISCCART  581113.17  4194435.74  67.69  198.99  1.8
RE DISCCART  581118.17  4194435.86  67.57  198.99  1.8
RE DISCCART  581123.17  4194435.98  67.44  198.99  1.8
RE DISCCART  581128.17  4194436.10  67.34  198.99  1.8
RE DISCCART  581133.16  4194436.21  67.25  198.99  1.8
RE DISCCART  581138.16  4194436.33  67.18  198.99  1.8
RE DISCCART  581143.16  4194436.45  67.11  198.99  1.8
RE DISCCART  581148.16  4194436.57  67.03  198.99  1.8
RE DISCCART  581153.16  4194436.69  66.93  198.99  1.8
RE DISCCART  581158.16  4194436.81  66.82  198.99  1.8
RE DISCCART  581163.16  4194436.93  66.71  198.99  1.8
RE DISCCART  581168.15  4194437.05  66.57  198.99  1.8
RE DISCCART  581093.06  4194440.26  68.09  198.99  1.8
RE DISCCART  581098.05  4194440.38  67.98  198.99  1.8
RE DISCCART  581103.05  4194440.50  67.88  198.99  1.8
RE DISCCART  581108.05  4194440.61  67.79  198.99  1.8
RE DISCCART  581113.05  4194440.73  67.71  198.99  1.8
RE DISCCART  581118.05  4194440.85  67.60  198.99  1.8
RE DISCCART  581123.05  4194440.97  67.48  198.99  1.8
RE DISCCART  581128.05  4194441.09  67.39  198.99  1.8
RE DISCCART  581133.04  4194441.21  67.31  198.99  1.8
RE DISCCART  581138.04  4194441.33  67.25  198.99  1.8
RE DISCCART  581143.04  4194441.45  67.17  198.99  1.8
RE DISCCART  581148.04  4194441.57  67.08  198.99  1.8
```

```
RE DISCCART  581153.04  4194441.69  66.97  198.99  1.8
RE DISCCART  581158.04  4194441.81  66.86  198.99  1.8
RE DISCCART  581163.04  4194441.93  66.73  198.99  1.8
RE DISCCART  581168.03  4194442.05  66.60  198.99  1.8
RE DISCCART  581092.94  4194445.26  68.18  198.99  1.8
RE DISCCART  581097.93  4194445.37  68.06  198.99  1.8
RE DISCCART  581102.93  4194445.49  67.94  198.99  1.8
RE DISCCART  581107.93  4194445.61  67.82  198.99  1.8
RE DISCCART  581112.93  4194445.73  67.73  198.99  1.8
RE DISCCART  581117.93  4194445.85  67.63  198.99  1.8
RE DISCCART  581122.93  4194445.97  67.54  198.99  1.8
RE DISCCART  581127.93  4194446.09  67.48  198.99  1.8
RE DISCCART  581132.92  4194446.21  67.40  198.99  1.8
RE DISCCART  581137.92  4194446.33  67.32  198.99  1.8
RE DISCCART  581142.92  4194446.45  67.22  198.99  1.8
RE DISCCART  581147.92  4194446.57  67.12  198.99  1.8
RE DISCCART  581152.92  4194446.69  67.01  198.99  1.8
RE DISCCART  581157.92  4194446.81  66.88  198.99  1.8
RE DISCCART  581162.92  4194446.93  66.75  198.99  1.8
RE DISCCART  581167.91  4194447.05  66.64  198.99  1.8
RE DISCCART  581092.82  4194450.25  68.26  198.99  1.8
RE DISCCART  581097.82  4194450.37  68.13  198.99  1.8
RE DISCCART  581102.81  4194450.49  67.99  198.99  1.8
RE DISCCART  581107.81  4194450.61  67.87  198.99  1.8
RE DISCCART  581112.81  4194450.73  67.77  198.99  1.8
RE DISCCART  581117.81  4194450.85  67.69  198.99  1.8
RE DISCCART  581122.81  4194450.97  67.61  198.99  1.8
RE DISCCART  581127.81  4194451.09  67.55  198.99  1.8
RE DISCCART  581132.81  4194451.21  67.47  198.99  1.8
RE DISCCART  581137.80  4194451.33  67.36  198.99  1.8
RE DISCCART  581142.80  4194451.45  67.25  198.99  1.8
RE DISCCART  581147.80  4194451.57  67.14  198.99  1.8
RE DISCCART  581152.80  4194451.69  67.03  198.99  1.8
RE DISCCART  581157.80  4194451.81  66.91  198.99  1.8
RE DISCCART  581162.80  4194451.93  66.79  198.99  1.8
RE DISCCART  581167.79  4194452.05  66.69  198.99  1.8
RE DISCCART  581092.70  4194455.25  68.31  198.99  1.8
RE DISCCART  581097.69  4194455.37  68.18  198.99  1.8
RE DISCCART  581102.69  4194455.49  68.05  198.99  1.8
RE DISCCART  581107.69  4194455.61  67.92  198.99  1.8
RE DISCCART  581112.69  4194455.73  67.83  198.99  1.8
RE DISCCART  581117.69  4194455.85  67.76  198.99  1.8
RE DISCCART  581122.69  4194455.97  67.69  198.99  1.8
RE DISCCART  581127.69  4194456.09  67.61  198.99  1.8
RE DISCCART  581132.68  4194456.21  67.51  198.99  1.8
RE DISCCART  581137.68  4194456.33  67.39  198.99  1.8
RE DISCCART  581142.68  4194456.45  67.27  198.99  1.8
RE DISCCART  581147.68  4194456.57  67.15  198.99  1.8
RE DISCCART  581152.68  4194456.69  67.04  198.99  1.8
RE DISCCART  581157.68  4194456.81  66.94  198.99  1.8
RE DISCCART  581162.68  4194456.93  66.84  198.99  1.8
RE DISCCART  581167.67  4194457.05  66.74  198.99  1.8
RE DISCCART  581092.58  4194460.25  68.36  198.99  1.8
RE DISCCART  581097.58  4194460.37  68.23  198.99  1.8
```

```
RE DISCCART  581102.57  4194460.49  68.09  198.99  1.8
RE DISCCART  581107.57  4194460.61  67.97  198.99  1.8
RE DISCCART  581112.57  4194460.73  67.88  198.99  1.8
RE DISCCART  581117.57  4194460.85  67.80  198.99  1.8
RE DISCCART  581122.57  4194460.97  67.73  198.99  1.8
RE DISCCART  581127.57  4194461.09  67.64  198.99  1.8
RE DISCCART  581132.57  4194461.21  67.53  198.99  1.8
RE DISCCART  581137.56  4194461.33  67.41  198.99  1.8
RE DISCCART  581142.56  4194461.45  67.29  198.99  1.8
RE DISCCART  581147.56  4194461.57  67.17  198.99  1.8
RE DISCCART  581152.56  4194461.69  67.08  198.99  1.8
RE DISCCART  581157.56  4194461.81  66.98  198.99  1.8
RE DISCCART  581162.56  4194461.92  66.89  198.99  1.8
RE DISCCART  581167.56  4194462.04  66.78  198.99  1.8
RE DISCCART  581092.46  4194465.25  68.39  198.99  1.8
RE DISCCART  581097.46  4194465.37  68.27  198.99  1.8
RE DISCCART  581102.45  4194465.49  68.14  198.99  1.8
RE DISCCART  581107.45  4194465.61  68.01  198.99  1.8
RE DISCCART  581112.45  4194465.73  67.92  198.99  1.8
RE DISCCART  581117.45  4194465.85  67.82  198.99  1.8
RE DISCCART  581122.45  4194465.97  67.73  198.99  1.8
RE DISCCART  581127.45  4194466.09  67.64  198.99  1.8
RE DISCCART  581132.45  4194466.21  67.53  198.99  1.8
RE DISCCART  581137.44  4194466.32  67.42  198.99  1.8
RE DISCCART  581142.44  4194466.45  67.31  198.99  1.8
RE DISCCART  581147.44  4194466.56  67.21  198.99  1.8
RE DISCCART  581152.44  4194466.68  67.12  198.99  1.8
RE DISCCART  581157.44  4194466.80  67.02  198.99  1.8
RE DISCCART  581162.44  4194466.92  66.93  198.99  1.8
RE DISCCART  581167.44  4194467.04  66.82  198.99  1.8
RE DISCCART  581092.34  4194470.25  68.40  198.99  1.8
RE DISCCART  581097.34  4194470.37  68.28  198.99  1.8
RE DISCCART  581102.34  4194470.49  68.15  198.99  1.8
RE DISCCART  581107.33  4194470.61  68.04  198.99  1.8
RE DISCCART  581112.33  4194470.73  67.94  198.99  1.8
RE DISCCART  581117.33  4194470.85  67.84  198.99  1.8
RE DISCCART  581122.33  4194470.97  67.74  198.99  1.8
RE DISCCART  581127.33  4194471.09  67.64  198.99  1.8
RE DISCCART  581132.33  4194471.20  67.53  198.99  1.8
RE DISCCART  581137.33  4194471.32  67.41  198.99  1.8
RE DISCCART  581142.32  4194471.44  67.31  198.99  1.8
RE DISCCART  581147.32  4194471.56  67.21  198.99  1.8
RE DISCCART  581152.32  4194471.68  67.13  198.99  1.8
RE DISCCART  581157.32  4194471.80  67.04  198.99  1.8
RE DISCCART  581162.32  4194471.92  66.93  198.99  1.8
RE DISCCART  581167.32  4194472.04  66.81  198.99  1.8
RE DISCCART  581092.22  4194475.25  68.34  198.99  1.8
RE DISCCART  581097.22  4194475.37  68.24  198.99  1.8
RE DISCCART  581102.22  4194475.49  68.13  198.99  1.8
RE DISCCART  581107.21  4194475.61  68.03  198.99  1.8
RE DISCCART  581112.21  4194475.72  67.94  198.99  1.8
RE DISCCART  581117.21  4194475.84  67.84  198.99  1.8
RE DISCCART  581122.21  4194475.96  67.74  198.99  1.8
RE DISCCART  581127.21  4194476.08  67.64  198.99  1.8
```

```
RE DISCCART  581132.21  4194476.20  67.53  198.99  1.8
RE DISCCART  581137.21  4194476.32  67.40  198.99  1.8
RE DISCCART  581142.20  4194476.44  67.29  198.99  1.8
RE DISCCART  581147.20  4194476.56  67.19  198.99  1.8
RE DISCCART  581152.20  4194476.68  67.12  198.99  1.8
RE DISCCART  581157.20  4194476.80  67.02  198.99  1.8
RE DISCCART  581162.20  4194476.92  66.90  198.99  1.8
RE DISCCART  581167.20  4194477.04  66.78  198.99  1.8
RE DISCCART  581092.10  4194480.25  68.28  198.99  1.8
RE DISCCART  581097.10  4194480.36  68.19  198.99  1.8
RE DISCCART  581102.10  4194480.48  68.10  198.99  1.8
RE DISCCART  581107.09  4194480.60  68.01  198.99  1.8
RE DISCCART  581112.09  4194480.72  67.93  198.99  1.8
RE DISCCART  581117.09  4194480.84  67.84  198.99  1.8
RE DISCCART  581122.09  4194480.96  67.74  198.99  1.8
RE DISCCART  581127.09  4194481.08  67.64  198.99  1.8
RE DISCCART  581132.09  4194481.20  67.53  198.99  1.8
RE DISCCART  581137.09  4194481.32  67.39  198.99  1.8
RE DISCCART  581142.08  4194481.44  67.27  198.99  1.8
RE DISCCART  581147.08  4194481.56  67.16  198.99  1.8
RE DISCCART  581152.08  4194481.68  67.09  198.99  1.8
RE DISCCART  581157.08  4194481.80  66.99  198.99  1.8
RE DISCCART  581162.08  4194481.92  66.87  198.99  1.8
RE DISCCART  581167.08  4194482.04  66.77  198.99  1.8
RE DISCCART  581091.98  4194485.24  68.19  198.99  1.8
RE DISCCART  581096.98  4194485.36  68.12  198.99  1.8
RE DISCCART  581101.98  4194485.48  68.05  198.99  1.8
RE DISCCART  581106.98  4194485.60  67.97  198.99  1.8
RE DISCCART  581111.97  4194485.72  67.91  198.99  1.8
RE DISCCART  581116.97  4194485.84  67.83  198.99  1.8
RE DISCCART  581121.97  4194485.96  67.75  198.99  1.8
RE DISCCART  581126.97  4194486.08  67.64  198.99  1.8
RE DISCCART  581131.97  4194486.20  67.52  198.99  1.8
RE DISCCART  581136.97  4194486.32  67.39  198.99  1.8
RE DISCCART  581141.97  4194486.44  67.27  198.99  1.8
RE DISCCART  581146.96  4194486.56  67.15  198.99  1.8
RE DISCCART  581151.96  4194486.68  67.05  198.99  1.8
RE DISCCART  581156.96  4194486.80  66.95  198.99  1.8
RE DISCCART  581161.96  4194486.92  66.84  198.99  1.8
RE DISCCART  581166.96  4194487.04  66.79  198.99  1.8
RE DISCCART  581091.86  4194490.24  68.09  198.99  1.8
RE DISCCART  581096.86  4194490.36  68.04  198.99  1.8
RE DISCCART  581101.86  4194490.48  67.99  198.99  1.8
RE DISCCART  581106.86  4194490.60  67.93  198.99  1.8
RE DISCCART  581111.85  4194490.72  67.88  198.99  1.8
RE DISCCART  581116.85  4194490.84  67.81  198.99  1.8
RE DISCCART  581121.85  4194490.96  67.73  198.99  1.8
RE DISCCART  581126.85  4194491.08  67.63  198.99  1.8
RE DISCCART  581131.85  4194491.20  67.51  198.99  1.8
RE DISCCART  581136.85  4194491.32  67.38  198.99  1.8
RE DISCCART  581141.85  4194491.44  67.25  198.99  1.8
RE DISCCART  581146.84  4194491.56  67.12  198.99  1.8
RE DISCCART  581151.84  4194491.68  67.01  198.99  1.8
RE DISCCART  581156.84  4194491.80  66.93  198.99  1.8
```

```
RE DISCCART  581161.84  4194491.92  66.87  198.99  1.8
RE DISCCART  581166.84  4194492.04  66.87  198.99  1.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     265  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581104.13  4194395.51  67.46  198.99  4.8
RE DISCCART  581109.13  4194395.63  67.38  198.99  4.8
RE DISCCART  581114.13  4194395.75  67.30  198.99  4.8
RE DISCCART  581099.01  4194400.39  67.59  198.99  4.8
RE DISCCART  581104.01  4194400.51  67.50  198.99  4.8
RE DISCCART  581109.01  4194400.63  67.42  198.99  4.8
RE DISCCART  581114.01  4194400.75  67.32  198.99  4.8
RE DISCCART  581119.01  4194400.86  67.24  198.99  4.8
RE DISCCART  581093.89  4194405.27  67.68  198.99  4.8
RE DISCCART  581098.89  4194405.39  67.61  198.99  4.8
RE DISCCART  581103.89  4194405.51  67.51  198.99  4.8
RE DISCCART  581108.89  4194405.62  67.41  198.99  4.8
RE DISCCART  581113.89  4194405.74  67.31  198.99  4.8
RE DISCCART  581118.89  4194405.86  67.22  198.99  4.8
RE DISCCART  581093.77  4194410.27  67.70  198.99  4.8
RE DISCCART  581098.77  4194410.38  67.64  198.99  4.8
RE DISCCART  581103.77  4194410.50  67.56  198.99  4.8
RE DISCCART  581108.77  4194410.62  67.47  198.99  4.8
RE DISCCART  581113.77  4194410.74  67.39  198.99  4.8
RE DISCCART  581118.77  4194410.86  67.30  198.99  4.8
RE DISCCART  581123.76  4194410.98  67.21  198.99  4.8
RE DISCCART  581093.65  4194415.26  67.72  198.99  4.8
RE DISCCART  581098.65  4194415.38  67.67  198.99  4.8
RE DISCCART  581103.65  4194415.50  67.62  198.99  4.8
RE DISCCART  581108.65  4194415.62  67.56  198.99  4.8
RE DISCCART  581113.65  4194415.74  67.49  198.99  4.8
RE DISCCART  581118.65  4194415.86  67.40  198.99  4.8
RE DISCCART  581123.64  4194415.98  67.31  198.99  4.8
RE DISCCART  581128.64  4194416.10  67.21  198.99  4.8
RE DISCCART  581133.64  4194416.22  67.11  198.99  4.8
RE DISCCART  581138.64  4194416.34  67.01  198.99  4.8
RE DISCCART  581093.53  4194420.26  67.79  198.99  4.8
RE DISCCART  581098.53  4194420.38  67.74  198.99  4.8
RE DISCCART  581103.53  4194420.50  67.69  198.99  4.8
RE DISCCART  581108.53  4194420.62  67.63  198.99  4.8
RE DISCCART  581113.53  4194420.74  67.56  198.99  4.8
RE DISCCART  581118.53  4194420.86  67.47  198.99  4.8
RE DISCCART  581123.53  4194420.98  67.37  198.99  4.8
RE DISCCART  581128.52  4194421.10  67.26  198.99  4.8
RE DISCCART  581133.52  4194421.22  67.15  198.99  4.8
RE DISCCART  581138.52  4194421.34  67.04  198.99  4.8
RE DISCCART  581143.52  4194421.46  66.94  198.99  4.8
RE DISCCART  581148.52  4194421.58  66.84  198.99  4.8
RE DISCCART  581093.41  4194425.26  67.89  198.99  4.8
RE DISCCART  581098.41  4194425.38  67.84  198.99  4.8
RE DISCCART  581103.41  4194425.50  67.78  198.99  4.8
RE DISCCART  581108.41  4194425.62  67.70  198.99  4.8
```

```
RE DISCCART  581113.41  4194425.74  67.61  198.99  4.8
RE DISCCART  581118.41  4194425.86  67.51  198.99  4.8
RE DISCCART  581123.41  4194425.98  67.41  198.99  4.8
RE DISCCART  581128.40  4194426.10  67.31  198.99  4.8
RE DISCCART  581133.40  4194426.22  67.19  198.99  4.8
RE DISCCART  581138.40  4194426.34  67.07  198.99  4.8
RE DISCCART  581143.40  4194426.46  66.96  198.99  4.8
RE DISCCART  581148.40  4194426.58  66.87  198.99  4.8
RE DISCCART  581153.40  4194426.69  66.81  198.99  4.8
RE DISCCART  581158.40  4194426.81  66.73  198.99  4.8
RE DISCCART  581093.29  4194430.26  67.97  198.99  4.8
RE DISCCART  581098.29  4194430.38  67.90  198.99  4.8
RE DISCCART  581103.29  4194430.50  67.83  198.99  4.8
RE DISCCART  581108.29  4194430.62  67.75  198.99  4.8
RE DISCCART  581113.29  4194430.74  67.65  198.99  4.8
RE DISCCART  581118.29  4194430.86  67.55  198.99  4.8
RE DISCCART  581123.29  4194430.98  67.43  198.99  4.8
RE DISCCART  581128.28  4194431.10  67.33  198.99  4.8
RE DISCCART  581133.28  4194431.22  67.22  198.99  4.8
RE DISCCART  581138.28  4194431.34  67.12  198.99  4.8
RE DISCCART  581143.28  4194431.46  67.03  198.99  4.8
RE DISCCART  581148.28  4194431.57  66.94  198.99  4.8
RE DISCCART  581153.28  4194431.69  66.87  198.99  4.8
RE DISCCART  581158.28  4194431.81  66.78  198.99  4.8
RE DISCCART  581163.27  4194431.93  66.67  198.99  4.8
RE DISCCART  581168.27  4194432.05  66.55  198.99  4.8
RE DISCCART  581093.17  4194435.26  68.02  198.99  4.8
RE DISCCART  581098.17  4194435.38  67.92  198.99  4.8
RE DISCCART  581103.17  4194435.50  67.84  198.99  4.8
RE DISCCART  581108.17  4194435.62  67.77  198.99  4.8
RE DISCCART  581113.17  4194435.74  67.69  198.99  4.8
RE DISCCART  581118.17  4194435.86  67.57  198.99  4.8
RE DISCCART  581123.17  4194435.98  67.44  198.99  4.8
RE DISCCART  581128.17  4194436.10  67.34  198.99  4.8
RE DISCCART  581133.16  4194436.21  67.25  198.99  4.8
RE DISCCART  581138.16  4194436.33  67.18  198.99  4.8
RE DISCCART  581143.16  4194436.45  67.11  198.99  4.8
RE DISCCART  581148.16  4194436.57  67.03  198.99  4.8
RE DISCCART  581153.16  4194436.69  66.93  198.99  4.8
RE DISCCART  581158.16  4194436.81  66.82  198.99  4.8
RE DISCCART  581163.16  4194436.93  66.71  198.99  4.8
RE DISCCART  581168.15  4194437.05  66.57  198.99  4.8
RE DISCCART  581093.06  4194440.26  68.09  198.99  4.8
RE DISCCART  581098.05  4194440.38  67.98  198.99  4.8
RE DISCCART  581103.05  4194440.50  67.88  198.99  4.8
RE DISCCART  581108.05  4194440.61  67.79  198.99  4.8
RE DISCCART  581113.05  4194440.73  67.71  198.99  4.8
RE DISCCART  581118.05  4194440.85  67.60  198.99  4.8
RE DISCCART  581123.05  4194440.97  67.48  198.99  4.8
RE DISCCART  581128.05  4194441.09  67.39  198.99  4.8
RE DISCCART  581133.04  4194441.21  67.31  198.99  4.8
RE DISCCART  581138.04  4194441.33  67.25  198.99  4.8
RE DISCCART  581143.04  4194441.45  67.17  198.99  4.8
RE DISCCART  581148.04  4194441.57  67.08  198.99  4.8
```

```
RE DISCCART  581153.04  4194441.69  66.97  198.99  4.8
RE DISCCART  581158.04  4194441.81  66.86  198.99  4.8
RE DISCCART  581163.04  4194441.93  66.73  198.99  4.8
RE DISCCART  581168.03  4194442.05  66.60  198.99  4.8
RE DISCCART  581092.94  4194445.26  68.18  198.99  4.8
RE DISCCART  581097.93  4194445.37  68.06  198.99  4.8
RE DISCCART  581102.93  4194445.49  67.94  198.99  4.8
RE DISCCART  581107.93  4194445.61  67.82  198.99  4.8
RE DISCCART  581112.93  4194445.73  67.73  198.99  4.8
RE DISCCART  581117.93  4194445.85  67.63  198.99  4.8
RE DISCCART  581122.93  4194445.97  67.54  198.99  4.8
RE DISCCART  581127.93  4194446.09  67.48  198.99  4.8
RE DISCCART  581132.92  4194446.21  67.40  198.99  4.8
RE DISCCART  581137.92  4194446.33  67.32  198.99  4.8
RE DISCCART  581142.92  4194446.45  67.22  198.99  4.8
RE DISCCART  581147.92  4194446.57  67.12  198.99  4.8
RE DISCCART  581152.92  4194446.69  67.01  198.99  4.8
RE DISCCART  581157.92  4194446.81  66.88  198.99  4.8
RE DISCCART  581162.92  4194446.93  66.75  198.99  4.8
RE DISCCART  581167.91  4194447.05  66.64  198.99  4.8
RE DISCCART  581092.82  4194450.25  68.26  198.99  4.8
RE DISCCART  581097.82  4194450.37  68.13  198.99  4.8
RE DISCCART  581102.81  4194450.49  67.99  198.99  4.8
RE DISCCART  581107.81  4194450.61  67.87  198.99  4.8
RE DISCCART  581112.81  4194450.73  67.77  198.99  4.8
RE DISCCART  581117.81  4194450.85  67.69  198.99  4.8
RE DISCCART  581122.81  4194450.97  67.61  198.99  4.8
RE DISCCART  581127.81  4194451.09  67.55  198.99  4.8
RE DISCCART  581132.81  4194451.21  67.47  198.99  4.8
RE DISCCART  581137.80  4194451.33  67.36  198.99  4.8
RE DISCCART  581142.80  4194451.45  67.25  198.99  4.8
RE DISCCART  581147.80  4194451.57  67.14  198.99  4.8
RE DISCCART  581152.80  4194451.69  67.03  198.99  4.8
RE DISCCART  581157.80  4194451.81  66.91  198.99  4.8
RE DISCCART  581162.80  4194451.93  66.79  198.99  4.8
RE DISCCART  581167.79  4194452.05  66.69  198.99  4.8
RE DISCCART  581092.70  4194455.25  68.31  198.99  4.8
RE DISCCART  581097.69  4194455.37  68.18  198.99  4.8
RE DISCCART  581102.69  4194455.49  68.05  198.99  4.8
RE DISCCART  581107.69  4194455.61  67.92  198.99  4.8
RE DISCCART  581112.69  4194455.73  67.83  198.99  4.8
RE DISCCART  581117.69  4194455.85  67.76  198.99  4.8
RE DISCCART  581122.69  4194455.97  67.69  198.99  4.8
RE DISCCART  581127.69  4194456.09  67.61  198.99  4.8
RE DISCCART  581132.68  4194456.21  67.51  198.99  4.8
RE DISCCART  581137.68  4194456.33  67.39  198.99  4.8
RE DISCCART  581142.68  4194456.45  67.27  198.99  4.8
RE DISCCART  581147.68  4194456.57  67.15  198.99  4.8
RE DISCCART  581152.68  4194456.69  67.04  198.99  4.8
RE DISCCART  581157.68  4194456.81  66.94  198.99  4.8
RE DISCCART  581162.68  4194456.93  66.84  198.99  4.8
RE DISCCART  581167.67  4194457.05  66.74  198.99  4.8
RE DISCCART  581092.58  4194460.25  68.36  198.99  4.8
RE DISCCART  581097.58  4194460.37  68.23  198.99  4.8
```

```
RE DISCCART  581102.57  4194460.49  68.09  198.99  4.8
RE DISCCART  581107.57  4194460.61  67.97  198.99  4.8
RE DISCCART  581112.57  4194460.73  67.88  198.99  4.8
RE DISCCART  581117.57  4194460.85  67.80  198.99  4.8
RE DISCCART  581122.57  4194460.97  67.73  198.99  4.8
RE DISCCART  581127.57  4194461.09  67.64  198.99  4.8
RE DISCCART  581132.57  4194461.21  67.53  198.99  4.8
RE DISCCART  581137.56  4194461.33  67.41  198.99  4.8
RE DISCCART  581142.56  4194461.45  67.29  198.99  4.8
RE DISCCART  581147.56  4194461.57  67.17  198.99  4.8
RE DISCCART  581152.56  4194461.69  67.08  198.99  4.8
RE DISCCART  581157.56  4194461.81  66.98  198.99  4.8
RE DISCCART  581162.56  4194461.92  66.89  198.99  4.8
RE DISCCART  581167.56  4194462.04  66.78  198.99  4.8
RE DISCCART  581092.46  4194465.25  68.39  198.99  4.8
RE DISCCART  581097.46  4194465.37  68.27  198.99  4.8
RE DISCCART  581102.45  4194465.49  68.14  198.99  4.8
RE DISCCART  581107.45  4194465.61  68.01  198.99  4.8
RE DISCCART  581112.45  4194465.73  67.92  198.99  4.8
RE DISCCART  581117.45  4194465.85  67.82  198.99  4.8
RE DISCCART  581122.45  4194465.97  67.73  198.99  4.8
RE DISCCART  581127.45  4194466.09  67.64  198.99  4.8
RE DISCCART  581132.45  4194466.21  67.53  198.99  4.8
RE DISCCART  581137.44  4194466.32  67.42  198.99  4.8
RE DISCCART  581142.44  4194466.45  67.31  198.99  4.8
RE DISCCART  581147.44  4194466.56  67.21  198.99  4.8
RE DISCCART  581152.44  4194466.68  67.12  198.99  4.8
RE DISCCART  581157.44  4194466.80  67.02  198.99  4.8
RE DISCCART  581162.44  4194466.92  66.93  198.99  4.8
RE DISCCART  581167.44  4194467.04  66.82  198.99  4.8
RE DISCCART  581092.34  4194470.25  68.40  198.99  4.8
RE DISCCART  581097.34  4194470.37  68.28  198.99  4.8
RE DISCCART  581102.34  4194470.49  68.15  198.99  4.8
RE DISCCART  581107.33  4194470.61  68.04  198.99  4.8
RE DISCCART  581112.33  4194470.73  67.94  198.99  4.8
RE DISCCART  581117.33  4194470.85  67.84  198.99  4.8
RE DISCCART  581122.33  4194470.97  67.74  198.99  4.8
RE DISCCART  581127.33  4194471.09  67.64  198.99  4.8
RE DISCCART  581132.33  4194471.20  67.53  198.99  4.8
RE DISCCART  581137.33  4194471.32  67.41  198.99  4.8
RE DISCCART  581142.32  4194471.44  67.31  198.99  4.8
RE DISCCART  581147.32  4194471.56  67.21  198.99  4.8
RE DISCCART  581152.32  4194471.68  67.13  198.99  4.8
RE DISCCART  581157.32  4194471.80  67.04  198.99  4.8
RE DISCCART  581162.32  4194471.92  66.93  198.99  4.8
RE DISCCART  581167.32  4194472.04  66.81  198.99  4.8
RE DISCCART  581092.22  4194475.25  68.34  198.99  4.8
RE DISCCART  581097.22  4194475.37  68.24  198.99  4.8
RE DISCCART  581102.22  4194475.49  68.13  198.99  4.8
RE DISCCART  581107.21  4194475.61  68.03  198.99  4.8
RE DISCCART  581112.21  4194475.72  67.94  198.99  4.8
RE DISCCART  581117.21  4194475.84  67.84  198.99  4.8
RE DISCCART  581122.21  4194475.96  67.74  198.99  4.8
RE DISCCART  581127.21  4194476.08  67.64  198.99  4.8
```

```
RE DISCCART  581132.21  4194476.20  67.53  198.99  4.8
RE DISCCART  581137.21  4194476.32  67.40  198.99  4.8
RE DISCCART  581142.20  4194476.44  67.29  198.99  4.8
RE DISCCART  581147.20  4194476.56  67.19  198.99  4.8
RE DISCCART  581152.20  4194476.68  67.12  198.99  4.8
RE DISCCART  581157.20  4194476.80  67.02  198.99  4.8
RE DISCCART  581162.20  4194476.92  66.90  198.99  4.8
RE DISCCART  581167.20  4194477.04  66.78  198.99  4.8
RE DISCCART  581092.10  4194480.25  68.28  198.99  4.8
RE DISCCART  581097.10  4194480.36  68.19  198.99  4.8
RE DISCCART  581102.10  4194480.48  68.10  198.99  4.8
RE DISCCART  581107.09  4194480.60  68.01  198.99  4.8
RE DISCCART  581112.09  4194480.72  67.93  198.99  4.8
RE DISCCART  581117.09  4194480.84  67.84  198.99  4.8
RE DISCCART  581122.09  4194480.96  67.74  198.99  4.8
RE DISCCART  581127.09  4194481.08  67.64  198.99  4.8
RE DISCCART  581132.09  4194481.20  67.53  198.99  4.8
RE DISCCART  581137.09  4194481.32  67.39  198.99  4.8
RE DISCCART  581142.08  4194481.44  67.27  198.99  4.8
RE DISCCART  581147.08  4194481.56  67.16  198.99  4.8
RE DISCCART  581152.08  4194481.68  67.09  198.99  4.8
RE DISCCART  581157.08  4194481.80  66.99  198.99  4.8
RE DISCCART  581162.08  4194481.92  66.87  198.99  4.8
RE DISCCART  581167.08  4194482.04  66.77  198.99  4.8
RE DISCCART  581091.98  4194485.24  68.19  198.99  4.8
RE DISCCART  581096.98  4194485.36  68.12  198.99  4.8
RE DISCCART  581101.98  4194485.48  68.05  198.99  4.8
RE DISCCART  581106.98  4194485.60  67.97  198.99  4.8
RE DISCCART  581111.97  4194485.72  67.91  198.99  4.8
RE DISCCART  581116.97  4194485.84  67.83  198.99  4.8
RE DISCCART  581121.97  4194485.96  67.75  198.99  4.8
RE DISCCART  581126.97  4194486.08  67.64  198.99  4.8
RE DISCCART  581131.97  4194486.20  67.52  198.99  4.8
RE DISCCART  581136.97  4194486.32  67.39  198.99  4.8
RE DISCCART  581141.97  4194486.44  67.27  198.99  4.8
RE DISCCART  581146.96  4194486.56  67.15  198.99  4.8
RE DISCCART  581151.96  4194486.68  67.05  198.99  4.8
RE DISCCART  581156.96  4194486.80  66.95  198.99  4.8
RE DISCCART  581161.96  4194486.92  66.84  198.99  4.8
RE DISCCART  581166.96  4194487.04  66.79  198.99  4.8
RE DISCCART  581091.86  4194490.24  68.09  198.99  4.8
RE DISCCART  581096.86  4194490.36  68.04  198.99  4.8
RE DISCCART  581101.86  4194490.48  67.99  198.99  4.8
RE DISCCART  581106.86  4194490.60  67.93  198.99  4.8
RE DISCCART  581111.85  4194490.72  67.88  198.99  4.8
RE DISCCART  581116.85  4194490.84  67.81  198.99  4.8
RE DISCCART  581121.85  4194490.96  67.73  198.99  4.8
RE DISCCART  581126.85  4194491.08  67.63  198.99  4.8
RE DISCCART  581131.85  4194491.20  67.51  198.99  4.8
RE DISCCART  581136.85  4194491.32  67.38  198.99  4.8
RE DISCCART  581141.85  4194491.44  67.25  198.99  4.8
RE DISCCART  581146.84  4194491.56  67.12  198.99  4.8
RE DISCCART  581151.84  4194491.68  67.01  198.99  4.8
RE DISCCART  581156.84  4194491.80  66.93  198.99  4.8
```

```
RE DISCCART  581161.84  4194491.92  66.87  198.99  4.8
RE DISCCART  581166.84  4194492.04  66.87  198.99  4.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     265  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581104.13  4194395.51  67.46  198.99  7.8
RE DISCCART  581109.13  4194395.63  67.38  198.99  7.8
RE DISCCART  581114.13  4194395.75  67.30  198.99  7.8
RE DISCCART  581099.01  4194400.39  67.59  198.99  7.8
RE DISCCART  581104.01  4194400.51  67.50  198.99  7.8
RE DISCCART  581109.01  4194400.63  67.42  198.99  7.8
RE DISCCART  581114.01  4194400.75  67.32  198.99  7.8
RE DISCCART  581119.01  4194400.86  67.24  198.99  7.8
RE DISCCART  581093.89  4194405.27  67.68  198.99  7.8
RE DISCCART  581098.89  4194405.39  67.61  198.99  7.8
RE DISCCART  581103.89  4194405.51  67.51  198.99  7.8
RE DISCCART  581108.89  4194405.62  67.41  198.99  7.8
RE DISCCART  581113.89  4194405.74  67.31  198.99  7.8
RE DISCCART  581118.89  4194405.86  67.22  198.99  7.8
RE DISCCART  581093.77  4194410.27  67.70  198.99  7.8
RE DISCCART  581098.77  4194410.38  67.64  198.99  7.8
RE DISCCART  581103.77  4194410.50  67.56  198.99  7.8
RE DISCCART  581108.77  4194410.62  67.47  198.99  7.8
RE DISCCART  581113.77  4194410.74  67.39  198.99  7.8
RE DISCCART  581118.77  4194410.86  67.30  198.99  7.8
RE DISCCART  581123.76  4194410.98  67.21  198.99  7.8
RE DISCCART  581093.65  4194415.26  67.72  198.99  7.8
RE DISCCART  581098.65  4194415.38  67.67  198.99  7.8
RE DISCCART  581103.65  4194415.50  67.62  198.99  7.8
RE DISCCART  581108.65  4194415.62  67.56  198.99  7.8
RE DISCCART  581113.65  4194415.74  67.49  198.99  7.8
RE DISCCART  581118.65  4194415.86  67.40  198.99  7.8
RE DISCCART  581123.64  4194415.98  67.31  198.99  7.8
RE DISCCART  581128.64  4194416.10  67.21  198.99  7.8
RE DISCCART  581133.64  4194416.22  67.11  198.99  7.8
RE DISCCART  581138.64  4194416.34  67.01  198.99  7.8
RE DISCCART  581093.53  4194420.26  67.79  198.99  7.8
RE DISCCART  581098.53  4194420.38  67.74  198.99  7.8
RE DISCCART  581103.53  4194420.50  67.69  198.99  7.8
RE DISCCART  581108.53  4194420.62  67.63  198.99  7.8
RE DISCCART  581113.53  4194420.74  67.56  198.99  7.8
RE DISCCART  581118.53  4194420.86  67.47  198.99  7.8
RE DISCCART  581123.53  4194420.98  67.37  198.99  7.8
RE DISCCART  581128.52  4194421.10  67.26  198.99  7.8
RE DISCCART  581133.52  4194421.22  67.15  198.99  7.8
RE DISCCART  581138.52  4194421.34  67.04  198.99  7.8
RE DISCCART  581143.52  4194421.46  66.94  198.99  7.8
RE DISCCART  581148.52  4194421.58  66.84  198.99  7.8
RE DISCCART  581093.41  4194425.26  67.89  198.99  7.8
RE DISCCART  581098.41  4194425.38  67.84  198.99  7.8
RE DISCCART  581103.41  4194425.50  67.78  198.99  7.8
RE DISCCART  581108.41  4194425.62  67.70  198.99  7.8
```

```
RE DISCCART  581113.41  4194425.74  67.61  198.99  7.8
RE DISCCART  581118.41  4194425.86  67.51  198.99  7.8
RE DISCCART  581123.41  4194425.98  67.41  198.99  7.8
RE DISCCART  581128.40  4194426.10  67.31  198.99  7.8
RE DISCCART  581133.40  4194426.22  67.19  198.99  7.8
RE DISCCART  581138.40  4194426.34  67.07  198.99  7.8
RE DISCCART  581143.40  4194426.46  66.96  198.99  7.8
RE DISCCART  581148.40  4194426.58  66.87  198.99  7.8
RE DISCCART  581153.40  4194426.69  66.81  198.99  7.8
RE DISCCART  581158.40  4194426.81  66.73  198.99  7.8
RE DISCCART  581093.29  4194430.26  67.97  198.99  7.8
RE DISCCART  581098.29  4194430.38  67.90  198.99  7.8
RE DISCCART  581103.29  4194430.50  67.83  198.99  7.8
RE DISCCART  581108.29  4194430.62  67.75  198.99  7.8
RE DISCCART  581113.29  4194430.74  67.65  198.99  7.8
RE DISCCART  581118.29  4194430.86  67.55  198.99  7.8
RE DISCCART  581123.29  4194430.98  67.43  198.99  7.8
RE DISCCART  581128.28  4194431.10  67.33  198.99  7.8
RE DISCCART  581133.28  4194431.22  67.22  198.99  7.8
RE DISCCART  581138.28  4194431.34  67.12  198.99  7.8
RE DISCCART  581143.28  4194431.46  67.03  198.99  7.8
RE DISCCART  581148.28  4194431.57  66.94  198.99  7.8
RE DISCCART  581153.28  4194431.69  66.87  198.99  7.8
RE DISCCART  581158.28  4194431.81  66.78  198.99  7.8
RE DISCCART  581163.27  4194431.93  66.67  198.99  7.8
RE DISCCART  581168.27  4194432.05  66.55  198.99  7.8
RE DISCCART  581093.17  4194435.26  68.02  198.99  7.8
RE DISCCART  581098.17  4194435.38  67.92  198.99  7.8
RE DISCCART  581103.17  4194435.50  67.84  198.99  7.8
RE DISCCART  581108.17  4194435.62  67.77  198.99  7.8
RE DISCCART  581113.17  4194435.74  67.69  198.99  7.8
RE DISCCART  581118.17  4194435.86  67.57  198.99  7.8
RE DISCCART  581123.17  4194435.98  67.44  198.99  7.8
RE DISCCART  581128.17  4194436.10  67.34  198.99  7.8
RE DISCCART  581133.16  4194436.21  67.25  198.99  7.8
RE DISCCART  581138.16  4194436.33  67.18  198.99  7.8
RE DISCCART  581143.16  4194436.45  67.11  198.99  7.8
RE DISCCART  581148.16  4194436.57  67.03  198.99  7.8
RE DISCCART  581153.16  4194436.69  66.93  198.99  7.8
RE DISCCART  581158.16  4194436.81  66.82  198.99  7.8
RE DISCCART  581163.16  4194436.93  66.71  198.99  7.8
RE DISCCART  581168.15  4194437.05  66.57  198.99  7.8
RE DISCCART  581093.06  4194440.26  68.09  198.99  7.8
RE DISCCART  581098.05  4194440.38  67.98  198.99  7.8
RE DISCCART  581103.05  4194440.50  67.88  198.99  7.8
RE DISCCART  581108.05  4194440.61  67.79  198.99  7.8
RE DISCCART  581113.05  4194440.73  67.71  198.99  7.8
RE DISCCART  581118.05  4194440.85  67.60  198.99  7.8
RE DISCCART  581123.05  4194440.97  67.48  198.99  7.8
RE DISCCART  581128.05  4194441.09  67.39  198.99  7.8
RE DISCCART  581133.04  4194441.21  67.31  198.99  7.8
RE DISCCART  581138.04  4194441.33  67.25  198.99  7.8
RE DISCCART  581143.04  4194441.45  67.17  198.99  7.8
RE DISCCART  581148.04  4194441.57  67.08  198.99  7.8
```

```
RE DISCCART  581153.04  4194441.69  66.97  198.99  7.8
RE DISCCART  581158.04  4194441.81  66.86  198.99  7.8
RE DISCCART  581163.04  4194441.93  66.73  198.99  7.8
RE DISCCART  581168.03  4194442.05  66.60  198.99  7.8
RE DISCCART  581092.94  4194445.26  68.18  198.99  7.8
RE DISCCART  581097.93  4194445.37  68.06  198.99  7.8
RE DISCCART  581102.93  4194445.49  67.94  198.99  7.8
RE DISCCART  581107.93  4194445.61  67.82  198.99  7.8
RE DISCCART  581112.93  4194445.73  67.73  198.99  7.8
RE DISCCART  581117.93  4194445.85  67.63  198.99  7.8
RE DISCCART  581122.93  4194445.97  67.54  198.99  7.8
RE DISCCART  581127.93  4194446.09  67.48  198.99  7.8
RE DISCCART  581132.92  4194446.21  67.40  198.99  7.8
RE DISCCART  581137.92  4194446.33  67.32  198.99  7.8
RE DISCCART  581142.92  4194446.45  67.22  198.99  7.8
RE DISCCART  581147.92  4194446.57  67.12  198.99  7.8
RE DISCCART  581152.92  4194446.69  67.01  198.99  7.8
RE DISCCART  581157.92  4194446.81  66.88  198.99  7.8
RE DISCCART  581162.92  4194446.93  66.75  198.99  7.8
RE DISCCART  581167.91  4194447.05  66.64  198.99  7.8
RE DISCCART  581092.82  4194450.25  68.26  198.99  7.8
RE DISCCART  581097.82  4194450.37  68.13  198.99  7.8
RE DISCCART  581102.81  4194450.49  67.99  198.99  7.8
RE DISCCART  581107.81  4194450.61  67.87  198.99  7.8
RE DISCCART  581112.81  4194450.73  67.77  198.99  7.8
RE DISCCART  581117.81  4194450.85  67.69  198.99  7.8
RE DISCCART  581122.81  4194450.97  67.61  198.99  7.8
RE DISCCART  581127.81  4194451.09  67.55  198.99  7.8
RE DISCCART  581132.81  4194451.21  67.47  198.99  7.8
RE DISCCART  581137.80  4194451.33  67.36  198.99  7.8
RE DISCCART  581142.80  4194451.45  67.25  198.99  7.8
RE DISCCART  581147.80  4194451.57  67.14  198.99  7.8
RE DISCCART  581152.80  4194451.69  67.03  198.99  7.8
RE DISCCART  581157.80  4194451.81  66.91  198.99  7.8
RE DISCCART  581162.80  4194451.93  66.79  198.99  7.8
RE DISCCART  581167.79  4194452.05  66.69  198.99  7.8
RE DISCCART  581092.70  4194455.25  68.31  198.99  7.8
RE DISCCART  581097.69  4194455.37  68.18  198.99  7.8
RE DISCCART  581102.69  4194455.49  68.05  198.99  7.8
RE DISCCART  581107.69  4194455.61  67.92  198.99  7.8
RE DISCCART  581112.69  4194455.73  67.83  198.99  7.8
RE DISCCART  581117.69  4194455.85  67.76  198.99  7.8
RE DISCCART  581122.69  4194455.97  67.69  198.99  7.8
RE DISCCART  581127.69  4194456.09  67.61  198.99  7.8
RE DISCCART  581132.68  4194456.21  67.51  198.99  7.8
RE DISCCART  581137.68  4194456.33  67.39  198.99  7.8
RE DISCCART  581142.68  4194456.45  67.27  198.99  7.8
RE DISCCART  581147.68  4194456.57  67.15  198.99  7.8
RE DISCCART  581152.68  4194456.69  67.04  198.99  7.8
RE DISCCART  581157.68  4194456.81  66.94  198.99  7.8
RE DISCCART  581162.68  4194456.93  66.84  198.99  7.8
RE DISCCART  581167.67  4194457.05  66.74  198.99  7.8
RE DISCCART  581092.58  4194460.25  68.36  198.99  7.8
RE DISCCART  581097.58  4194460.37  68.23  198.99  7.8
```

```
RE DISCCART  581102.57  4194460.49  68.09  198.99  7.8
RE DISCCART  581107.57  4194460.61  67.97  198.99  7.8
RE DISCCART  581112.57  4194460.73  67.88  198.99  7.8
RE DISCCART  581117.57  4194460.85  67.80  198.99  7.8
RE DISCCART  581122.57  4194460.97  67.73  198.99  7.8
RE DISCCART  581127.57  4194461.09  67.64  198.99  7.8
RE DISCCART  581132.57  4194461.21  67.53  198.99  7.8
RE DISCCART  581137.56  4194461.33  67.41  198.99  7.8
RE DISCCART  581142.56  4194461.45  67.29  198.99  7.8
RE DISCCART  581147.56  4194461.57  67.17  198.99  7.8
RE DISCCART  581152.56  4194461.69  67.08  198.99  7.8
RE DISCCART  581157.56  4194461.81  66.98  198.99  7.8
RE DISCCART  581162.56  4194461.92  66.89  198.99  7.8
RE DISCCART  581167.56  4194462.04  66.78  198.99  7.8
RE DISCCART  581092.46  4194465.25  68.39  198.99  7.8
RE DISCCART  581097.46  4194465.37  68.27  198.99  7.8
RE DISCCART  581102.45  4194465.49  68.14  198.99  7.8
RE DISCCART  581107.45  4194465.61  68.01  198.99  7.8
RE DISCCART  581112.45  4194465.73  67.92  198.99  7.8
RE DISCCART  581117.45  4194465.85  67.82  198.99  7.8
RE DISCCART  581122.45  4194465.97  67.73  198.99  7.8
RE DISCCART  581127.45  4194466.09  67.64  198.99  7.8
RE DISCCART  581132.45  4194466.21  67.53  198.99  7.8
RE DISCCART  581137.44  4194466.32  67.42  198.99  7.8
RE DISCCART  581142.44  4194466.45  67.31  198.99  7.8
RE DISCCART  581147.44  4194466.56  67.21  198.99  7.8
RE DISCCART  581152.44  4194466.68  67.12  198.99  7.8
RE DISCCART  581157.44  4194466.80  67.02  198.99  7.8
RE DISCCART  581162.44  4194466.92  66.93  198.99  7.8
RE DISCCART  581167.44  4194467.04  66.82  198.99  7.8
RE DISCCART  581092.34  4194470.25  68.40  198.99  7.8
RE DISCCART  581097.34  4194470.37  68.28  198.99  7.8
RE DISCCART  581102.34  4194470.49  68.15  198.99  7.8
RE DISCCART  581107.33  4194470.61  68.04  198.99  7.8
RE DISCCART  581112.33  4194470.73  67.94  198.99  7.8
RE DISCCART  581117.33  4194470.85  67.84  198.99  7.8
RE DISCCART  581122.33  4194470.97  67.74  198.99  7.8
RE DISCCART  581127.33  4194471.09  67.64  198.99  7.8
RE DISCCART  581132.33  4194471.20  67.53  198.99  7.8
RE DISCCART  581137.33  4194471.32  67.41  198.99  7.8
RE DISCCART  581142.32  4194471.44  67.31  198.99  7.8
RE DISCCART  581147.32  4194471.56  67.21  198.99  7.8
RE DISCCART  581152.32  4194471.68  67.13  198.99  7.8
RE DISCCART  581157.32  4194471.80  67.04  198.99  7.8
RE DISCCART  581162.32  4194471.92  66.93  198.99  7.8
RE DISCCART  581167.32  4194472.04  66.81  198.99  7.8
RE DISCCART  581092.22  4194475.25  68.34  198.99  7.8
RE DISCCART  581097.22  4194475.37  68.24  198.99  7.8
RE DISCCART  581102.22  4194475.49  68.13  198.99  7.8
RE DISCCART  581107.21  4194475.61  68.03  198.99  7.8
RE DISCCART  581112.21  4194475.72  67.94  198.99  7.8
RE DISCCART  581117.21  4194475.84  67.84  198.99  7.8
RE DISCCART  581122.21  4194475.96  67.74  198.99  7.8
RE DISCCART  581127.21  4194476.08  67.64  198.99  7.8
```

```
RE DISCCART  581132.21  4194476.20  67.53  198.99  7.8
RE DISCCART  581137.21  4194476.32  67.40  198.99  7.8
RE DISCCART  581142.20  4194476.44  67.29  198.99  7.8
RE DISCCART  581147.20  4194476.56  67.19  198.99  7.8
RE DISCCART  581152.20  4194476.68  67.12  198.99  7.8
RE DISCCART  581157.20  4194476.80  67.02  198.99  7.8
RE DISCCART  581162.20  4194476.92  66.90  198.99  7.8
RE DISCCART  581167.20  4194477.04  66.78  198.99  7.8
RE DISCCART  581092.10  4194480.25  68.28  198.99  7.8
RE DISCCART  581097.10  4194480.36  68.19  198.99  7.8
RE DISCCART  581102.10  4194480.48  68.10  198.99  7.8
RE DISCCART  581107.09  4194480.60  68.01  198.99  7.8
RE DISCCART  581112.09  4194480.72  67.93  198.99  7.8
RE DISCCART  581117.09  4194480.84  67.84  198.99  7.8
RE DISCCART  581122.09  4194480.96  67.74  198.99  7.8
RE DISCCART  581127.09  4194481.08  67.64  198.99  7.8
RE DISCCART  581132.09  4194481.20  67.53  198.99  7.8
RE DISCCART  581137.09  4194481.32  67.39  198.99  7.8
RE DISCCART  581142.08  4194481.44  67.27  198.99  7.8
RE DISCCART  581147.08  4194481.56  67.16  198.99  7.8
RE DISCCART  581152.08  4194481.68  67.09  198.99  7.8
RE DISCCART  581157.08  4194481.80  66.99  198.99  7.8
RE DISCCART  581162.08  4194481.92  66.87  198.99  7.8
RE DISCCART  581167.08  4194482.04  66.77  198.99  7.8
RE DISCCART  581091.98  4194485.24  68.19  198.99  7.8
RE DISCCART  581096.98  4194485.36  68.12  198.99  7.8
RE DISCCART  581101.98  4194485.48  68.05  198.99  7.8
RE DISCCART  581106.98  4194485.60  67.97  198.99  7.8
RE DISCCART  581111.97  4194485.72  67.91  198.99  7.8
RE DISCCART  581116.97  4194485.84  67.83  198.99  7.8
RE DISCCART  581121.97  4194485.96  67.75  198.99  7.8
RE DISCCART  581126.97  4194486.08  67.64  198.99  7.8
RE DISCCART  581131.97  4194486.20  67.52  198.99  7.8
RE DISCCART  581136.97  4194486.32  67.39  198.99  7.8
RE DISCCART  581141.97  4194486.44  67.27  198.99  7.8
RE DISCCART  581146.96  4194486.56  67.15  198.99  7.8
RE DISCCART  581151.96  4194486.68  67.05  198.99  7.8
RE DISCCART  581156.96  4194486.80  66.95  198.99  7.8
RE DISCCART  581161.96  4194486.92  66.84  198.99  7.8
RE DISCCART  581166.96  4194487.04  66.79  198.99  7.8
RE DISCCART  581091.86  4194490.24  68.09  198.99  7.8
RE DISCCART  581096.86  4194490.36  68.04  198.99  7.8
RE DISCCART  581101.86  4194490.48  67.99  198.99  7.8
RE DISCCART  581106.86  4194490.60  67.93  198.99  7.8
RE DISCCART  581111.85  4194490.72  67.88  198.99  7.8
RE DISCCART  581116.85  4194490.84  67.81  198.99  7.8
RE DISCCART  581121.85  4194490.96  67.73  198.99  7.8
RE DISCCART  581126.85  4194491.08  67.63  198.99  7.8
RE DISCCART  581131.85  4194491.20  67.51  198.99  7.8
RE DISCCART  581136.85  4194491.32  67.38  198.99  7.8
RE DISCCART  581141.85  4194491.44  67.25  198.99  7.8
RE DISCCART  581146.84  4194491.56  67.12  198.99  7.8
RE DISCCART  581151.84  4194491.68  67.01  198.99  7.8
RE DISCCART  581156.84  4194491.80  66.93  198.99  7.8
```

```
RE DISCCART  581161.84  4194491.92  66.87  198.99  7.8
RE DISCCART  581166.84  4194492.04  66.87  198.99  7.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     265  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581104.13  4194395.51  67.46  198.99  10.8
RE DISCCART  581109.13  4194395.63  67.38  198.99  10.8
RE DISCCART  581114.13  4194395.75  67.30  198.99  10.8
RE DISCCART  581099.01  4194400.39  67.59  198.99  10.8
RE DISCCART  581104.01  4194400.51  67.50  198.99  10.8
RE DISCCART  581109.01  4194400.63  67.42  198.99  10.8
RE DISCCART  581114.01  4194400.75  67.32  198.99  10.8
RE DISCCART  581119.01  4194400.86  67.24  198.99  10.8
RE DISCCART  581093.89  4194405.27  67.68  198.99  10.8
RE DISCCART  581098.89  4194405.39  67.61  198.99  10.8
RE DISCCART  581103.89  4194405.51  67.51  198.99  10.8
RE DISCCART  581108.89  4194405.62  67.41  198.99  10.8
RE DISCCART  581113.89  4194405.74  67.31  198.99  10.8
RE DISCCART  581118.89  4194405.86  67.22  198.99  10.8
RE DISCCART  581093.77  4194410.27  67.70  198.99  10.8
RE DISCCART  581098.77  4194410.38  67.64  198.99  10.8
RE DISCCART  581103.77  4194410.50  67.56  198.99  10.8
RE DISCCART  581108.77  4194410.62  67.47  198.99  10.8
RE DISCCART  581113.77  4194410.74  67.39  198.99  10.8
RE DISCCART  581118.77  4194410.86  67.30  198.99  10.8
RE DISCCART  581123.76  4194410.98  67.21  198.99  10.8
RE DISCCART  581093.65  4194415.26  67.72  198.99  10.8
RE DISCCART  581098.65  4194415.38  67.67  198.99  10.8
RE DISCCART  581103.65  4194415.50  67.62  198.99  10.8
RE DISCCART  581108.65  4194415.62  67.56  198.99  10.8
RE DISCCART  581113.65  4194415.74  67.49  198.99  10.8
RE DISCCART  581118.65  4194415.86  67.40  198.99  10.8
RE DISCCART  581123.64  4194415.98  67.31  198.99  10.8
RE DISCCART  581128.64  4194416.10  67.21  198.99  10.8
RE DISCCART  581133.64  4194416.22  67.11  198.99  10.8
RE DISCCART  581138.64  4194416.34  67.01  198.99  10.8
RE DISCCART  581093.53  4194420.26  67.79  198.99  10.8
RE DISCCART  581098.53  4194420.38  67.74  198.99  10.8
RE DISCCART  581103.53  4194420.50  67.69  198.99  10.8
RE DISCCART  581108.53  4194420.62  67.63  198.99  10.8
RE DISCCART  581113.53  4194420.74  67.56  198.99  10.8
RE DISCCART  581118.53  4194420.86  67.47  198.99  10.8
RE DISCCART  581123.53  4194420.98  67.37  198.99  10.8
RE DISCCART  581128.52  4194421.10  67.26  198.99  10.8
RE DISCCART  581133.52  4194421.22  67.15  198.99  10.8
RE DISCCART  581138.52  4194421.34  67.04  198.99  10.8
RE DISCCART  581143.52  4194421.46  66.94  198.99  10.8
RE DISCCART  581148.52  4194421.58  66.84  198.99  10.8
RE DISCCART  581093.41  4194425.26  67.89  198.99  10.8
RE DISCCART  581098.41  4194425.38  67.84  198.99  10.8
RE DISCCART  581103.41  4194425.50  67.78  198.99  10.8
RE DISCCART  581108.41  4194425.62  67.70  198.99  10.8
```

```
RE DISCCART  581113.41  4194425.74  67.61  198.99  10.8
RE DISCCART  581118.41  4194425.86  67.51  198.99  10.8
RE DISCCART  581123.41  4194425.98  67.41  198.99  10.8
RE DISCCART  581128.40  4194426.10  67.31  198.99  10.8
RE DISCCART  581133.40  4194426.22  67.19  198.99  10.8
RE DISCCART  581138.40  4194426.34  67.07  198.99  10.8
RE DISCCART  581143.40  4194426.46  66.96  198.99  10.8
RE DISCCART  581148.40  4194426.58  66.87  198.99  10.8
RE DISCCART  581153.40  4194426.69  66.81  198.99  10.8
RE DISCCART  581158.40  4194426.81  66.73  198.99  10.8
RE DISCCART  581093.29  4194430.26  67.97  198.99  10.8
RE DISCCART  581098.29  4194430.38  67.90  198.99  10.8
RE DISCCART  581103.29  4194430.50  67.83  198.99  10.8
RE DISCCART  581108.29  4194430.62  67.75  198.99  10.8
RE DISCCART  581113.29  4194430.74  67.65  198.99  10.8
RE DISCCART  581118.29  4194430.86  67.55  198.99  10.8
RE DISCCART  581123.29  4194430.98  67.43  198.99  10.8
RE DISCCART  581128.28  4194431.10  67.33  198.99  10.8
RE DISCCART  581133.28  4194431.22  67.22  198.99  10.8
RE DISCCART  581138.28  4194431.34  67.12  198.99  10.8
RE DISCCART  581143.28  4194431.46  67.03  198.99  10.8
RE DISCCART  581148.28  4194431.57  66.94  198.99  10.8
RE DISCCART  581153.28  4194431.69  66.87  198.99  10.8
RE DISCCART  581158.28  4194431.81  66.78  198.99  10.8
RE DISCCART  581163.27  4194431.93  66.67  198.99  10.8
RE DISCCART  581168.27  4194432.05  66.55  198.99  10.8
RE DISCCART  581093.17  4194435.26  68.02  198.99  10.8
RE DISCCART  581098.17  4194435.38  67.92  198.99  10.8
RE DISCCART  581103.17  4194435.50  67.84  198.99  10.8
RE DISCCART  581108.17  4194435.62  67.77  198.99  10.8
RE DISCCART  581113.17  4194435.74  67.69  198.99  10.8
RE DISCCART  581118.17  4194435.86  67.57  198.99  10.8
RE DISCCART  581123.17  4194435.98  67.44  198.99  10.8
RE DISCCART  581128.17  4194436.10  67.34  198.99  10.8
RE DISCCART  581133.16  4194436.21  67.25  198.99  10.8
RE DISCCART  581138.16  4194436.33  67.18  198.99  10.8
RE DISCCART  581143.16  4194436.45  67.11  198.99  10.8
RE DISCCART  581148.16  4194436.57  67.03  198.99  10.8
RE DISCCART  581153.16  4194436.69  66.93  198.99  10.8
RE DISCCART  581158.16  4194436.81  66.82  198.99  10.8
RE DISCCART  581163.16  4194436.93  66.71  198.99  10.8
RE DISCCART  581168.15  4194437.05  66.57  198.99  10.8
RE DISCCART  581093.06  4194440.26  68.09  198.99  10.8
RE DISCCART  581098.05  4194440.38  67.98  198.99  10.8
RE DISCCART  581103.05  4194440.50  67.88  198.99  10.8
RE DISCCART  581108.05  4194440.61  67.79  198.99  10.8
RE DISCCART  581113.05  4194440.73  67.71  198.99  10.8
RE DISCCART  581118.05  4194440.85  67.60  198.99  10.8
RE DISCCART  581123.05  4194440.97  67.48  198.99  10.8
RE DISCCART  581128.05  4194441.09  67.39  198.99  10.8
RE DISCCART  581133.04  4194441.21  67.31  198.99  10.8
RE DISCCART  581138.04  4194441.33  67.25  198.99  10.8
RE DISCCART  581143.04  4194441.45  67.17  198.99  10.8
RE DISCCART  581148.04  4194441.57  67.08  198.99  10.8
```

```
RE DISCCART  581153.04  4194441.69  66.97  198.99  10.8
RE DISCCART  581158.04  4194441.81  66.86  198.99  10.8
RE DISCCART  581163.04  4194441.93  66.73  198.99  10.8
RE DISCCART  581168.03  4194442.05  66.60  198.99  10.8
RE DISCCART  581092.94  4194445.26  68.18  198.99  10.8
RE DISCCART  581097.93  4194445.37  68.06  198.99  10.8
RE DISCCART  581102.93  4194445.49  67.94  198.99  10.8
RE DISCCART  581107.93  4194445.61  67.82  198.99  10.8
RE DISCCART  581112.93  4194445.73  67.73  198.99  10.8
RE DISCCART  581117.93  4194445.85  67.63  198.99  10.8
RE DISCCART  581122.93  4194445.97  67.54  198.99  10.8
RE DISCCART  581127.93  4194446.09  67.48  198.99  10.8
RE DISCCART  581132.92  4194446.21  67.40  198.99  10.8
RE DISCCART  581137.92  4194446.33  67.32  198.99  10.8
RE DISCCART  581142.92  4194446.45  67.22  198.99  10.8
RE DISCCART  581147.92  4194446.57  67.12  198.99  10.8
RE DISCCART  581152.92  4194446.69  67.01  198.99  10.8
RE DISCCART  581157.92  4194446.81  66.88  198.99  10.8
RE DISCCART  581162.92  4194446.93  66.75  198.99  10.8
RE DISCCART  581167.91  4194447.05  66.64  198.99  10.8
RE DISCCART  581092.82  4194450.25  68.26  198.99  10.8
RE DISCCART  581097.82  4194450.37  68.13  198.99  10.8
RE DISCCART  581102.81  4194450.49  67.99  198.99  10.8
RE DISCCART  581107.81  4194450.61  67.87  198.99  10.8
RE DISCCART  581112.81  4194450.73  67.77  198.99  10.8
RE DISCCART  581117.81  4194450.85  67.69  198.99  10.8
RE DISCCART  581122.81  4194450.97  67.61  198.99  10.8
RE DISCCART  581127.81  4194451.09  67.55  198.99  10.8
RE DISCCART  581132.81  4194451.21  67.47  198.99  10.8
RE DISCCART  581137.80  4194451.33  67.36  198.99  10.8
RE DISCCART  581142.80  4194451.45  67.25  198.99  10.8
RE DISCCART  581147.80  4194451.57  67.14  198.99  10.8
RE DISCCART  581152.80  4194451.69  67.03  198.99  10.8
RE DISCCART  581157.80  4194451.81  66.91  198.99  10.8
RE DISCCART  581162.80  4194451.93  66.79  198.99  10.8
RE DISCCART  581167.79  4194452.05  66.69  198.99  10.8
RE DISCCART  581092.70  4194455.25  68.31  198.99  10.8
RE DISCCART  581097.69  4194455.37  68.18  198.99  10.8
RE DISCCART  581102.69  4194455.49  68.05  198.99  10.8
RE DISCCART  581107.69  4194455.61  67.92  198.99  10.8
RE DISCCART  581112.69  4194455.73  67.83  198.99  10.8
RE DISCCART  581117.69  4194455.85  67.76  198.99  10.8
RE DISCCART  581122.69  4194455.97  67.69  198.99  10.8
RE DISCCART  581127.69  4194456.09  67.61  198.99  10.8
RE DISCCART  581132.68  4194456.21  67.51  198.99  10.8
RE DISCCART  581137.68  4194456.33  67.39  198.99  10.8
RE DISCCART  581142.68  4194456.45  67.27  198.99  10.8
RE DISCCART  581147.68  4194456.57  67.15  198.99  10.8
RE DISCCART  581152.68  4194456.69  67.04  198.99  10.8
RE DISCCART  581157.68  4194456.81  66.94  198.99  10.8
RE DISCCART  581162.68  4194456.93  66.84  198.99  10.8
RE DISCCART  581167.67  4194457.05  66.74  198.99  10.8
RE DISCCART  581092.58  4194460.25  68.36  198.99  10.8
RE DISCCART  581097.58  4194460.37  68.23  198.99  10.8
```

```
RE DISCCART  581102.57  4194460.49  68.09  198.99  10.8
RE DISCCART  581107.57  4194460.61  67.97  198.99  10.8
RE DISCCART  581112.57  4194460.73  67.88  198.99  10.8
RE DISCCART  581117.57  4194460.85  67.80  198.99  10.8
RE DISCCART  581122.57  4194460.97  67.73  198.99  10.8
RE DISCCART  581127.57  4194461.09  67.64  198.99  10.8
RE DISCCART  581132.57  4194461.21  67.53  198.99  10.8
RE DISCCART  581137.56  4194461.33  67.41  198.99  10.8
RE DISCCART  581142.56  4194461.45  67.29  198.99  10.8
RE DISCCART  581147.56  4194461.57  67.17  198.99  10.8
RE DISCCART  581152.56  4194461.69  67.08  198.99  10.8
RE DISCCART  581157.56  4194461.81  66.98  198.99  10.8
RE DISCCART  581162.56  4194461.92  66.89  198.99  10.8
RE DISCCART  581167.56  4194462.04  66.78  198.99  10.8
RE DISCCART  581092.46  4194465.25  68.39  198.99  10.8
RE DISCCART  581097.46  4194465.37  68.27  198.99  10.8
RE DISCCART  581102.45  4194465.49  68.14  198.99  10.8
RE DISCCART  581107.45  4194465.61  68.01  198.99  10.8
RE DISCCART  581112.45  4194465.73  67.92  198.99  10.8
RE DISCCART  581117.45  4194465.85  67.82  198.99  10.8
RE DISCCART  581122.45  4194465.97  67.73  198.99  10.8
RE DISCCART  581127.45  4194466.09  67.64  198.99  10.8
RE DISCCART  581132.45  4194466.21  67.53  198.99  10.8
RE DISCCART  581137.44  4194466.32  67.42  198.99  10.8
RE DISCCART  581142.44  4194466.45  67.31  198.99  10.8
RE DISCCART  581147.44  4194466.56  67.21  198.99  10.8
RE DISCCART  581152.44  4194466.68  67.12  198.99  10.8
RE DISCCART  581157.44  4194466.80  67.02  198.99  10.8
RE DISCCART  581162.44  4194466.92  66.93  198.99  10.8
RE DISCCART  581167.44  4194467.04  66.82  198.99  10.8
RE DISCCART  581092.34  4194470.25  68.40  198.99  10.8
RE DISCCART  581097.34  4194470.37  68.28  198.99  10.8
RE DISCCART  581102.34  4194470.49  68.15  198.99  10.8
RE DISCCART  581107.33  4194470.61  68.04  198.99  10.8
RE DISCCART  581112.33  4194470.73  67.94  198.99  10.8
RE DISCCART  581117.33  4194470.85  67.84  198.99  10.8
RE DISCCART  581122.33  4194470.97  67.74  198.99  10.8
RE DISCCART  581127.33  4194471.09  67.64  198.99  10.8
RE DISCCART  581132.33  4194471.20  67.53  198.99  10.8
RE DISCCART  581137.33  4194471.32  67.41  198.99  10.8
RE DISCCART  581142.32  4194471.44  67.31  198.99  10.8
RE DISCCART  581147.32  4194471.56  67.21  198.99  10.8
RE DISCCART  581152.32  4194471.68  67.13  198.99  10.8
RE DISCCART  581157.32  4194471.80  67.04  198.99  10.8
RE DISCCART  581162.32  4194471.92  66.93  198.99  10.8
RE DISCCART  581167.32  4194472.04  66.81  198.99  10.8
RE DISCCART  581092.22  4194475.25  68.34  198.99  10.8
RE DISCCART  581097.22  4194475.37  68.24  198.99  10.8
RE DISCCART  581102.22  4194475.49  68.13  198.99  10.8
RE DISCCART  581107.21  4194475.61  68.03  198.99  10.8
RE DISCCART  581112.21  4194475.72  67.94  198.99  10.8
RE DISCCART  581117.21  4194475.84  67.84  198.99  10.8
RE DISCCART  581122.21  4194475.96  67.74  198.99  10.8
RE DISCCART  581127.21  4194476.08  67.64  198.99  10.8
```

```
RE DISCCART  581132.21  4194476.20  67.53  198.99  10.8
RE DISCCART  581137.21  4194476.32  67.40  198.99  10.8
RE DISCCART  581142.20  4194476.44  67.29  198.99  10.8
RE DISCCART  581147.20  4194476.56  67.19  198.99  10.8
RE DISCCART  581152.20  4194476.68  67.12  198.99  10.8
RE DISCCART  581157.20  4194476.80  67.02  198.99  10.8
RE DISCCART  581162.20  4194476.92  66.90  198.99  10.8
RE DISCCART  581167.20  4194477.04  66.78  198.99  10.8
RE DISCCART  581092.10  4194480.25  68.28  198.99  10.8
RE DISCCART  581097.10  4194480.36  68.19  198.99  10.8
RE DISCCART  581102.10  4194480.48  68.10  198.99  10.8
RE DISCCART  581107.09  4194480.60  68.01  198.99  10.8
RE DISCCART  581112.09  4194480.72  67.93  198.99  10.8
RE DISCCART  581117.09  4194480.84  67.84  198.99  10.8
RE DISCCART  581122.09  4194480.96  67.74  198.99  10.8
RE DISCCART  581127.09  4194481.08  67.64  198.99  10.8
RE DISCCART  581132.09  4194481.20  67.53  198.99  10.8
RE DISCCART  581137.09  4194481.32  67.39  198.99  10.8
RE DISCCART  581142.08  4194481.44  67.27  198.99  10.8
RE DISCCART  581147.08  4194481.56  67.16  198.99  10.8
RE DISCCART  581152.08  4194481.68  67.09  198.99  10.8
RE DISCCART  581157.08  4194481.80  66.99  198.99  10.8
RE DISCCART  581162.08  4194481.92  66.87  198.99  10.8
RE DISCCART  581167.08  4194482.04  66.77  198.99  10.8
RE DISCCART  581091.98  4194485.24  68.19  198.99  10.8
RE DISCCART  581096.98  4194485.36  68.12  198.99  10.8
RE DISCCART  581101.98  4194485.48  68.05  198.99  10.8
RE DISCCART  581106.98  4194485.60  67.97  198.99  10.8
RE DISCCART  581111.97  4194485.72  67.91  198.99  10.8
RE DISCCART  581116.97  4194485.84  67.83  198.99  10.8
RE DISCCART  581121.97  4194485.96  67.75  198.99  10.8
RE DISCCART  581126.97  4194486.08  67.64  198.99  10.8
RE DISCCART  581131.97  4194486.20  67.52  198.99  10.8
RE DISCCART  581136.97  4194486.32  67.39  198.99  10.8
RE DISCCART  581141.97  4194486.44  67.27  198.99  10.8
RE DISCCART  581146.96  4194486.56  67.15  198.99  10.8
RE DISCCART  581151.96  4194486.68  67.05  198.99  10.8
RE DISCCART  581156.96  4194486.80  66.95  198.99  10.8
RE DISCCART  581161.96  4194486.92  66.84  198.99  10.8
RE DISCCART  581166.96  4194487.04  66.79  198.99  10.8
RE DISCCART  581091.86  4194490.24  68.09  198.99  10.8
RE DISCCART  581096.86  4194490.36  68.04  198.99  10.8
RE DISCCART  581101.86  4194490.48  67.99  198.99  10.8
RE DISCCART  581106.86  4194490.60  67.93  198.99  10.8
RE DISCCART  581111.85  4194490.72  67.88  198.99  10.8
RE DISCCART  581116.85  4194490.84  67.81  198.99  10.8
RE DISCCART  581121.85  4194490.96  67.73  198.99  10.8
RE DISCCART  581126.85  4194491.08  67.63  198.99  10.8
RE DISCCART  581131.85  4194491.20  67.51  198.99  10.8
RE DISCCART  581136.85  4194491.32  67.38  198.99  10.8
RE DISCCART  581141.85  4194491.44  67.25  198.99  10.8
RE DISCCART  581146.84  4194491.56  67.12  198.99  10.8
RE DISCCART  581151.84  4194491.68  67.01  198.99  10.8
RE DISCCART  581156.84  4194491.80  66.93  198.99  10.8
```

```
RE DISCCART  581161.84  4194491.92  66.87  198.99  10.8
RE DISCCART  581166.84  4194492.04  66.87  198.99  10.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     265  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581104.13  4194395.51  67.46  198.99  13.8
RE DISCCART  581109.13  4194395.63  67.38  198.99  13.8
RE DISCCART  581114.13  4194395.75  67.30  198.99  13.8
RE DISCCART  581099.01  4194400.39  67.59  198.99  13.8
RE DISCCART  581104.01  4194400.51  67.50  198.99  13.8
RE DISCCART  581109.01  4194400.63  67.42  198.99  13.8
RE DISCCART  581114.01  4194400.75  67.32  198.99  13.8
RE DISCCART  581119.01  4194400.86  67.24  198.99  13.8
RE DISCCART  581093.89  4194405.27  67.68  198.99  13.8
RE DISCCART  581098.89  4194405.39  67.61  198.99  13.8
RE DISCCART  581103.89  4194405.51  67.51  198.99  13.8
RE DISCCART  581108.89  4194405.62  67.41  198.99  13.8
RE DISCCART  581113.89  4194405.74  67.31  198.99  13.8
RE DISCCART  581118.89  4194405.86  67.22  198.99  13.8
RE DISCCART  581093.77  4194410.27  67.70  198.99  13.8
RE DISCCART  581098.77  4194410.38  67.64  198.99  13.8
RE DISCCART  581103.77  4194410.50  67.56  198.99  13.8
RE DISCCART  581108.77  4194410.62  67.47  198.99  13.8
RE DISCCART  581113.77  4194410.74  67.39  198.99  13.8
RE DISCCART  581118.77  4194410.86  67.30  198.99  13.8
RE DISCCART  581123.76  4194410.98  67.21  198.99  13.8
RE DISCCART  581093.65  4194415.26  67.72  198.99  13.8
RE DISCCART  581098.65  4194415.38  67.67  198.99  13.8
RE DISCCART  581103.65  4194415.50  67.62  198.99  13.8
RE DISCCART  581108.65  4194415.62  67.56  198.99  13.8
RE DISCCART  581113.65  4194415.74  67.49  198.99  13.8
RE DISCCART  581118.65  4194415.86  67.40  198.99  13.8
RE DISCCART  581123.64  4194415.98  67.31  198.99  13.8
RE DISCCART  581128.64  4194416.10  67.21  198.99  13.8
RE DISCCART  581133.64  4194416.22  67.11  198.99  13.8
RE DISCCART  581138.64  4194416.34  67.01  198.99  13.8
RE DISCCART  581093.53  4194420.26  67.79  198.99  13.8
RE DISCCART  581098.53  4194420.38  67.74  198.99  13.8
RE DISCCART  581103.53  4194420.50  67.69  198.99  13.8
RE DISCCART  581108.53  4194420.62  67.63  198.99  13.8
RE DISCCART  581113.53  4194420.74  67.56  198.99  13.8
RE DISCCART  581118.53  4194420.86  67.47  198.99  13.8
RE DISCCART  581123.53  4194420.98  67.37  198.99  13.8
RE DISCCART  581128.52  4194421.10  67.26  198.99  13.8
RE DISCCART  581133.52  4194421.22  67.15  198.99  13.8
RE DISCCART  581138.52  4194421.34  67.04  198.99  13.8
RE DISCCART  581143.52  4194421.46  66.94  198.99  13.8
RE DISCCART  581148.52  4194421.58  66.84  198.99  13.8
RE DISCCART  581093.41  4194425.26  67.89  198.99  13.8
RE DISCCART  581098.41  4194425.38  67.84  198.99  13.8
RE DISCCART  581103.41  4194425.50  67.78  198.99  13.8
RE DISCCART  581108.41  4194425.62  67.70  198.99  13.8
```

```
RE DISCCART  581113.41  4194425.74  67.61  198.99  13.8
RE DISCCART  581118.41  4194425.86  67.51  198.99  13.8
RE DISCCART  581123.41  4194425.98  67.41  198.99  13.8
RE DISCCART  581128.40  4194426.10  67.31  198.99  13.8
RE DISCCART  581133.40  4194426.22  67.19  198.99  13.8
RE DISCCART  581138.40  4194426.34  67.07  198.99  13.8
RE DISCCART  581143.40  4194426.46  66.96  198.99  13.8
RE DISCCART  581148.40  4194426.58  66.87  198.99  13.8
RE DISCCART  581153.40  4194426.69  66.81  198.99  13.8
RE DISCCART  581158.40  4194426.81  66.73  198.99  13.8
RE DISCCART  581093.29  4194430.26  67.97  198.99  13.8
RE DISCCART  581098.29  4194430.38  67.90  198.99  13.8
RE DISCCART  581103.29  4194430.50  67.83  198.99  13.8
RE DISCCART  581108.29  4194430.62  67.75  198.99  13.8
RE DISCCART  581113.29  4194430.74  67.65  198.99  13.8
RE DISCCART  581118.29  4194430.86  67.55  198.99  13.8
RE DISCCART  581123.29  4194430.98  67.43  198.99  13.8
RE DISCCART  581128.28  4194431.10  67.33  198.99  13.8
RE DISCCART  581133.28  4194431.22  67.22  198.99  13.8
RE DISCCART  581138.28  4194431.34  67.12  198.99  13.8
RE DISCCART  581143.28  4194431.46  67.03  198.99  13.8
RE DISCCART  581148.28  4194431.57  66.94  198.99  13.8
RE DISCCART  581153.28  4194431.69  66.87  198.99  13.8
RE DISCCART  581158.28  4194431.81  66.78  198.99  13.8
RE DISCCART  581163.27  4194431.93  66.67  198.99  13.8
RE DISCCART  581168.27  4194432.05  66.55  198.99  13.8
RE DISCCART  581093.17  4194435.26  68.02  198.99  13.8
RE DISCCART  581098.17  4194435.38  67.92  198.99  13.8
RE DISCCART  581103.17  4194435.50  67.84  198.99  13.8
RE DISCCART  581108.17  4194435.62  67.77  198.99  13.8
RE DISCCART  581113.17  4194435.74  67.69  198.99  13.8
RE DISCCART  581118.17  4194435.86  67.57  198.99  13.8
RE DISCCART  581123.17  4194435.98  67.44  198.99  13.8
RE DISCCART  581128.17  4194436.10  67.34  198.99  13.8
RE DISCCART  581133.16  4194436.21  67.25  198.99  13.8
RE DISCCART  581138.16  4194436.33  67.18  198.99  13.8
RE DISCCART  581143.16  4194436.45  67.11  198.99  13.8
RE DISCCART  581148.16  4194436.57  67.03  198.99  13.8
RE DISCCART  581153.16  4194436.69  66.93  198.99  13.8
RE DISCCART  581158.16  4194436.81  66.82  198.99  13.8
RE DISCCART  581163.16  4194436.93  66.71  198.99  13.8
RE DISCCART  581168.15  4194437.05  66.57  198.99  13.8
RE DISCCART  581093.06  4194440.26  68.09  198.99  13.8
RE DISCCART  581098.05  4194440.38  67.98  198.99  13.8
RE DISCCART  581103.05  4194440.50  67.88  198.99  13.8
RE DISCCART  581108.05  4194440.61  67.79  198.99  13.8
RE DISCCART  581113.05  4194440.73  67.71  198.99  13.8
RE DISCCART  581118.05  4194440.85  67.60  198.99  13.8
RE DISCCART  581123.05  4194440.97  67.48  198.99  13.8
RE DISCCART  581128.05  4194441.09  67.39  198.99  13.8
RE DISCCART  581133.04  4194441.21  67.31  198.99  13.8
RE DISCCART  581138.04  4194441.33  67.25  198.99  13.8
RE DISCCART  581143.04  4194441.45  67.17  198.99  13.8
RE DISCCART  581148.04  4194441.57  67.08  198.99  13.8
```

```
RE DISCCART  581153.04  4194441.69  66.97  198.99  13.8
RE DISCCART  581158.04  4194441.81  66.86  198.99  13.8
RE DISCCART  581163.04  4194441.93  66.73  198.99  13.8
RE DISCCART  581168.03  4194442.05  66.60  198.99  13.8
RE DISCCART  581092.94  4194445.26  68.18  198.99  13.8
RE DISCCART  581097.93  4194445.37  68.06  198.99  13.8
RE DISCCART  581102.93  4194445.49  67.94  198.99  13.8
RE DISCCART  581107.93  4194445.61  67.82  198.99  13.8
RE DISCCART  581112.93  4194445.73  67.73  198.99  13.8
RE DISCCART  581117.93  4194445.85  67.63  198.99  13.8
RE DISCCART  581122.93  4194445.97  67.54  198.99  13.8
RE DISCCART  581127.93  4194446.09  67.48  198.99  13.8
RE DISCCART  581132.92  4194446.21  67.40  198.99  13.8
RE DISCCART  581137.92  4194446.33  67.32  198.99  13.8
RE DISCCART  581142.92  4194446.45  67.22  198.99  13.8
RE DISCCART  581147.92  4194446.57  67.12  198.99  13.8
RE DISCCART  581152.92  4194446.69  67.01  198.99  13.8
RE DISCCART  581157.92  4194446.81  66.88  198.99  13.8
RE DISCCART  581162.92  4194446.93  66.75  198.99  13.8
RE DISCCART  581167.91  4194447.05  66.64  198.99  13.8
RE DISCCART  581092.82  4194450.25  68.26  198.99  13.8
RE DISCCART  581097.82  4194450.37  68.13  198.99  13.8
RE DISCCART  581102.81  4194450.49  67.99  198.99  13.8
RE DISCCART  581107.81  4194450.61  67.87  198.99  13.8
RE DISCCART  581112.81  4194450.73  67.77  198.99  13.8
RE DISCCART  581117.81  4194450.85  67.69  198.99  13.8
RE DISCCART  581122.81  4194450.97  67.61  198.99  13.8
RE DISCCART  581127.81  4194451.09  67.55  198.99  13.8
RE DISCCART  581132.81  4194451.21  67.47  198.99  13.8
RE DISCCART  581137.80  4194451.33  67.36  198.99  13.8
RE DISCCART  581142.80  4194451.45  67.25  198.99  13.8
RE DISCCART  581147.80  4194451.57  67.14  198.99  13.8
RE DISCCART  581152.80  4194451.69  67.03  198.99  13.8
RE DISCCART  581157.80  4194451.81  66.91  198.99  13.8
RE DISCCART  581162.80  4194451.93  66.79  198.99  13.8
RE DISCCART  581167.79  4194452.05  66.69  198.99  13.8
RE DISCCART  581092.70  4194455.25  68.31  198.99  13.8
RE DISCCART  581097.69  4194455.37  68.18  198.99  13.8
RE DISCCART  581102.69  4194455.49  68.05  198.99  13.8
RE DISCCART  581107.69  4194455.61  67.92  198.99  13.8
RE DISCCART  581112.69  4194455.73  67.83  198.99  13.8
RE DISCCART  581117.69  4194455.85  67.76  198.99  13.8
RE DISCCART  581122.69  4194455.97  67.69  198.99  13.8
RE DISCCART  581127.69  4194456.09  67.61  198.99  13.8
RE DISCCART  581132.68  4194456.21  67.51  198.99  13.8
RE DISCCART  581137.68  4194456.33  67.39  198.99  13.8
RE DISCCART  581142.68  4194456.45  67.27  198.99  13.8
RE DISCCART  581147.68  4194456.57  67.15  198.99  13.8
RE DISCCART  581152.68  4194456.69  67.04  198.99  13.8
RE DISCCART  581157.68  4194456.81  66.94  198.99  13.8
RE DISCCART  581162.68  4194456.93  66.84  198.99  13.8
RE DISCCART  581167.67  4194457.05  66.74  198.99  13.8
RE DISCCART  581092.58  4194460.25  68.36  198.99  13.8
RE DISCCART  581097.58  4194460.37  68.23  198.99  13.8
```

```
RE DISCCART  581102.57  4194460.49  68.09  198.99  13.8
RE DISCCART  581107.57  4194460.61  67.97  198.99  13.8
RE DISCCART  581112.57  4194460.73  67.88  198.99  13.8
RE DISCCART  581117.57  4194460.85  67.80  198.99  13.8
RE DISCCART  581122.57  4194460.97  67.73  198.99  13.8
RE DISCCART  581127.57  4194461.09  67.64  198.99  13.8
RE DISCCART  581132.57  4194461.21  67.53  198.99  13.8
RE DISCCART  581137.56  4194461.33  67.41  198.99  13.8
RE DISCCART  581142.56  4194461.45  67.29  198.99  13.8
RE DISCCART  581147.56  4194461.57  67.17  198.99  13.8
RE DISCCART  581152.56  4194461.69  67.08  198.99  13.8
RE DISCCART  581157.56  4194461.81  66.98  198.99  13.8
RE DISCCART  581162.56  4194461.92  66.89  198.99  13.8
RE DISCCART  581167.56  4194462.04  66.78  198.99  13.8
RE DISCCART  581092.46  4194465.25  68.39  198.99  13.8
RE DISCCART  581097.46  4194465.37  68.27  198.99  13.8
RE DISCCART  581102.45  4194465.49  68.14  198.99  13.8
RE DISCCART  581107.45  4194465.61  68.01  198.99  13.8
RE DISCCART  581112.45  4194465.73  67.92  198.99  13.8
RE DISCCART  581117.45  4194465.85  67.82  198.99  13.8
RE DISCCART  581122.45  4194465.97  67.73  198.99  13.8
RE DISCCART  581127.45  4194466.09  67.64  198.99  13.8
RE DISCCART  581132.45  4194466.21  67.53  198.99  13.8
RE DISCCART  581137.44  4194466.32  67.42  198.99  13.8
RE DISCCART  581142.44  4194466.45  67.31  198.99  13.8
RE DISCCART  581147.44  4194466.56  67.21  198.99  13.8
RE DISCCART  581152.44  4194466.68  67.12  198.99  13.8
RE DISCCART  581157.44  4194466.80  67.02  198.99  13.8
RE DISCCART  581162.44  4194466.92  66.93  198.99  13.8
RE DISCCART  581167.44  4194467.04  66.82  198.99  13.8
RE DISCCART  581092.34  4194470.25  68.40  198.99  13.8
RE DISCCART  581097.34  4194470.37  68.28  198.99  13.8
RE DISCCART  581102.34  4194470.49  68.15  198.99  13.8
RE DISCCART  581107.33  4194470.61  68.04  198.99  13.8
RE DISCCART  581112.33  4194470.73  67.94  198.99  13.8
RE DISCCART  581117.33  4194470.85  67.84  198.99  13.8
RE DISCCART  581122.33  4194470.97  67.74  198.99  13.8
RE DISCCART  581127.33  4194471.09  67.64  198.99  13.8
RE DISCCART  581132.33  4194471.20  67.53  198.99  13.8
RE DISCCART  581137.33  4194471.32  67.41  198.99  13.8
RE DISCCART  581142.32  4194471.44  67.31  198.99  13.8
RE DISCCART  581147.32  4194471.56  67.21  198.99  13.8
RE DISCCART  581152.32  4194471.68  67.13  198.99  13.8
RE DISCCART  581157.32  4194471.80  67.04  198.99  13.8
RE DISCCART  581162.32  4194471.92  66.93  198.99  13.8
RE DISCCART  581167.32  4194472.04  66.81  198.99  13.8
RE DISCCART  581092.22  4194475.25  68.34  198.99  13.8
RE DISCCART  581097.22  4194475.37  68.24  198.99  13.8
RE DISCCART  581102.22  4194475.49  68.13  198.99  13.8
RE DISCCART  581107.21  4194475.61  68.03  198.99  13.8
RE DISCCART  581112.21  4194475.72  67.94  198.99  13.8
RE DISCCART  581117.21  4194475.84  67.84  198.99  13.8
RE DISCCART  581122.21  4194475.96  67.74  198.99  13.8
RE DISCCART  581127.21  4194476.08  67.64  198.99  13.8
```

```
RE DISCCART  581132.21  4194476.20  67.53  198.99  13.8
RE DISCCART  581137.21  4194476.32  67.40  198.99  13.8
RE DISCCART  581142.20  4194476.44  67.29  198.99  13.8
RE DISCCART  581147.20  4194476.56  67.19  198.99  13.8
RE DISCCART  581152.20  4194476.68  67.12  198.99  13.8
RE DISCCART  581157.20  4194476.80  67.02  198.99  13.8
RE DISCCART  581162.20  4194476.92  66.90  198.99  13.8
RE DISCCART  581167.20  4194477.04  66.78  198.99  13.8
RE DISCCART  581092.10  4194480.25  68.28  198.99  13.8
RE DISCCART  581097.10  4194480.36  68.19  198.99  13.8
RE DISCCART  581102.10  4194480.48  68.10  198.99  13.8
RE DISCCART  581107.09  4194480.60  68.01  198.99  13.8
RE DISCCART  581112.09  4194480.72  67.93  198.99  13.8
RE DISCCART  581117.09  4194480.84  67.84  198.99  13.8
RE DISCCART  581122.09  4194480.96  67.74  198.99  13.8
RE DISCCART  581127.09  4194481.08  67.64  198.99  13.8
RE DISCCART  581132.09  4194481.20  67.53  198.99  13.8
RE DISCCART  581137.09  4194481.32  67.39  198.99  13.8
RE DISCCART  581142.08  4194481.44  67.27  198.99  13.8
RE DISCCART  581147.08  4194481.56  67.16  198.99  13.8
RE DISCCART  581152.08  4194481.68  67.09  198.99  13.8
RE DISCCART  581157.08  4194481.80  66.99  198.99  13.8
RE DISCCART  581162.08  4194481.92  66.87  198.99  13.8
RE DISCCART  581167.08  4194482.04  66.77  198.99  13.8
RE DISCCART  581091.98  4194485.24  68.19  198.99  13.8
RE DISCCART  581096.98  4194485.36  68.12  198.99  13.8
RE DISCCART  581101.98  4194485.48  68.05  198.99  13.8
RE DISCCART  581106.98  4194485.60  67.97  198.99  13.8
RE DISCCART  581111.97  4194485.72  67.91  198.99  13.8
RE DISCCART  581116.97  4194485.84  67.83  198.99  13.8
RE DISCCART  581121.97  4194485.96  67.75  198.99  13.8
RE DISCCART  581126.97  4194486.08  67.64  198.99  13.8
RE DISCCART  581131.97  4194486.20  67.52  198.99  13.8
RE DISCCART  581136.97  4194486.32  67.39  198.99  13.8
RE DISCCART  581141.97  4194486.44  67.27  198.99  13.8
RE DISCCART  581146.96  4194486.56  67.15  198.99  13.8
RE DISCCART  581151.96  4194486.68  67.05  198.99  13.8
RE DISCCART  581156.96  4194486.80  66.95  198.99  13.8
RE DISCCART  581161.96  4194486.92  66.84  198.99  13.8
RE DISCCART  581166.96  4194487.04  66.79  198.99  13.8
RE DISCCART  581091.86  4194490.24  68.09  198.99  13.8
RE DISCCART  581096.86  4194490.36  68.04  198.99  13.8
RE DISCCART  581101.86  4194490.48  67.99  198.99  13.8
RE DISCCART  581106.86  4194490.60  67.93  198.99  13.8
RE DISCCART  581111.85  4194490.72  67.88  198.99  13.8
RE DISCCART  581116.85  4194490.84  67.81  198.99  13.8
RE DISCCART  581121.85  4194490.96  67.73  198.99  13.8
RE DISCCART  581126.85  4194491.08  67.63  198.99  13.8
RE DISCCART  581131.85  4194491.20  67.51  198.99  13.8
RE DISCCART  581136.85  4194491.32  67.38  198.99  13.8
RE DISCCART  581141.85  4194491.44  67.25  198.99  13.8
RE DISCCART  581146.84  4194491.56  67.12  198.99  13.8
RE DISCCART  581151.84  4194491.68  67.01  198.99  13.8
RE DISCCART  581156.84  4194491.80  66.93  198.99  13.8
```

```
RE DISCCART  581161.84  4194491.92  66.87  198.99  13.8
RE DISCCART  581166.84  4194492.04  66.87  198.99  13.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     243  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581167.10  4194271.98  68.56  198.99  1.8
RE DISCCART  581172.10  4194272.10  68.56  198.99  1.8
RE DISCCART  581177.10  4194272.22  68.53  198.99  1.8
RE DISCCART  581182.10  4194272.34  68.50  198.99  1.8
RE DISCCART  581166.98  4194276.98  68.49  198.99  1.8
RE DISCCART  581171.98  4194277.10  68.50  198.99  1.8
RE DISCCART  581176.98  4194277.22  68.50  198.99  1.8
RE DISCCART  581181.98  4194277.34  68.48  198.99  1.8
RE DISCCART  581166.86  4194281.98  68.41  198.99  1.8
RE DISCCART  581171.86  4194282.10  68.45  198.99  1.8
RE DISCCART  581176.86  4194282.22  68.45  198.99  1.8
RE DISCCART  581181.86  4194282.33  68.45  198.99  1.8
RE DISCCART  581166.74  4194286.97  68.32  198.99  1.8
RE DISCCART  581171.74  4194287.09  68.37  198.99  1.8
RE DISCCART  581176.74  4194287.21  68.39  198.99  1.8
RE DISCCART  581181.74  4194287.33  68.40  198.99  1.8
RE DISCCART  581166.62  4194291.97  68.22  198.99  1.8
RE DISCCART  581171.62  4194292.09  68.27  198.99  1.8
RE DISCCART  581176.62  4194292.21  68.31  198.99  1.8
RE DISCCART  581181.62  4194292.33  68.34  198.99  1.8
RE DISCCART  581166.50  4194296.97  68.13  198.99  1.8
RE DISCCART  581171.50  4194297.09  68.18  198.99  1.8
RE DISCCART  581176.50  4194297.21  68.22  198.99  1.8
RE DISCCART  581181.50  4194297.33  68.26  198.99  1.8
RE DISCCART  581166.38  4194301.97  68.06  198.99  1.8
RE DISCCART  581171.38  4194302.09  68.08  198.99  1.8
RE DISCCART  581176.38  4194302.21  68.12  198.99  1.8
RE DISCCART  581181.38  4194302.33  68.16  198.99  1.8
RE DISCCART  581166.26  4194306.97  68.00  198.99  1.8
RE DISCCART  581171.26  4194307.09  68.01  198.99  1.8
RE DISCCART  581176.26  4194307.21  68.03  198.99  1.8
RE DISCCART  581181.26  4194307.33  68.06  198.99  1.8
RE DISCCART  581166.14  4194311.97  67.95  198.99  1.8
RE DISCCART  581171.14  4194312.09  67.95  198.99  1.8
RE DISCCART  581176.14  4194312.21  67.96  198.99  1.8
RE DISCCART  581181.14  4194312.33  67.97  198.99  1.8
RE DISCCART  581166.03  4194316.97  67.90  198.99  1.8
RE DISCCART  581171.02  4194317.09  67.90  198.99  1.8
RE DISCCART  581176.02  4194317.21  67.90  198.99  1.8
RE DISCCART  581181.02  4194317.32  67.90  198.99  1.8
RE DISCCART  581105.92  4194320.53  67.76  198.99  1.8
RE DISCCART  581110.92  4194320.65  67.70  198.99  1.8
RE DISCCART  581165.91  4194321.96  67.86  198.99  1.8
RE DISCCART  581170.90  4194322.08  67.85  198.99  1.8
RE DISCCART  581175.90  4194322.20  67.85  198.99  1.8
RE DISCCART  581180.90  4194322.32  67.84  198.99  1.8
RE DISCCART  581105.80  4194325.53  67.69  198.99  1.8
```

```
RE DISCCART  581110.80  4194325.65  67.63  198.99  1.8
RE DISCCART  581115.80  4194325.77  67.57  198.99  1.8
RE DISCCART  581165.78  4194326.96  67.78  198.99  1.8
RE DISCCART  581170.78  4194327.08  67.78  198.99  1.8
RE DISCCART  581175.78  4194327.20  67.78  198.99  1.8
RE DISCCART  581180.78  4194327.32  67.79  198.99  1.8
RE DISCCART  581090.69  4194330.17  67.49  198.99  1.8
RE DISCCART  581095.69  4194330.29  67.46  198.99  1.8
RE DISCCART  581100.68  4194330.41  67.41  198.99  1.8
RE DISCCART  581105.68  4194330.53  67.36  198.99  1.8
RE DISCCART  581110.68  4194330.65  67.33  198.99  1.8
RE DISCCART  581115.68  4194330.77  67.30  198.99  1.8
RE DISCCART  581120.68  4194330.89  67.31  198.99  1.8
RE DISCCART  581125.68  4194331.01  67.32  198.99  1.8
RE DISCCART  581130.68  4194331.12  67.34  198.99  1.8
RE DISCCART  581135.67  4194331.24  67.36  198.99  1.8
RE DISCCART  581140.67  4194331.36  67.38  198.99  1.8
RE DISCCART  581145.67  4194331.48  67.42  198.99  1.8
RE DISCCART  581150.67  4194331.60  67.48  198.99  1.8
RE DISCCART  581155.67  4194331.72  67.54  198.99  1.8
RE DISCCART  581160.67  4194331.84  67.60  198.99  1.8
RE DISCCART  581165.67  4194331.96  67.64  198.99  1.8
RE DISCCART  581170.66  4194332.08  67.67  198.99  1.8
RE DISCCART  581175.66  4194332.20  67.70  198.99  1.8
RE DISCCART  581180.66  4194332.32  67.73  198.99  1.8
RE DISCCART  581090.57  4194335.17  67.19  198.99  1.8
RE DISCCART  581095.57  4194335.29  67.14  198.99  1.8
RE DISCCART  581100.57  4194335.41  67.09  198.99  1.8
RE DISCCART  581105.56  4194335.52  67.05  198.99  1.8
RE DISCCART  581110.56  4194335.65  67.04  198.99  1.8
RE DISCCART  581115.56  4194335.76  67.05  198.99  1.8
RE DISCCART  581120.56  4194335.88  67.09  198.99  1.8
RE DISCCART  581125.56  4194336.00  67.13  198.99  1.8
RE DISCCART  581130.56  4194336.12  67.17  198.99  1.8
RE DISCCART  581135.56  4194336.24  67.19  198.99  1.8
RE DISCCART  581140.55  4194336.36  67.20  198.99  1.8
RE DISCCART  581145.55  4194336.48  67.22  198.99  1.8
RE DISCCART  581150.55  4194336.60  67.26  198.99  1.8
RE DISCCART  581155.55  4194336.72  67.33  198.99  1.8
RE DISCCART  581160.55  4194336.84  67.41  198.99  1.8
RE DISCCART  581165.55  4194336.96  67.48  198.99  1.8
RE DISCCART  581170.55  4194337.08  67.52  198.99  1.8
RE DISCCART  581175.54  4194337.20  67.57  198.99  1.8
RE DISCCART  581180.54  4194337.32  67.61  198.99  1.8
RE DISCCART  581090.45  4194340.16  67.07  198.99  1.8
RE DISCCART  581095.45  4194340.29  67.02  198.99  1.8
RE DISCCART  581100.45  4194340.40  66.97  198.99  1.8
RE DISCCART  581105.44  4194340.52  66.92  198.99  1.8
RE DISCCART  581110.44  4194340.64  66.89  198.99  1.8
RE DISCCART  581115.44  4194340.76  66.88  198.99  1.8
RE DISCCART  581120.44  4194340.88  66.90  198.99  1.8
RE DISCCART  581125.44  4194341.00  66.92  198.99  1.8
RE DISCCART  581130.44  4194341.12  66.93  198.99  1.8
RE DISCCART  581135.44  4194341.24  66.95  198.99  1.8
```

```
RE DISCCART  581140.43  4194341.36  66.97  198.99  1.8
RE DISCCART  581145.43  4194341.48  67.03  198.99  1.8
RE DISCCART  581150.43  4194341.60  67.09  198.99  1.8
RE DISCCART  581155.43  4194341.72  67.15  198.99  1.8
RE DISCCART  581160.43  4194341.84  67.19  198.99  1.8
RE DISCCART  581165.43  4194341.96  67.23  198.99  1.8
RE DISCCART  581170.43  4194342.08  67.27  198.99  1.8
RE DISCCART  581175.42  4194342.20  67.32  198.99  1.8
RE DISCCART  581180.42  4194342.32  67.36  198.99  1.8
RE DISCCART  581090.33  4194345.16  66.95  198.99  1.8
RE DISCCART  581095.33  4194345.28  66.90  198.99  1.8
RE DISCCART  581100.33  4194345.40  66.85  198.99  1.8
RE DISCCART  581105.32  4194345.52  66.80  198.99  1.8
RE DISCCART  581110.32  4194345.64  66.75  198.99  1.8
RE DISCCART  581115.32  4194345.76  66.72  198.99  1.8
RE DISCCART  581120.32  4194345.88  66.71  198.99  1.8
RE DISCCART  581125.32  4194346.00  66.71  198.99  1.8
RE DISCCART  581130.32  4194346.12  66.71  198.99  1.8
RE DISCCART  581135.32  4194346.24  66.73  198.99  1.8
RE DISCCART  581140.31  4194346.36  66.76  198.99  1.8
RE DISCCART  581145.31  4194346.48  66.84  198.99  1.8
RE DISCCART  581150.31  4194346.60  66.91  198.99  1.8
RE DISCCART  581155.31  4194346.72  66.97  198.99  1.8
RE DISCCART  581160.31  4194346.84  66.99  198.99  1.8
RE DISCCART  581165.31  4194346.96  67.00  198.99  1.8
RE DISCCART  581170.31  4194347.08  67.04  198.99  1.8
RE DISCCART  581175.30  4194347.20  67.08  198.99  1.8
RE DISCCART  581180.30  4194347.32  67.12  198.99  1.8
RE DISCCART  581100.21  4194350.40  66.85  198.99  1.8
RE DISCCART  581105.21  4194350.52  66.78  198.99  1.8
RE DISCCART  581110.20  4194350.64  66.72  198.99  1.8
RE DISCCART  581115.20  4194350.76  66.65  198.99  1.8
RE DISCCART  581120.20  4194350.88  66.63  198.99  1.8
RE DISCCART  581125.20  4194351.00  66.61  198.99  1.8
RE DISCCART  581130.20  4194351.12  66.60  198.99  1.8
RE DISCCART  581135.20  4194351.24  66.61  198.99  1.8
RE DISCCART  581140.19  4194351.36  66.63  198.99  1.8
RE DISCCART  581145.19  4194351.48  66.68  198.99  1.8
RE DISCCART  581150.19  4194351.60  66.73  198.99  1.8
RE DISCCART  581155.19  4194351.72  66.79  198.99  1.8
RE DISCCART  581160.19  4194351.84  66.81  198.99  1.8
RE DISCCART  581165.19  4194351.96  66.84  198.99  1.8
RE DISCCART  581170.19  4194352.08  66.85  198.99  1.8
RE DISCCART  581175.18  4194352.19  66.88  198.99  1.8
RE DISCCART  581180.18  4194352.31  66.92  198.99  1.8
RE DISCCART  581110.08  4194355.64  66.68  198.99  1.8
RE DISCCART  581115.08  4194355.76  66.59  198.99  1.8
RE DISCCART  581120.08  4194355.88  66.54  198.99  1.8
RE DISCCART  581125.08  4194356.00  66.51  198.99  1.8
RE DISCCART  581130.08  4194356.12  66.50  198.99  1.8
RE DISCCART  581135.08  4194356.24  66.50  198.99  1.8
RE DISCCART  581140.08  4194356.36  66.50  198.99  1.8
RE DISCCART  581145.07  4194356.48  66.53  198.99  1.8
RE DISCCART  581150.07  4194356.60  66.57  198.99  1.8
```

```
RE DISCCART  581155.07  4194356.72  66.62  198.99  1.8
RE DISCCART  581160.07  4194356.84  66.65  198.99  1.8
RE DISCCART  581165.07  4194356.95  66.68  198.99  1.8
RE DISCCART  581170.07  4194357.07  66.69  198.99  1.8
RE DISCCART  581175.07  4194357.19  66.71  198.99  1.8
RE DISCCART  581180.06  4194357.31  66.73  198.99  1.8
RE DISCCART  581114.96  4194360.76  66.63  198.99  1.8
RE DISCCART  581119.96  4194360.88  66.56  198.99  1.8
RE DISCCART  581124.96  4194361.00  66.52  198.99  1.8
RE DISCCART  581129.96  4194361.12  66.50  198.99  1.8
RE DISCCART  581134.96  4194361.24  66.50  198.99  1.8
RE DISCCART  581139.96  4194361.36  66.51  198.99  1.8
RE DISCCART  581144.95  4194361.48  66.52  198.99  1.8
RE DISCCART  581149.95  4194361.59  66.53  198.99  1.8
RE DISCCART  581154.95  4194361.71  66.56  198.99  1.8
RE DISCCART  581159.95  4194361.83  66.58  198.99  1.8
RE DISCCART  581164.95  4194361.95  66.60  198.99  1.8
RE DISCCART  581169.95  4194362.07  66.62  198.99  1.8
RE DISCCART  581174.95  4194362.19  66.62  198.99  1.8
RE DISCCART  581179.94  4194362.31  66.59  198.99  1.8
RE DISCCART  581119.84  4194365.88  66.59  198.99  1.8
RE DISCCART  581124.84  4194366.00  66.52  198.99  1.8
RE DISCCART  581129.84  4194366.11  66.50  198.99  1.8
RE DISCCART  581134.84  4194366.23  66.50  198.99  1.8
RE DISCCART  581139.84  4194366.35  66.51  198.99  1.8
RE DISCCART  581144.84  4194366.47  66.51  198.99  1.8
RE DISCCART  581149.83  4194366.59  66.51  198.99  1.8
RE DISCCART  581154.83  4194366.71  66.50  198.99  1.8
RE DISCCART  581159.83  4194366.83  66.51  198.99  1.8
RE DISCCART  581164.83  4194366.95  66.52  198.99  1.8
RE DISCCART  581169.83  4194367.07  66.55  198.99  1.8
RE DISCCART  581174.83  4194367.19  66.52  198.99  1.8
RE DISCCART  581179.83  4194367.31  66.46  198.99  1.8
RE DISCCART  581124.72  4194370.99  66.57  198.99  1.8
RE DISCCART  581129.72  4194371.11  66.56  198.99  1.8
RE DISCCART  581134.72  4194371.23  66.56  198.99  1.8
RE DISCCART  581139.72  4194371.35  66.56  198.99  1.8
RE DISCCART  581144.72  4194371.47  66.57  198.99  1.8
RE DISCCART  581149.71  4194371.59  66.56  198.99  1.8
RE DISCCART  581154.71  4194371.71  66.54  198.99  1.8
RE DISCCART  581159.71  4194371.83  66.50  198.99  1.8
RE DISCCART  581164.71  4194371.95  66.46  198.99  1.8
RE DISCCART  581169.71  4194372.07  66.44  198.99  1.8
RE DISCCART  581174.71  4194372.19  66.40  198.99  1.8
RE DISCCART  581179.71  4194372.31  66.34  198.99  1.8
RE DISCCART  581129.60  4194376.11  66.61  198.99  1.8
RE DISCCART  581134.60  4194376.23  66.61  198.99  1.8
RE DISCCART  581139.60  4194376.35  66.62  198.99  1.8
RE DISCCART  581144.60  4194376.47  66.62  198.99  1.8
RE DISCCART  581149.59  4194376.59  66.61  198.99  1.8
RE DISCCART  581154.59  4194376.71  66.57  198.99  1.8
RE DISCCART  581159.59  4194376.83  66.49  198.99  1.8
RE DISCCART  581164.59  4194376.95  66.40  198.99  1.8
RE DISCCART  581169.59  4194377.07  66.33  198.99  1.8
```

```
RE DISCCART  581174.59  4194377.19  66.27  198.99  1.8
RE DISCCART  581179.59  4194377.31  66.23  198.99  1.8
RE DISCCART  581134.48  4194381.23  66.71  198.99  1.8
RE DISCCART  581139.48  4194381.35  66.69  198.99  1.8
RE DISCCART  581144.48  4194381.47  66.65  198.99  1.8
RE DISCCART  581149.47  4194381.59  66.61  198.99  1.8
RE DISCCART  581154.47  4194381.71  66.54  198.99  1.8
RE DISCCART  581159.47  4194381.83  66.47  198.99  1.8
RE DISCCART  581164.47  4194381.95  66.39  198.99  1.8
RE DISCCART  581169.47  4194382.07  66.31  198.99  1.8
RE DISCCART  581174.47  4194382.19  66.24  198.99  1.8
RE DISCCART  581179.47  4194382.31  66.18  198.99  1.8
RE DISCCART  581144.36  4194386.47  66.68  198.99  1.8
RE DISCCART  581149.36  4194386.59  66.60  198.99  1.8
RE DISCCART  581154.35  4194386.71  66.52  198.99  1.8
RE DISCCART  581159.35  4194386.83  66.45  198.99  1.8
RE DISCCART  581164.35  4194386.95  66.38  198.99  1.8
RE DISCCART  581169.35  4194387.06  66.29  198.99  1.8
RE DISCCART  581174.35  4194387.19  66.21  198.99  1.8
RE DISCCART  581179.35  4194387.31  66.15  198.99  1.8
RE DISCCART  581149.24  4194391.59  66.63  198.99  1.8
RE DISCCART  581154.23  4194391.71  66.55  198.99  1.8
RE DISCCART  581159.23  4194391.82  66.47  198.99  1.8
RE DISCCART  581164.23  4194391.94  66.40  198.99  1.8
RE DISCCART  581169.23  4194392.06  66.32  198.99  1.8
RE DISCCART  581174.23  4194392.18  66.26  198.99  1.8
RE DISCCART  581179.23  4194392.30  66.20  198.99  1.8
RE DISCCART  581159.11  4194396.82  66.50  198.99  1.8
RE DISCCART  581164.11  4194396.94  66.41  198.99  1.8
RE DISCCART  581169.11  4194397.06  66.36  198.99  1.8
RE DISCCART  581174.11  4194397.18  66.30  198.99  1.8
RE DISCCART  581179.11  4194397.30  66.25  198.99  1.8
RE DISCCART  581173.99  4194402.18  66.28  198.99  1.8
RE DISCCART  581178.99  4194402.30  66.20  198.99  1.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     243  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581167.10  4194271.98  68.56  198.99  4.8
RE DISCCART  581172.10  4194272.10  68.56  198.99  4.8
RE DISCCART  581177.10  4194272.22  68.53  198.99  4.8
RE DISCCART  581182.10  4194272.34  68.50  198.99  4.8
RE DISCCART  581166.98  4194276.98  68.49  198.99  4.8
RE DISCCART  581171.98  4194277.10  68.50  198.99  4.8
RE DISCCART  581176.98  4194277.22  68.50  198.99  4.8
RE DISCCART  581181.98  4194277.34  68.48  198.99  4.8
RE DISCCART  581166.86  4194281.98  68.41  198.99  4.8
RE DISCCART  581171.86  4194282.10  68.45  198.99  4.8
RE DISCCART  581176.86  4194282.22  68.45  198.99  4.8
RE DISCCART  581181.86  4194282.33  68.45  198.99  4.8
RE DISCCART  581166.74  4194286.97  68.32  198.99  4.8
RE DISCCART  581171.74  4194287.09  68.37  198.99  4.8
RE DISCCART  581176.74  4194287.21  68.39  198.99  4.8
RE DISCCART  581181.74  4194287.33  68.40  198.99  4.8
RE DISCCART  581166.62  4194291.97  68.22  198.99  4.8
RE DISCCART  581171.62  4194292.09  68.27  198.99  4.8
RE DISCCART  581176.62  4194292.21  68.31  198.99  4.8
RE DISCCART  581181.62  4194292.33  68.34  198.99  4.8
RE DISCCART  581166.50  4194296.97  68.13  198.99  4.8
RE DISCCART  581171.50  4194297.09  68.18  198.99  4.8
RE DISCCART  581176.50  4194297.21  68.22  198.99  4.8
RE DISCCART  581181.50  4194297.33  68.26  198.99  4.8
RE DISCCART  581166.38  4194301.97  68.06  198.99  4.8
RE DISCCART  581171.38  4194302.09  68.08  198.99  4.8
RE DISCCART  581176.38  4194302.21  68.12  198.99  4.8
RE DISCCART  581181.38  4194302.33  68.16  198.99  4.8
RE DISCCART  581166.26  4194306.97  68.00  198.99  4.8
RE DISCCART  581171.26  4194307.09  68.01  198.99  4.8
RE DISCCART  581176.26  4194307.21  68.03  198.99  4.8
RE DISCCART  581181.26  4194307.33  68.06  198.99  4.8
RE DISCCART  581166.14  4194311.97  67.95  198.99  4.8
RE DISCCART  581171.14  4194312.09  67.95  198.99  4.8
RE DISCCART  581176.14  4194312.21  67.96  198.99  4.8
RE DISCCART  581181.14  4194312.33  67.97  198.99  4.8
RE DISCCART  581166.03  4194316.97  67.90  198.99  4.8
RE DISCCART  581171.02  4194317.09  67.90  198.99  4.8
RE DISCCART  581176.02  4194317.21  67.90  198.99  4.8
RE DISCCART  581181.02  4194317.32  67.90  198.99  4.8
RE DISCCART  581105.92  4194320.53  67.76  198.99  4.8
RE DISCCART  581110.92  4194320.65  67.70  198.99  4.8
RE DISCCART  581165.91  4194321.96  67.86  198.99  4.8
RE DISCCART  581170.90  4194322.08  67.85  198.99  4.8
RE DISCCART  581175.90  4194322.20  67.85  198.99  4.8
RE DISCCART  581180.90  4194322.32  67.84  198.99  4.8
RE DISCCART  581105.80  4194325.53  67.69  198.99  4.8
```

```
RE DISCCART  581110.80  4194325.65  67.63  198.99  4.8
RE DISCCART  581115.80  4194325.77  67.57  198.99  4.8
RE DISCCART  581165.78  4194326.96  67.78  198.99  4.8
RE DISCCART  581170.78  4194327.08  67.78  198.99  4.8
RE DISCCART  581175.78  4194327.20  67.78  198.99  4.8
RE DISCCART  581180.78  4194327.32  67.79  198.99  4.8
RE DISCCART  581090.69  4194330.17  67.49  198.99  4.8
RE DISCCART  581095.69  4194330.29  67.46  198.99  4.8
RE DISCCART  581100.68  4194330.41  67.41  198.99  4.8
RE DISCCART  581105.68  4194330.53  67.36  198.99  4.8
RE DISCCART  581110.68  4194330.65  67.33  198.99  4.8
RE DISCCART  581115.68  4194330.77  67.30  198.99  4.8
RE DISCCART  581120.68  4194330.89  67.31  198.99  4.8
RE DISCCART  581125.68  4194331.01  67.32  198.99  4.8
RE DISCCART  581130.68  4194331.12  67.34  198.99  4.8
RE DISCCART  581135.67  4194331.24  67.36  198.99  4.8
RE DISCCART  581140.67  4194331.36  67.38  198.99  4.8
RE DISCCART  581145.67  4194331.48  67.42  198.99  4.8
RE DISCCART  581150.67  4194331.60  67.48  198.99  4.8
RE DISCCART  581155.67  4194331.72  67.54  198.99  4.8
RE DISCCART  581160.67  4194331.84  67.60  198.99  4.8
RE DISCCART  581165.67  4194331.96  67.64  198.99  4.8
RE DISCCART  581170.66  4194332.08  67.67  198.99  4.8
RE DISCCART  581175.66  4194332.20  67.70  198.99  4.8
RE DISCCART  581180.66  4194332.32  67.73  198.99  4.8
RE DISCCART  581090.57  4194335.17  67.19  198.99  4.8
RE DISCCART  581095.57  4194335.29  67.14  198.99  4.8
RE DISCCART  581100.57  4194335.41  67.09  198.99  4.8
RE DISCCART  581105.56  4194335.52  67.05  198.99  4.8
RE DISCCART  581110.56  4194335.65  67.04  198.99  4.8
RE DISCCART  581115.56  4194335.76  67.05  198.99  4.8
RE DISCCART  581120.56  4194335.88  67.09  198.99  4.8
RE DISCCART  581125.56  4194336.00  67.13  198.99  4.8
RE DISCCART  581130.56  4194336.12  67.17  198.99  4.8
RE DISCCART  581135.56  4194336.24  67.19  198.99  4.8
RE DISCCART  581140.55  4194336.36  67.20  198.99  4.8
RE DISCCART  581145.55  4194336.48  67.22  198.99  4.8
RE DISCCART  581150.55  4194336.60  67.26  198.99  4.8
RE DISCCART  581155.55  4194336.72  67.33  198.99  4.8
RE DISCCART  581160.55  4194336.84  67.41  198.99  4.8
RE DISCCART  581165.55  4194336.96  67.48  198.99  4.8
RE DISCCART  581170.55  4194337.08  67.52  198.99  4.8
RE DISCCART  581175.54  4194337.20  67.57  198.99  4.8
RE DISCCART  581180.54  4194337.32  67.61  198.99  4.8
RE DISCCART  581090.45  4194340.16  67.07  198.99  4.8
RE DISCCART  581095.45  4194340.29  67.02  198.99  4.8
RE DISCCART  581100.45  4194340.40  66.97  198.99  4.8
RE DISCCART  581105.44  4194340.52  66.92  198.99  4.8
RE DISCCART  581110.44  4194340.64  66.89  198.99  4.8
RE DISCCART  581115.44  4194340.76  66.88  198.99  4.8
RE DISCCART  581120.44  4194340.88  66.90  198.99  4.8
RE DISCCART  581125.44  4194341.00  66.92  198.99  4.8
RE DISCCART  581130.44  4194341.12  66.93  198.99  4.8
RE DISCCART  581135.44  4194341.24  66.95  198.99  4.8
```

```
RE DISCCART  581140.43  4194341.36  66.97  198.99  4.8
RE DISCCART  581145.43  4194341.48  67.03  198.99  4.8
RE DISCCART  581150.43  4194341.60  67.09  198.99  4.8
RE DISCCART  581155.43  4194341.72  67.15  198.99  4.8
RE DISCCART  581160.43  4194341.84  67.19  198.99  4.8
RE DISCCART  581165.43  4194341.96  67.23  198.99  4.8
RE DISCCART  581170.43  4194342.08  67.27  198.99  4.8
RE DISCCART  581175.42  4194342.20  67.32  198.99  4.8
RE DISCCART  581180.42  4194342.32  67.36  198.99  4.8
RE DISCCART  581090.33  4194345.16  66.95  198.99  4.8
RE DISCCART  581095.33  4194345.28  66.90  198.99  4.8
RE DISCCART  581100.33  4194345.40  66.85  198.99  4.8
RE DISCCART  581105.32  4194345.52  66.80  198.99  4.8
RE DISCCART  581110.32  4194345.64  66.75  198.99  4.8
RE DISCCART  581115.32  4194345.76  66.72  198.99  4.8
RE DISCCART  581120.32  4194345.88  66.71  198.99  4.8
RE DISCCART  581125.32  4194346.00  66.71  198.99  4.8
RE DISCCART  581130.32  4194346.12  66.71  198.99  4.8
RE DISCCART  581135.32  4194346.24  66.73  198.99  4.8
RE DISCCART  581140.31  4194346.36  66.76  198.99  4.8
RE DISCCART  581145.31  4194346.48  66.84  198.99  4.8
RE DISCCART  581150.31  4194346.60  66.91  198.99  4.8
RE DISCCART  581155.31  4194346.72  66.97  198.99  4.8
RE DISCCART  581160.31  4194346.84  66.99  198.99  4.8
RE DISCCART  581165.31  4194346.96  67.00  198.99  4.8
RE DISCCART  581170.31  4194347.08  67.04  198.99  4.8
RE DISCCART  581175.30  4194347.20  67.08  198.99  4.8
RE DISCCART  581180.30  4194347.32  67.12  198.99  4.8
RE DISCCART  581100.21  4194350.40  66.85  198.99  4.8
RE DISCCART  581105.21  4194350.52  66.78  198.99  4.8
RE DISCCART  581110.20  4194350.64  66.72  198.99  4.8
RE DISCCART  581115.20  4194350.76  66.65  198.99  4.8
RE DISCCART  581120.20  4194350.88  66.63  198.99  4.8
RE DISCCART  581125.20  4194351.00  66.61  198.99  4.8
RE DISCCART  581130.20  4194351.12  66.60  198.99  4.8
RE DISCCART  581135.20  4194351.24  66.61  198.99  4.8
RE DISCCART  581140.19  4194351.36  66.63  198.99  4.8
RE DISCCART  581145.19  4194351.48  66.68  198.99  4.8
RE DISCCART  581150.19  4194351.60  66.73  198.99  4.8
RE DISCCART  581155.19  4194351.72  66.79  198.99  4.8
RE DISCCART  581160.19  4194351.84  66.81  198.99  4.8
RE DISCCART  581165.19  4194351.96  66.84  198.99  4.8
RE DISCCART  581170.19  4194352.08  66.85  198.99  4.8
RE DISCCART  581175.18  4194352.19  66.88  198.99  4.8
RE DISCCART  581180.18  4194352.31  66.92  198.99  4.8
RE DISCCART  581110.08  4194355.64  66.68  198.99  4.8
RE DISCCART  581115.08  4194355.76  66.59  198.99  4.8
RE DISCCART  581120.08  4194355.88  66.54  198.99  4.8
RE DISCCART  581125.08  4194356.00  66.51  198.99  4.8
RE DISCCART  581130.08  4194356.12  66.50  198.99  4.8
RE DISCCART  581135.08  4194356.24  66.50  198.99  4.8
RE DISCCART  581140.08  4194356.36  66.50  198.99  4.8
RE DISCCART  581145.07  4194356.48  66.53  198.99  4.8
RE DISCCART  581150.07  4194356.60  66.57  198.99  4.8
```

```
RE DISCCART  581155.07  4194356.72  66.62  198.99  4.8
RE DISCCART  581160.07  4194356.84  66.65  198.99  4.8
RE DISCCART  581165.07  4194356.95  66.68  198.99  4.8
RE DISCCART  581170.07  4194357.07  66.69  198.99  4.8
RE DISCCART  581175.07  4194357.19  66.71  198.99  4.8
RE DISCCART  581180.06  4194357.31  66.73  198.99  4.8
RE DISCCART  581114.96  4194360.76  66.63  198.99  4.8
RE DISCCART  581119.96  4194360.88  66.56  198.99  4.8
RE DISCCART  581124.96  4194361.00  66.52  198.99  4.8
RE DISCCART  581129.96  4194361.12  66.50  198.99  4.8
RE DISCCART  581134.96  4194361.24  66.50  198.99  4.8
RE DISCCART  581139.96  4194361.36  66.51  198.99  4.8
RE DISCCART  581144.95  4194361.48  66.52  198.99  4.8
RE DISCCART  581149.95  4194361.59  66.53  198.99  4.8
RE DISCCART  581154.95  4194361.71  66.56  198.99  4.8
RE DISCCART  581159.95  4194361.83  66.58  198.99  4.8
RE DISCCART  581164.95  4194361.95  66.60  198.99  4.8
RE DISCCART  581169.95  4194362.07  66.62  198.99  4.8
RE DISCCART  581174.95  4194362.19  66.62  198.99  4.8
RE DISCCART  581179.94  4194362.31  66.59  198.99  4.8
RE DISCCART  581119.84  4194365.88  66.59  198.99  4.8
RE DISCCART  581124.84  4194366.00  66.52  198.99  4.8
RE DISCCART  581129.84  4194366.11  66.50  198.99  4.8
RE DISCCART  581134.84  4194366.23  66.50  198.99  4.8
RE DISCCART  581139.84  4194366.35  66.51  198.99  4.8
RE DISCCART  581144.84  4194366.47  66.51  198.99  4.8
RE DISCCART  581149.83  4194366.59  66.51  198.99  4.8
RE DISCCART  581154.83  4194366.71  66.50  198.99  4.8
RE DISCCART  581159.83  4194366.83  66.51  198.99  4.8
RE DISCCART  581164.83  4194366.95  66.52  198.99  4.8
RE DISCCART  581169.83  4194367.07  66.55  198.99  4.8
RE DISCCART  581174.83  4194367.19  66.52  198.99  4.8
RE DISCCART  581179.83  4194367.31  66.46  198.99  4.8
RE DISCCART  581124.72  4194370.99  66.57  198.99  4.8
RE DISCCART  581129.72  4194371.11  66.56  198.99  4.8
RE DISCCART  581134.72  4194371.23  66.56  198.99  4.8
RE DISCCART  581139.72  4194371.35  66.56  198.99  4.8
RE DISCCART  581144.72  4194371.47  66.57  198.99  4.8
RE DISCCART  581149.71  4194371.59  66.56  198.99  4.8
RE DISCCART  581154.71  4194371.71  66.54  198.99  4.8
RE DISCCART  581159.71  4194371.83  66.50  198.99  4.8
RE DISCCART  581164.71  4194371.95  66.46  198.99  4.8
RE DISCCART  581169.71  4194372.07  66.44  198.99  4.8
RE DISCCART  581174.71  4194372.19  66.40  198.99  4.8
RE DISCCART  581179.71  4194372.31  66.34  198.99  4.8
RE DISCCART  581129.60  4194376.11  66.61  198.99  4.8
RE DISCCART  581134.60  4194376.23  66.61  198.99  4.8
RE DISCCART  581139.60  4194376.35  66.62  198.99  4.8
RE DISCCART  581144.60  4194376.47  66.62  198.99  4.8
RE DISCCART  581149.59  4194376.59  66.61  198.99  4.8
RE DISCCART  581154.59  4194376.71  66.57  198.99  4.8
RE DISCCART  581159.59  4194376.83  66.49  198.99  4.8
RE DISCCART  581164.59  4194376.95  66.40  198.99  4.8
RE DISCCART  581169.59  4194377.07  66.33  198.99  4.8
```

```
RE DISCCART  581174.59  4194377.19  66.27  198.99  4.8
RE DISCCART  581179.59  4194377.31  66.23  198.99  4.8
RE DISCCART  581134.48  4194381.23  66.71  198.99  4.8
RE DISCCART  581139.48  4194381.35  66.69  198.99  4.8
RE DISCCART  581144.48  4194381.47  66.65  198.99  4.8
RE DISCCART  581149.47  4194381.59  66.61  198.99  4.8
RE DISCCART  581154.47  4194381.71  66.54  198.99  4.8
RE DISCCART  581159.47  4194381.83  66.47  198.99  4.8
RE DISCCART  581164.47  4194381.95  66.39  198.99  4.8
RE DISCCART  581169.47  4194382.07  66.31  198.99  4.8
RE DISCCART  581174.47  4194382.19  66.24  198.99  4.8
RE DISCCART  581179.47  4194382.31  66.18  198.99  4.8
RE DISCCART  581144.36  4194386.47  66.68  198.99  4.8
RE DISCCART  581149.36  4194386.59  66.60  198.99  4.8
RE DISCCART  581154.35  4194386.71  66.52  198.99  4.8
RE DISCCART  581159.35  4194386.83  66.45  198.99  4.8
RE DISCCART  581164.35  4194386.95  66.38  198.99  4.8
RE DISCCART  581169.35  4194387.06  66.29  198.99  4.8
RE DISCCART  581174.35  4194387.19  66.21  198.99  4.8
RE DISCCART  581179.35  4194387.31  66.15  198.99  4.8
RE DISCCART  581149.24  4194391.59  66.63  198.99  4.8
RE DISCCART  581154.23  4194391.71  66.55  198.99  4.8
RE DISCCART  581159.23  4194391.82  66.47  198.99  4.8
RE DISCCART  581164.23  4194391.94  66.40  198.99  4.8
RE DISCCART  581169.23  4194392.06  66.32  198.99  4.8
RE DISCCART  581174.23  4194392.18  66.26  198.99  4.8
RE DISCCART  581179.23  4194392.30  66.20  198.99  4.8
RE DISCCART  581159.11  4194396.82  66.50  198.99  4.8
RE DISCCART  581164.11  4194396.94  66.41  198.99  4.8
RE DISCCART  581169.11  4194397.06  66.36  198.99  4.8
RE DISCCART  581174.11  4194397.18  66.30  198.99  4.8
RE DISCCART  581179.11  4194397.30  66.25  198.99  4.8
RE DISCCART  581173.99  4194402.18  66.28  198.99  4.8
RE DISCCART  581178.99  4194402.30  66.20  198.99  4.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     243  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581167.10  4194271.98  68.56  198.99  7.8
RE DISCCART  581172.10  4194272.10  68.56  198.99  7.8
RE DISCCART  581177.10  4194272.22  68.53  198.99  7.8
RE DISCCART  581182.10  4194272.34  68.50  198.99  7.8
RE DISCCART  581166.98  4194276.98  68.49  198.99  7.8
RE DISCCART  581171.98  4194277.10  68.50  198.99  7.8
RE DISCCART  581176.98  4194277.22  68.50  198.99  7.8
RE DISCCART  581181.98  4194277.34  68.48  198.99  7.8
RE DISCCART  581166.86  4194281.98  68.41  198.99  7.8
RE DISCCART  581171.86  4194282.10  68.45  198.99  7.8
RE DISCCART  581176.86  4194282.22  68.45  198.99  7.8
RE DISCCART  581181.86  4194282.33  68.45  198.99  7.8
RE DISCCART  581166.74  4194286.97  68.32  198.99  7.8
RE DISCCART  581171.74  4194287.09  68.37  198.99  7.8
RE DISCCART  581176.74  4194287.21  68.39  198.99  7.8
RE DISCCART  581181.74  4194287.33  68.40  198.99  7.8
RE DISCCART  581166.62  4194291.97  68.22  198.99  7.8
RE DISCCART  581171.62  4194292.09  68.27  198.99  7.8
RE DISCCART  581176.62  4194292.21  68.31  198.99  7.8
RE DISCCART  581181.62  4194292.33  68.34  198.99  7.8
RE DISCCART  581166.50  4194296.97  68.13  198.99  7.8
RE DISCCART  581171.50  4194297.09  68.18  198.99  7.8
RE DISCCART  581176.50  4194297.21  68.22  198.99  7.8
RE DISCCART  581181.50  4194297.33  68.26  198.99  7.8
RE DISCCART  581166.38  4194301.97  68.06  198.99  7.8
RE DISCCART  581171.38  4194302.09  68.08  198.99  7.8
RE DISCCART  581176.38  4194302.21  68.12  198.99  7.8
RE DISCCART  581181.38  4194302.33  68.16  198.99  7.8
RE DISCCART  581166.26  4194306.97  68.00  198.99  7.8
RE DISCCART  581171.26  4194307.09  68.01  198.99  7.8
RE DISCCART  581176.26  4194307.21  68.03  198.99  7.8
RE DISCCART  581181.26  4194307.33  68.06  198.99  7.8
RE DISCCART  581166.14  4194311.97  67.95  198.99  7.8
RE DISCCART  581171.14  4194312.09  67.95  198.99  7.8
RE DISCCART  581176.14  4194312.21  67.96  198.99  7.8
RE DISCCART  581181.14  4194312.33  67.97  198.99  7.8
RE DISCCART  581166.03  4194316.97  67.90  198.99  7.8
RE DISCCART  581171.02  4194317.09  67.90  198.99  7.8
RE DISCCART  581176.02  4194317.21  67.90  198.99  7.8
RE DISCCART  581181.02  4194317.32  67.90  198.99  7.8
RE DISCCART  581105.92  4194320.53  67.76  198.99  7.8
RE DISCCART  581110.92  4194320.65  67.70  198.99  7.8
RE DISCCART  581165.91  4194321.96  67.86  198.99  7.8
RE DISCCART  581170.90  4194322.08  67.85  198.99  7.8
RE DISCCART  581175.90  4194322.20  67.85  198.99  7.8
RE DISCCART  581180.90  4194322.32  67.84  198.99  7.8
RE DISCCART  581105.80  4194325.53  67.69  198.99  7.8
```

```
RE DISCCART  581110.80  4194325.65  67.63  198.99  7.8
RE DISCCART  581115.80  4194325.77  67.57  198.99  7.8
RE DISCCART  581165.78  4194326.96  67.78  198.99  7.8
RE DISCCART  581170.78  4194327.08  67.78  198.99  7.8
RE DISCCART  581175.78  4194327.20  67.78  198.99  7.8
RE DISCCART  581180.78  4194327.32  67.79  198.99  7.8
RE DISCCART  581090.69  4194330.17  67.49  198.99  7.8
RE DISCCART  581095.69  4194330.29  67.46  198.99  7.8
RE DISCCART  581100.68  4194330.41  67.41  198.99  7.8
RE DISCCART  581105.68  4194330.53  67.36  198.99  7.8
RE DISCCART  581110.68  4194330.65  67.33  198.99  7.8
RE DISCCART  581115.68  4194330.77  67.30  198.99  7.8
RE DISCCART  581120.68  4194330.89  67.31  198.99  7.8
RE DISCCART  581125.68  4194331.01  67.32  198.99  7.8
RE DISCCART  581130.68  4194331.12  67.34  198.99  7.8
RE DISCCART  581135.67  4194331.24  67.36  198.99  7.8
RE DISCCART  581140.67  4194331.36  67.38  198.99  7.8
RE DISCCART  581145.67  4194331.48  67.42  198.99  7.8
RE DISCCART  581150.67  4194331.60  67.48  198.99  7.8
RE DISCCART  581155.67  4194331.72  67.54  198.99  7.8
RE DISCCART  581160.67  4194331.84  67.60  198.99  7.8
RE DISCCART  581165.67  4194331.96  67.64  198.99  7.8
RE DISCCART  581170.66  4194332.08  67.67  198.99  7.8
RE DISCCART  581175.66  4194332.20  67.70  198.99  7.8
RE DISCCART  581180.66  4194332.32  67.73  198.99  7.8
RE DISCCART  581090.57  4194335.17  67.19  198.99  7.8
RE DISCCART  581095.57  4194335.29  67.14  198.99  7.8
RE DISCCART  581100.57  4194335.41  67.09  198.99  7.8
RE DISCCART  581105.56  4194335.52  67.05  198.99  7.8
RE DISCCART  581110.56  4194335.65  67.04  198.99  7.8
RE DISCCART  581115.56  4194335.76  67.05  198.99  7.8
RE DISCCART  581120.56  4194335.88  67.09  198.99  7.8
RE DISCCART  581125.56  4194336.00  67.13  198.99  7.8
RE DISCCART  581130.56  4194336.12  67.17  198.99  7.8
RE DISCCART  581135.56  4194336.24  67.19  198.99  7.8
RE DISCCART  581140.55  4194336.36  67.20  198.99  7.8
RE DISCCART  581145.55  4194336.48  67.22  198.99  7.8
RE DISCCART  581150.55  4194336.60  67.26  198.99  7.8
RE DISCCART  581155.55  4194336.72  67.33  198.99  7.8
RE DISCCART  581160.55  4194336.84  67.41  198.99  7.8
RE DISCCART  581165.55  4194336.96  67.48  198.99  7.8
RE DISCCART  581170.55  4194337.08  67.52  198.99  7.8
RE DISCCART  581175.54  4194337.20  67.57  198.99  7.8
RE DISCCART  581180.54  4194337.32  67.61  198.99  7.8
RE DISCCART  581090.45  4194340.16  67.07  198.99  7.8
RE DISCCART  581095.45  4194340.29  67.02  198.99  7.8
RE DISCCART  581100.45  4194340.40  66.97  198.99  7.8
RE DISCCART  581105.44  4194340.52  66.92  198.99  7.8
RE DISCCART  581110.44  4194340.64  66.89  198.99  7.8
RE DISCCART  581115.44  4194340.76  66.88  198.99  7.8
RE DISCCART  581120.44  4194340.88  66.90  198.99  7.8
RE DISCCART  581125.44  4194341.00  66.92  198.99  7.8
RE DISCCART  581130.44  4194341.12  66.93  198.99  7.8
RE DISCCART  581135.44  4194341.24  66.95  198.99  7.8
```

```
RE DISCCART  581140.43  4194341.36  66.97  198.99  7.8
RE DISCCART  581145.43  4194341.48  67.03  198.99  7.8
RE DISCCART  581150.43  4194341.60  67.09  198.99  7.8
RE DISCCART  581155.43  4194341.72  67.15  198.99  7.8
RE DISCCART  581160.43  4194341.84  67.19  198.99  7.8
RE DISCCART  581165.43  4194341.96  67.23  198.99  7.8
RE DISCCART  581170.43  4194342.08  67.27  198.99  7.8
RE DISCCART  581175.42  4194342.20  67.32  198.99  7.8
RE DISCCART  581180.42  4194342.32  67.36  198.99  7.8
RE DISCCART  581090.33  4194345.16  66.95  198.99  7.8
RE DISCCART  581095.33  4194345.28  66.90  198.99  7.8
RE DISCCART  581100.33  4194345.40  66.85  198.99  7.8
RE DISCCART  581105.32  4194345.52  66.80  198.99  7.8
RE DISCCART  581110.32  4194345.64  66.75  198.99  7.8
RE DISCCART  581115.32  4194345.76  66.72  198.99  7.8
RE DISCCART  581120.32  4194345.88  66.71  198.99  7.8
RE DISCCART  581125.32  4194346.00  66.71  198.99  7.8
RE DISCCART  581130.32  4194346.12  66.71  198.99  7.8
RE DISCCART  581135.32  4194346.24  66.73  198.99  7.8
RE DISCCART  581140.31  4194346.36  66.76  198.99  7.8
RE DISCCART  581145.31  4194346.48  66.84  198.99  7.8
RE DISCCART  581150.31  4194346.60  66.91  198.99  7.8
RE DISCCART  581155.31  4194346.72  66.97  198.99  7.8
RE DISCCART  581160.31  4194346.84  66.99  198.99  7.8
RE DISCCART  581165.31  4194346.96  67.00  198.99  7.8
RE DISCCART  581170.31  4194347.08  67.04  198.99  7.8
RE DISCCART  581175.30  4194347.20  67.08  198.99  7.8
RE DISCCART  581180.30  4194347.32  67.12  198.99  7.8
RE DISCCART  581100.21  4194350.40  66.85  198.99  7.8
RE DISCCART  581105.21  4194350.52  66.78  198.99  7.8
RE DISCCART  581110.20  4194350.64  66.72  198.99  7.8
RE DISCCART  581115.20  4194350.76  66.65  198.99  7.8
RE DISCCART  581120.20  4194350.88  66.63  198.99  7.8
RE DISCCART  581125.20  4194351.00  66.61  198.99  7.8
RE DISCCART  581130.20  4194351.12  66.60  198.99  7.8
RE DISCCART  581135.20  4194351.24  66.61  198.99  7.8
RE DISCCART  581140.19  4194351.36  66.63  198.99  7.8
RE DISCCART  581145.19  4194351.48  66.68  198.99  7.8
RE DISCCART  581150.19  4194351.60  66.73  198.99  7.8
RE DISCCART  581155.19  4194351.72  66.79  198.99  7.8
RE DISCCART  581160.19  4194351.84  66.81  198.99  7.8
RE DISCCART  581165.19  4194351.96  66.84  198.99  7.8
RE DISCCART  581170.19  4194352.08  66.85  198.99  7.8
RE DISCCART  581175.18  4194352.19  66.88  198.99  7.8
RE DISCCART  581180.18  4194352.31  66.92  198.99  7.8
RE DISCCART  581110.08  4194355.64  66.68  198.99  7.8
RE DISCCART  581115.08  4194355.76  66.59  198.99  7.8
RE DISCCART  581120.08  4194355.88  66.54  198.99  7.8
RE DISCCART  581125.08  4194356.00  66.51  198.99  7.8
RE DISCCART  581130.08  4194356.12  66.50  198.99  7.8
RE DISCCART  581135.08  4194356.24  66.50  198.99  7.8
RE DISCCART  581140.08  4194356.36  66.50  198.99  7.8
RE DISCCART  581145.07  4194356.48  66.53  198.99  7.8
RE DISCCART  581150.07  4194356.60  66.57  198.99  7.8
```

```
RE DISCCART  581155.07  4194356.72  66.62  198.99  7.8
RE DISCCART  581160.07  4194356.84  66.65  198.99  7.8
RE DISCCART  581165.07  4194356.95  66.68  198.99  7.8
RE DISCCART  581170.07  4194357.07  66.69  198.99  7.8
RE DISCCART  581175.07  4194357.19  66.71  198.99  7.8
RE DISCCART  581180.06  4194357.31  66.73  198.99  7.8
RE DISCCART  581114.96  4194360.76  66.63  198.99  7.8
RE DISCCART  581119.96  4194360.88  66.56  198.99  7.8
RE DISCCART  581124.96  4194361.00  66.52  198.99  7.8
RE DISCCART  581129.96  4194361.12  66.50  198.99  7.8
RE DISCCART  581134.96  4194361.24  66.50  198.99  7.8
RE DISCCART  581139.96  4194361.36  66.51  198.99  7.8
RE DISCCART  581144.95  4194361.48  66.52  198.99  7.8
RE DISCCART  581149.95  4194361.59  66.53  198.99  7.8
RE DISCCART  581154.95  4194361.71  66.56  198.99  7.8
RE DISCCART  581159.95  4194361.83  66.58  198.99  7.8
RE DISCCART  581164.95  4194361.95  66.60  198.99  7.8
RE DISCCART  581169.95  4194362.07  66.62  198.99  7.8
RE DISCCART  581174.95  4194362.19  66.62  198.99  7.8
RE DISCCART  581179.94  4194362.31  66.59  198.99  7.8
RE DISCCART  581119.84  4194365.88  66.59  198.99  7.8
RE DISCCART  581124.84  4194366.00  66.52  198.99  7.8
RE DISCCART  581129.84  4194366.11  66.50  198.99  7.8
RE DISCCART  581134.84  4194366.23  66.50  198.99  7.8
RE DISCCART  581139.84  4194366.35  66.51  198.99  7.8
RE DISCCART  581144.84  4194366.47  66.51  198.99  7.8
RE DISCCART  581149.83  4194366.59  66.51  198.99  7.8
RE DISCCART  581154.83  4194366.71  66.50  198.99  7.8
RE DISCCART  581159.83  4194366.83  66.51  198.99  7.8
RE DISCCART  581164.83  4194366.95  66.52  198.99  7.8
RE DISCCART  581169.83  4194367.07  66.55  198.99  7.8
RE DISCCART  581174.83  4194367.19  66.52  198.99  7.8
RE DISCCART  581179.83  4194367.31  66.46  198.99  7.8
RE DISCCART  581124.72  4194370.99  66.57  198.99  7.8
RE DISCCART  581129.72  4194371.11  66.56  198.99  7.8
RE DISCCART  581134.72  4194371.23  66.56  198.99  7.8
RE DISCCART  581139.72  4194371.35  66.56  198.99  7.8
RE DISCCART  581144.72  4194371.47  66.57  198.99  7.8
RE DISCCART  581149.71  4194371.59  66.56  198.99  7.8
RE DISCCART  581154.71  4194371.71  66.54  198.99  7.8
RE DISCCART  581159.71  4194371.83  66.50  198.99  7.8
RE DISCCART  581164.71  4194371.95  66.46  198.99  7.8
RE DISCCART  581169.71  4194372.07  66.44  198.99  7.8
RE DISCCART  581174.71  4194372.19  66.40  198.99  7.8
RE DISCCART  581179.71  4194372.31  66.34  198.99  7.8
RE DISCCART  581129.60  4194376.11  66.61  198.99  7.8
RE DISCCART  581134.60  4194376.23  66.61  198.99  7.8
RE DISCCART  581139.60  4194376.35  66.62  198.99  7.8
RE DISCCART  581144.60  4194376.47  66.62  198.99  7.8
RE DISCCART  581149.59  4194376.59  66.61  198.99  7.8
RE DISCCART  581154.59  4194376.71  66.57  198.99  7.8
RE DISCCART  581159.59  4194376.83  66.49  198.99  7.8
RE DISCCART  581164.59  4194376.95  66.40  198.99  7.8
RE DISCCART  581169.59  4194377.07  66.33  198.99  7.8
```

```
RE DISCCART  581174.59  4194377.19  66.27  198.99  7.8
RE DISCCART  581179.59  4194377.31  66.23  198.99  7.8
RE DISCCART  581134.48  4194381.23  66.71  198.99  7.8
RE DISCCART  581139.48  4194381.35  66.69  198.99  7.8
RE DISCCART  581144.48  4194381.47  66.65  198.99  7.8
RE DISCCART  581149.47  4194381.59  66.61  198.99  7.8
RE DISCCART  581154.47  4194381.71  66.54  198.99  7.8
RE DISCCART  581159.47  4194381.83  66.47  198.99  7.8
RE DISCCART  581164.47  4194381.95  66.39  198.99  7.8
RE DISCCART  581169.47  4194382.07  66.31  198.99  7.8
RE DISCCART  581174.47  4194382.19  66.24  198.99  7.8
RE DISCCART  581179.47  4194382.31  66.18  198.99  7.8
RE DISCCART  581144.36  4194386.47  66.68  198.99  7.8
RE DISCCART  581149.36  4194386.59  66.60  198.99  7.8
RE DISCCART  581154.35  4194386.71  66.52  198.99  7.8
RE DISCCART  581159.35  4194386.83  66.45  198.99  7.8
RE DISCCART  581164.35  4194386.95  66.38  198.99  7.8
RE DISCCART  581169.35  4194387.06  66.29  198.99  7.8
RE DISCCART  581174.35  4194387.19  66.21  198.99  7.8
RE DISCCART  581179.35  4194387.31  66.15  198.99  7.8
RE DISCCART  581149.24  4194391.59  66.63  198.99  7.8
RE DISCCART  581154.23  4194391.71  66.55  198.99  7.8
RE DISCCART  581159.23  4194391.82  66.47  198.99  7.8
RE DISCCART  581164.23  4194391.94  66.40  198.99  7.8
RE DISCCART  581169.23  4194392.06  66.32  198.99  7.8
RE DISCCART  581174.23  4194392.18  66.26  198.99  7.8
RE DISCCART  581179.23  4194392.30  66.20  198.99  7.8
RE DISCCART  581159.11  4194396.82  66.50  198.99  7.8
RE DISCCART  581164.11  4194396.94  66.41  198.99  7.8
RE DISCCART  581169.11  4194397.06  66.36  198.99  7.8
RE DISCCART  581174.11  4194397.18  66.30  198.99  7.8
RE DISCCART  581179.11  4194397.30  66.25  198.99  7.8
RE DISCCART  581173.99  4194402.18  66.28  198.99  7.8
RE DISCCART  581178.99  4194402.30  66.20  198.99  7.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     243  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581167.10  4194271.98  68.56  198.99  10.8
RE DISCCART  581172.10  4194272.10  68.56  198.99  10.8
RE DISCCART  581177.10  4194272.22  68.53  198.99  10.8
RE DISCCART  581182.10  4194272.34  68.50  198.99  10.8
RE DISCCART  581166.98  4194276.98  68.49  198.99  10.8
RE DISCCART  581171.98  4194277.10  68.50  198.99  10.8
RE DISCCART  581176.98  4194277.22  68.50  198.99  10.8
RE DISCCART  581181.98  4194277.34  68.48  198.99  10.8
RE DISCCART  581166.86  4194281.98  68.41  198.99  10.8
RE DISCCART  581171.86  4194282.10  68.45  198.99  10.8
RE DISCCART  581176.86  4194282.22  68.45  198.99  10.8
RE DISCCART  581181.86  4194282.33  68.45  198.99  10.8
RE DISCCART  581166.74  4194286.97  68.32  198.99  10.8
RE DISCCART  581171.74  4194287.09  68.37  198.99  10.8
RE DISCCART  581176.74  4194287.21  68.39  198.99  10.8
RE DISCCART  581181.74  4194287.33  68.40  198.99  10.8
RE DISCCART  581166.62  4194291.97  68.22  198.99  10.8
RE DISCCART  581171.62  4194292.09  68.27  198.99  10.8
RE DISCCART  581176.62  4194292.21  68.31  198.99  10.8
RE DISCCART  581181.62  4194292.33  68.34  198.99  10.8
RE DISCCART  581166.50  4194296.97  68.13  198.99  10.8
RE DISCCART  581171.50  4194297.09  68.18  198.99  10.8
RE DISCCART  581176.50  4194297.21  68.22  198.99  10.8
RE DISCCART  581181.50  4194297.33  68.26  198.99  10.8
RE DISCCART  581166.38  4194301.97  68.06  198.99  10.8
RE DISCCART  581171.38  4194302.09  68.08  198.99  10.8
RE DISCCART  581176.38  4194302.21  68.12  198.99  10.8
RE DISCCART  581181.38  4194302.33  68.16  198.99  10.8
RE DISCCART  581166.26  4194306.97  68.00  198.99  10.8
RE DISCCART  581171.26  4194307.09  68.01  198.99  10.8
RE DISCCART  581176.26  4194307.21  68.03  198.99  10.8
RE DISCCART  581181.26  4194307.33  68.06  198.99  10.8
RE DISCCART  581166.14  4194311.97  67.95  198.99  10.8
RE DISCCART  581171.14  4194312.09  67.95  198.99  10.8
RE DISCCART  581176.14  4194312.21  67.96  198.99  10.8
RE DISCCART  581181.14  4194312.33  67.97  198.99  10.8
RE DISCCART  581166.03  4194316.97  67.90  198.99  10.8
RE DISCCART  581171.02  4194317.09  67.90  198.99  10.8
RE DISCCART  581176.02  4194317.21  67.90  198.99  10.8
RE DISCCART  581181.02  4194317.32  67.90  198.99  10.8
RE DISCCART  581105.92  4194320.53  67.76  198.99  10.8
RE DISCCART  581110.92  4194320.65  67.70  198.99  10.8
RE DISCCART  581165.91  4194321.96  67.86  198.99  10.8
RE DISCCART  581170.90  4194322.08  67.85  198.99  10.8
RE DISCCART  581175.90  4194322.20  67.85  198.99  10.8
RE DISCCART  581180.90  4194322.32  67.84  198.99  10.8
RE DISCCART  581105.80  4194325.53  67.69  198.99  10.8
```

```
RE DISCCART  581110.80  4194325.65  67.63  198.99  10.8
RE DISCCART  581115.80  4194325.77  67.57  198.99  10.8
RE DISCCART  581165.78  4194326.96  67.78  198.99  10.8
RE DISCCART  581170.78  4194327.08  67.78  198.99  10.8
RE DISCCART  581175.78  4194327.20  67.78  198.99  10.8
RE DISCCART  581180.78  4194327.32  67.79  198.99  10.8
RE DISCCART  581090.69  4194330.17  67.49  198.99  10.8
RE DISCCART  581095.69  4194330.29  67.46  198.99  10.8
RE DISCCART  581100.68  4194330.41  67.41  198.99  10.8
RE DISCCART  581105.68  4194330.53  67.36  198.99  10.8
RE DISCCART  581110.68  4194330.65  67.33  198.99  10.8
RE DISCCART  581115.68  4194330.77  67.30  198.99  10.8
RE DISCCART  581120.68  4194330.89  67.31  198.99  10.8
RE DISCCART  581125.68  4194331.01  67.32  198.99  10.8
RE DISCCART  581130.68  4194331.12  67.34  198.99  10.8
RE DISCCART  581135.67  4194331.24  67.36  198.99  10.8
RE DISCCART  581140.67  4194331.36  67.38  198.99  10.8
RE DISCCART  581145.67  4194331.48  67.42  198.99  10.8
RE DISCCART  581150.67  4194331.60  67.48  198.99  10.8
RE DISCCART  581155.67  4194331.72  67.54  198.99  10.8
RE DISCCART  581160.67  4194331.84  67.60  198.99  10.8
RE DISCCART  581165.67  4194331.96  67.64  198.99  10.8
RE DISCCART  581170.66  4194332.08  67.67  198.99  10.8
RE DISCCART  581175.66  4194332.20  67.70  198.99  10.8
RE DISCCART  581180.66  4194332.32  67.73  198.99  10.8
RE DISCCART  581090.57  4194335.17  67.19  198.99  10.8
RE DISCCART  581095.57  4194335.29  67.14  198.99  10.8
RE DISCCART  581100.57  4194335.41  67.09  198.99  10.8
RE DISCCART  581105.56  4194335.52  67.05  198.99  10.8
RE DISCCART  581110.56  4194335.65  67.04  198.99  10.8
RE DISCCART  581115.56  4194335.76  67.05  198.99  10.8
RE DISCCART  581120.56  4194335.88  67.09  198.99  10.8
RE DISCCART  581125.56  4194336.00  67.13  198.99  10.8
RE DISCCART  581130.56  4194336.12  67.17  198.99  10.8
RE DISCCART  581135.56  4194336.24  67.19  198.99  10.8
RE DISCCART  581140.55  4194336.36  67.20  198.99  10.8
RE DISCCART  581145.55  4194336.48  67.22  198.99  10.8
RE DISCCART  581150.55  4194336.60  67.26  198.99  10.8
RE DISCCART  581155.55  4194336.72  67.33  198.99  10.8
RE DISCCART  581160.55  4194336.84  67.41  198.99  10.8
RE DISCCART  581165.55  4194336.96  67.48  198.99  10.8
RE DISCCART  581170.55  4194337.08  67.52  198.99  10.8
RE DISCCART  581175.54  4194337.20  67.57  198.99  10.8
RE DISCCART  581180.54  4194337.32  67.61  198.99  10.8
RE DISCCART  581090.45  4194340.16  67.07  198.99  10.8
RE DISCCART  581095.45  4194340.29  67.02  198.99  10.8
RE DISCCART  581100.45  4194340.40  66.97  198.99  10.8
RE DISCCART  581105.44  4194340.52  66.92  198.99  10.8
RE DISCCART  581110.44  4194340.64  66.89  198.99  10.8
RE DISCCART  581115.44  4194340.76  66.88  198.99  10.8
RE DISCCART  581120.44  4194340.88  66.90  198.99  10.8
RE DISCCART  581125.44  4194341.00  66.92  198.99  10.8
RE DISCCART  581130.44  4194341.12  66.93  198.99  10.8
RE DISCCART  581135.44  4194341.24  66.95  198.99  10.8
```

```
RE DISCCART  581140.43  4194341.36  66.97  198.99  10.8
RE DISCCART  581145.43  4194341.48  67.03  198.99  10.8
RE DISCCART  581150.43  4194341.60  67.09  198.99  10.8
RE DISCCART  581155.43  4194341.72  67.15  198.99  10.8
RE DISCCART  581160.43  4194341.84  67.19  198.99  10.8
RE DISCCART  581165.43  4194341.96  67.23  198.99  10.8
RE DISCCART  581170.43  4194342.08  67.27  198.99  10.8
RE DISCCART  581175.42  4194342.20  67.32  198.99  10.8
RE DISCCART  581180.42  4194342.32  67.36  198.99  10.8
RE DISCCART  581090.33  4194345.16  66.95  198.99  10.8
RE DISCCART  581095.33  4194345.28  66.90  198.99  10.8
RE DISCCART  581100.33  4194345.40  66.85  198.99  10.8
RE DISCCART  581105.32  4194345.52  66.80  198.99  10.8
RE DISCCART  581110.32  4194345.64  66.75  198.99  10.8
RE DISCCART  581115.32  4194345.76  66.72  198.99  10.8
RE DISCCART  581120.32  4194345.88  66.71  198.99  10.8
RE DISCCART  581125.32  4194346.00  66.71  198.99  10.8
RE DISCCART  581130.32  4194346.12  66.71  198.99  10.8
RE DISCCART  581135.32  4194346.24  66.73  198.99  10.8
RE DISCCART  581140.31  4194346.36  66.76  198.99  10.8
RE DISCCART  581145.31  4194346.48  66.84  198.99  10.8
RE DISCCART  581150.31  4194346.60  66.91  198.99  10.8
RE DISCCART  581155.31  4194346.72  66.97  198.99  10.8
RE DISCCART  581160.31  4194346.84  66.99  198.99  10.8
RE DISCCART  581165.31  4194346.96  67.00  198.99  10.8
RE DISCCART  581170.31  4194347.08  67.04  198.99  10.8
RE DISCCART  581175.30  4194347.20  67.08  198.99  10.8
RE DISCCART  581180.30  4194347.32  67.12  198.99  10.8
RE DISCCART  581100.21  4194350.40  66.85  198.99  10.8
RE DISCCART  581105.21  4194350.52  66.78  198.99  10.8
RE DISCCART  581110.20  4194350.64  66.72  198.99  10.8
RE DISCCART  581115.20  4194350.76  66.65  198.99  10.8
RE DISCCART  581120.20  4194350.88  66.63  198.99  10.8
RE DISCCART  581125.20  4194351.00  66.61  198.99  10.8
RE DISCCART  581130.20  4194351.12  66.60  198.99  10.8
RE DISCCART  581135.20  4194351.24  66.61  198.99  10.8
RE DISCCART  581140.19  4194351.36  66.63  198.99  10.8
RE DISCCART  581145.19  4194351.48  66.68  198.99  10.8
RE DISCCART  581150.19  4194351.60  66.73  198.99  10.8
RE DISCCART  581155.19  4194351.72  66.79  198.99  10.8
RE DISCCART  581160.19  4194351.84  66.81  198.99  10.8
RE DISCCART  581165.19  4194351.96  66.84  198.99  10.8
RE DISCCART  581170.19  4194352.08  66.85  198.99  10.8
RE DISCCART  581175.18  4194352.19  66.88  198.99  10.8
RE DISCCART  581180.18  4194352.31  66.92  198.99  10.8
RE DISCCART  581110.08  4194355.64  66.68  198.99  10.8
RE DISCCART  581115.08  4194355.76  66.59  198.99  10.8
RE DISCCART  581120.08  4194355.88  66.54  198.99  10.8
RE DISCCART  581125.08  4194356.00  66.51  198.99  10.8
RE DISCCART  581130.08  4194356.12  66.50  198.99  10.8
RE DISCCART  581135.08  4194356.24  66.50  198.99  10.8
RE DISCCART  581140.08  4194356.36  66.50  198.99  10.8
RE DISCCART  581145.07  4194356.48  66.53  198.99  10.8
RE DISCCART  581150.07  4194356.60  66.57  198.99  10.8
```

```
RE DISCCART  581155.07  4194356.72  66.62  198.99  10.8
RE DISCCART  581160.07  4194356.84  66.65  198.99  10.8
RE DISCCART  581165.07  4194356.95  66.68  198.99  10.8
RE DISCCART  581170.07  4194357.07  66.69  198.99  10.8
RE DISCCART  581175.07  4194357.19  66.71  198.99  10.8
RE DISCCART  581180.06  4194357.31  66.73  198.99  10.8
RE DISCCART  581114.96  4194360.76  66.63  198.99  10.8
RE DISCCART  581119.96  4194360.88  66.56  198.99  10.8
RE DISCCART  581124.96  4194361.00  66.52  198.99  10.8
RE DISCCART  581129.96  4194361.12  66.50  198.99  10.8
RE DISCCART  581134.96  4194361.24  66.50  198.99  10.8
RE DISCCART  581139.96  4194361.36  66.51  198.99  10.8
RE DISCCART  581144.95  4194361.48  66.52  198.99  10.8
RE DISCCART  581149.95  4194361.59  66.53  198.99  10.8
RE DISCCART  581154.95  4194361.71  66.56  198.99  10.8
RE DISCCART  581159.95  4194361.83  66.58  198.99  10.8
RE DISCCART  581164.95  4194361.95  66.60  198.99  10.8
RE DISCCART  581169.95  4194362.07  66.62  198.99  10.8
RE DISCCART  581174.95  4194362.19  66.62  198.99  10.8
RE DISCCART  581179.94  4194362.31  66.59  198.99  10.8
RE DISCCART  581119.84  4194365.88  66.59  198.99  10.8
RE DISCCART  581124.84  4194366.00  66.52  198.99  10.8
RE DISCCART  581129.84  4194366.11  66.50  198.99  10.8
RE DISCCART  581134.84  4194366.23  66.50  198.99  10.8
RE DISCCART  581139.84  4194366.35  66.51  198.99  10.8
RE DISCCART  581144.84  4194366.47  66.51  198.99  10.8
RE DISCCART  581149.83  4194366.59  66.51  198.99  10.8
RE DISCCART  581154.83  4194366.71  66.50  198.99  10.8
RE DISCCART  581159.83  4194366.83  66.51  198.99  10.8
RE DISCCART  581164.83  4194366.95  66.52  198.99  10.8
RE DISCCART  581169.83  4194367.07  66.55  198.99  10.8
RE DISCCART  581174.83  4194367.19  66.52  198.99  10.8
RE DISCCART  581179.83  4194367.31  66.46  198.99  10.8
RE DISCCART  581124.72  4194370.99  66.57  198.99  10.8
RE DISCCART  581129.72  4194371.11  66.56  198.99  10.8
RE DISCCART  581134.72  4194371.23  66.56  198.99  10.8
RE DISCCART  581139.72  4194371.35  66.56  198.99  10.8
RE DISCCART  581144.72  4194371.47  66.57  198.99  10.8
RE DISCCART  581149.71  4194371.59  66.56  198.99  10.8
RE DISCCART  581154.71  4194371.71  66.54  198.99  10.8
RE DISCCART  581159.71  4194371.83  66.50  198.99  10.8
RE DISCCART  581164.71  4194371.95  66.46  198.99  10.8
RE DISCCART  581169.71  4194372.07  66.44  198.99  10.8
RE DISCCART  581174.71  4194372.19  66.40  198.99  10.8
RE DISCCART  581179.71  4194372.31  66.34  198.99  10.8
RE DISCCART  581129.60  4194376.11  66.61  198.99  10.8
RE DISCCART  581134.60  4194376.23  66.61  198.99  10.8
RE DISCCART  581139.60  4194376.35  66.62  198.99  10.8
RE DISCCART  581144.60  4194376.47  66.62  198.99  10.8
RE DISCCART  581149.59  4194376.59  66.61  198.99  10.8
RE DISCCART  581154.59  4194376.71  66.57  198.99  10.8
RE DISCCART  581159.59  4194376.83  66.49  198.99  10.8
RE DISCCART  581164.59  4194376.95  66.40  198.99  10.8
RE DISCCART  581169.59  4194377.07  66.33  198.99  10.8
```

```
RE DISCCART  581174.59  4194377.19  66.27  198.99  10.8
RE DISCCART  581179.59  4194377.31  66.23  198.99  10.8
RE DISCCART  581134.48  4194381.23  66.71  198.99  10.8
RE DISCCART  581139.48  4194381.35  66.69  198.99  10.8
RE DISCCART  581144.48  4194381.47  66.65  198.99  10.8
RE DISCCART  581149.47  4194381.59  66.61  198.99  10.8
RE DISCCART  581154.47  4194381.71  66.54  198.99  10.8
RE DISCCART  581159.47  4194381.83  66.47  198.99  10.8
RE DISCCART  581164.47  4194381.95  66.39  198.99  10.8
RE DISCCART  581169.47  4194382.07  66.31  198.99  10.8
RE DISCCART  581174.47  4194382.19  66.24  198.99  10.8
RE DISCCART  581179.47  4194382.31  66.18  198.99  10.8
RE DISCCART  581144.36  4194386.47  66.68  198.99  10.8
RE DISCCART  581149.36  4194386.59  66.60  198.99  10.8
RE DISCCART  581154.35  4194386.71  66.52  198.99  10.8
RE DISCCART  581159.35  4194386.83  66.45  198.99  10.8
RE DISCCART  581164.35  4194386.95  66.38  198.99  10.8
RE DISCCART  581169.35  4194387.06  66.29  198.99  10.8
RE DISCCART  581174.35  4194387.19  66.21  198.99  10.8
RE DISCCART  581179.35  4194387.31  66.15  198.99  10.8
RE DISCCART  581149.24  4194391.59  66.63  198.99  10.8
RE DISCCART  581154.23  4194391.71  66.55  198.99  10.8
RE DISCCART  581159.23  4194391.82  66.47  198.99  10.8
RE DISCCART  581164.23  4194391.94  66.40  198.99  10.8
RE DISCCART  581169.23  4194392.06  66.32  198.99  10.8
RE DISCCART  581174.23  4194392.18  66.26  198.99  10.8
RE DISCCART  581179.23  4194392.30  66.20  198.99  10.8
RE DISCCART  581159.11  4194396.82  66.50  198.99  10.8
RE DISCCART  581164.11  4194396.94  66.41  198.99  10.8
RE DISCCART  581169.11  4194397.06  66.36  198.99  10.8
RE DISCCART  581174.11  4194397.18  66.30  198.99  10.8
RE DISCCART  581179.11  4194397.30  66.25  198.99  10.8
RE DISCCART  581173.99  4194402.18  66.28  198.99  10.8
RE DISCCART  581178.99  4194402.30  66.20  198.99  10.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of     243  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581167.10  4194271.98  68.56  198.99  13.8
RE DISCCART  581172.10  4194272.10  68.56  198.99  13.8
RE DISCCART  581177.10  4194272.22  68.53  198.99  13.8
RE DISCCART  581182.10  4194272.34  68.50  198.99  13.8
RE DISCCART  581166.98  4194276.98  68.49  198.99  13.8
RE DISCCART  581171.98  4194277.10  68.50  198.99  13.8
RE DISCCART  581176.98  4194277.22  68.50  198.99  13.8
RE DISCCART  581181.98  4194277.34  68.48  198.99  13.8
RE DISCCART  581166.86  4194281.98  68.41  198.99  13.8
RE DISCCART  581171.86  4194282.10  68.45  198.99  13.8
RE DISCCART  581176.86  4194282.22  68.45  198.99  13.8
RE DISCCART  581181.86  4194282.33  68.45  198.99  13.8
RE DISCCART  581166.74  4194286.97  68.32  198.99  13.8
RE DISCCART  581171.74  4194287.09  68.37  198.99  13.8
RE DISCCART  581176.74  4194287.21  68.39  198.99  13.8
RE DISCCART  581181.74  4194287.33  68.40  198.99  13.8
RE DISCCART  581166.62  4194291.97  68.22  198.99  13.8
RE DISCCART  581171.62  4194292.09  68.27  198.99  13.8
RE DISCCART  581176.62  4194292.21  68.31  198.99  13.8
RE DISCCART  581181.62  4194292.33  68.34  198.99  13.8
RE DISCCART  581166.50  4194296.97  68.13  198.99  13.8
RE DISCCART  581171.50  4194297.09  68.18  198.99  13.8
RE DISCCART  581176.50  4194297.21  68.22  198.99  13.8
RE DISCCART  581181.50  4194297.33  68.26  198.99  13.8
RE DISCCART  581166.38  4194301.97  68.06  198.99  13.8
RE DISCCART  581171.38  4194302.09  68.08  198.99  13.8
RE DISCCART  581176.38  4194302.21  68.12  198.99  13.8
RE DISCCART  581181.38  4194302.33  68.16  198.99  13.8
RE DISCCART  581166.26  4194306.97  68.00  198.99  13.8
RE DISCCART  581171.26  4194307.09  68.01  198.99  13.8
RE DISCCART  581176.26  4194307.21  68.03  198.99  13.8
RE DISCCART  581181.26  4194307.33  68.06  198.99  13.8
RE DISCCART  581166.14  4194311.97  67.95  198.99  13.8
RE DISCCART  581171.14  4194312.09  67.95  198.99  13.8
RE DISCCART  581176.14  4194312.21  67.96  198.99  13.8
RE DISCCART  581181.14  4194312.33  67.97  198.99  13.8
RE DISCCART  581166.03  4194316.97  67.90  198.99  13.8
RE DISCCART  581171.02  4194317.09  67.90  198.99  13.8
RE DISCCART  581176.02  4194317.21  67.90  198.99  13.8
RE DISCCART  581181.02  4194317.32  67.90  198.99  13.8
RE DISCCART  581105.92  4194320.53  67.76  198.99  13.8
RE DISCCART  581110.92  4194320.65  67.70  198.99  13.8
RE DISCCART  581165.91  4194321.96  67.86  198.99  13.8
RE DISCCART  581170.90  4194322.08  67.85  198.99  13.8
RE DISCCART  581175.90  4194322.20  67.85  198.99  13.8
RE DISCCART  581180.90  4194322.32  67.84  198.99  13.8
RE DISCCART  581105.80  4194325.53  67.69  198.99  13.8
```

```
RE DISCCART  581110.80  4194325.65  67.63  198.99  13.8
RE DISCCART  581115.80  4194325.77  67.57  198.99  13.8
RE DISCCART  581165.78  4194326.96  67.78  198.99  13.8
RE DISCCART  581170.78  4194327.08  67.78  198.99  13.8
RE DISCCART  581175.78  4194327.20  67.78  198.99  13.8
RE DISCCART  581180.78  4194327.32  67.79  198.99  13.8
RE DISCCART  581090.69  4194330.17  67.49  198.99  13.8
RE DISCCART  581095.69  4194330.29  67.46  198.99  13.8
RE DISCCART  581100.68  4194330.41  67.41  198.99  13.8
RE DISCCART  581105.68  4194330.53  67.36  198.99  13.8
RE DISCCART  581110.68  4194330.65  67.33  198.99  13.8
RE DISCCART  581115.68  4194330.77  67.30  198.99  13.8
RE DISCCART  581120.68  4194330.89  67.31  198.99  13.8
RE DISCCART  581125.68  4194331.01  67.32  198.99  13.8
RE DISCCART  581130.68  4194331.12  67.34  198.99  13.8
RE DISCCART  581135.67  4194331.24  67.36  198.99  13.8
RE DISCCART  581140.67  4194331.36  67.38  198.99  13.8
RE DISCCART  581145.67  4194331.48  67.42  198.99  13.8
RE DISCCART  581150.67  4194331.60  67.48  198.99  13.8
RE DISCCART  581155.67  4194331.72  67.54  198.99  13.8
RE DISCCART  581160.67  4194331.84  67.60  198.99  13.8
RE DISCCART  581165.67  4194331.96  67.64  198.99  13.8
RE DISCCART  581170.66  4194332.08  67.67  198.99  13.8
RE DISCCART  581175.66  4194332.20  67.70  198.99  13.8
RE DISCCART  581180.66  4194332.32  67.73  198.99  13.8
RE DISCCART  581090.57  4194335.17  67.19  198.99  13.8
RE DISCCART  581095.57  4194335.29  67.14  198.99  13.8
RE DISCCART  581100.57  4194335.41  67.09  198.99  13.8
RE DISCCART  581105.56  4194335.52  67.05  198.99  13.8
RE DISCCART  581110.56  4194335.65  67.04  198.99  13.8
RE DISCCART  581115.56  4194335.76  67.05  198.99  13.8
RE DISCCART  581120.56  4194335.88  67.09  198.99  13.8
RE DISCCART  581125.56  4194336.00  67.13  198.99  13.8
RE DISCCART  581130.56  4194336.12  67.17  198.99  13.8
RE DISCCART  581135.56  4194336.24  67.19  198.99  13.8
RE DISCCART  581140.55  4194336.36  67.20  198.99  13.8
RE DISCCART  581145.55  4194336.48  67.22  198.99  13.8
RE DISCCART  581150.55  4194336.60  67.26  198.99  13.8
RE DISCCART  581155.55  4194336.72  67.33  198.99  13.8
RE DISCCART  581160.55  4194336.84  67.41  198.99  13.8
RE DISCCART  581165.55  4194336.96  67.48  198.99  13.8
RE DISCCART  581170.55  4194337.08  67.52  198.99  13.8
RE DISCCART  581175.54  4194337.20  67.57  198.99  13.8
RE DISCCART  581180.54  4194337.32  67.61  198.99  13.8
RE DISCCART  581090.45  4194340.16  67.07  198.99  13.8
RE DISCCART  581095.45  4194340.29  67.02  198.99  13.8
RE DISCCART  581100.45  4194340.40  66.97  198.99  13.8
RE DISCCART  581105.44  4194340.52  66.92  198.99  13.8
RE DISCCART  581110.44  4194340.64  66.89  198.99  13.8
RE DISCCART  581115.44  4194340.76  66.88  198.99  13.8
RE DISCCART  581120.44  4194340.88  66.90  198.99  13.8
RE DISCCART  581125.44  4194341.00  66.92  198.99  13.8
RE DISCCART  581130.44  4194341.12  66.93  198.99  13.8
RE DISCCART  581135.44  4194341.24  66.95  198.99  13.8
```

```
RE DISCCART  581140.43  4194341.36  66.97  198.99  13.8
RE DISCCART  581145.43  4194341.48  67.03  198.99  13.8
RE DISCCART  581150.43  4194341.60  67.09  198.99  13.8
RE DISCCART  581155.43  4194341.72  67.15  198.99  13.8
RE DISCCART  581160.43  4194341.84  67.19  198.99  13.8
RE DISCCART  581165.43  4194341.96  67.23  198.99  13.8
RE DISCCART  581170.43  4194342.08  67.27  198.99  13.8
RE DISCCART  581175.42  4194342.20  67.32  198.99  13.8
RE DISCCART  581180.42  4194342.32  67.36  198.99  13.8
RE DISCCART  581090.33  4194345.16  66.95  198.99  13.8
RE DISCCART  581095.33  4194345.28  66.90  198.99  13.8
RE DISCCART  581100.33  4194345.40  66.85  198.99  13.8
RE DISCCART  581105.32  4194345.52  66.80  198.99  13.8
RE DISCCART  581110.32  4194345.64  66.75  198.99  13.8
RE DISCCART  581115.32  4194345.76  66.72  198.99  13.8
RE DISCCART  581120.32  4194345.88  66.71  198.99  13.8
RE DISCCART  581125.32  4194346.00  66.71  198.99  13.8
RE DISCCART  581130.32  4194346.12  66.71  198.99  13.8
RE DISCCART  581135.32  4194346.24  66.73  198.99  13.8
RE DISCCART  581140.31  4194346.36  66.76  198.99  13.8
RE DISCCART  581145.31  4194346.48  66.84  198.99  13.8
RE DISCCART  581150.31  4194346.60  66.91  198.99  13.8
RE DISCCART  581155.31  4194346.72  66.97  198.99  13.8
RE DISCCART  581160.31  4194346.84  66.99  198.99  13.8
RE DISCCART  581165.31  4194346.96  67.00  198.99  13.8
RE DISCCART  581170.31  4194347.08  67.04  198.99  13.8
RE DISCCART  581175.30  4194347.20  67.08  198.99  13.8
RE DISCCART  581180.30  4194347.32  67.12  198.99  13.8
RE DISCCART  581100.21  4194350.40  66.85  198.99  13.8
RE DISCCART  581105.21  4194350.52  66.78  198.99  13.8
RE DISCCART  581110.20  4194350.64  66.72  198.99  13.8
RE DISCCART  581115.20  4194350.76  66.65  198.99  13.8
RE DISCCART  581120.20  4194350.88  66.63  198.99  13.8
RE DISCCART  581125.20  4194351.00  66.61  198.99  13.8
RE DISCCART  581130.20  4194351.12  66.60  198.99  13.8
RE DISCCART  581135.20  4194351.24  66.61  198.99  13.8
RE DISCCART  581140.19  4194351.36  66.63  198.99  13.8
RE DISCCART  581145.19  4194351.48  66.68  198.99  13.8
RE DISCCART  581150.19  4194351.60  66.73  198.99  13.8
RE DISCCART  581155.19  4194351.72  66.79  198.99  13.8
RE DISCCART  581160.19  4194351.84  66.81  198.99  13.8
RE DISCCART  581165.19  4194351.96  66.84  198.99  13.8
RE DISCCART  581170.19  4194352.08  66.85  198.99  13.8
RE DISCCART  581175.18  4194352.19  66.88  198.99  13.8
RE DISCCART  581180.18  4194352.31  66.92  198.99  13.8
RE DISCCART  581110.08  4194355.64  66.68  198.99  13.8
RE DISCCART  581115.08  4194355.76  66.59  198.99  13.8
RE DISCCART  581120.08  4194355.88  66.54  198.99  13.8
RE DISCCART  581125.08  4194356.00  66.51  198.99  13.8
RE DISCCART  581130.08  4194356.12  66.50  198.99  13.8
RE DISCCART  581135.08  4194356.24  66.50  198.99  13.8
RE DISCCART  581140.08  4194356.36  66.50  198.99  13.8
RE DISCCART  581145.07  4194356.48  66.53  198.99  13.8
RE DISCCART  581150.07  4194356.60  66.57  198.99  13.8
```

```
RE DISCCART  581155.07  4194356.72  66.62  198.99  13.8
RE DISCCART  581160.07  4194356.84  66.65  198.99  13.8
RE DISCCART  581165.07  4194356.95  66.68  198.99  13.8
RE DISCCART  581170.07  4194357.07  66.69  198.99  13.8
RE DISCCART  581175.07  4194357.19  66.71  198.99  13.8
RE DISCCART  581180.06  4194357.31  66.73  198.99  13.8
RE DISCCART  581114.96  4194360.76  66.63  198.99  13.8
RE DISCCART  581119.96  4194360.88  66.56  198.99  13.8
RE DISCCART  581124.96  4194361.00  66.52  198.99  13.8
RE DISCCART  581129.96  4194361.12  66.50  198.99  13.8
RE DISCCART  581134.96  4194361.24  66.50  198.99  13.8
RE DISCCART  581139.96  4194361.36  66.51  198.99  13.8
RE DISCCART  581144.95  4194361.48  66.52  198.99  13.8
RE DISCCART  581149.95  4194361.59  66.53  198.99  13.8
RE DISCCART  581154.95  4194361.71  66.56  198.99  13.8
RE DISCCART  581159.95  4194361.83  66.58  198.99  13.8
RE DISCCART  581164.95  4194361.95  66.60  198.99  13.8
RE DISCCART  581169.95  4194362.07  66.62  198.99  13.8
RE DISCCART  581174.95  4194362.19  66.62  198.99  13.8
RE DISCCART  581179.94  4194362.31  66.59  198.99  13.8
RE DISCCART  581119.84  4194365.88  66.59  198.99  13.8
RE DISCCART  581124.84  4194366.00  66.52  198.99  13.8
RE DISCCART  581129.84  4194366.11  66.50  198.99  13.8
RE DISCCART  581134.84  4194366.23  66.50  198.99  13.8
RE DISCCART  581139.84  4194366.35  66.51  198.99  13.8
RE DISCCART  581144.84  4194366.47  66.51  198.99  13.8
RE DISCCART  581149.83  4194366.59  66.51  198.99  13.8
RE DISCCART  581154.83  4194366.71  66.50  198.99  13.8
RE DISCCART  581159.83  4194366.83  66.51  198.99  13.8
RE DISCCART  581164.83  4194366.95  66.52  198.99  13.8
RE DISCCART  581169.83  4194367.07  66.55  198.99  13.8
RE DISCCART  581174.83  4194367.19  66.52  198.99  13.8
RE DISCCART  581179.83  4194367.31  66.46  198.99  13.8
RE DISCCART  581124.72  4194370.99  66.57  198.99  13.8
RE DISCCART  581129.72  4194371.11  66.56  198.99  13.8
RE DISCCART  581134.72  4194371.23  66.56  198.99  13.8
RE DISCCART  581139.72  4194371.35  66.56  198.99  13.8
RE DISCCART  581144.72  4194371.47  66.57  198.99  13.8
RE DISCCART  581149.71  4194371.59  66.56  198.99  13.8
RE DISCCART  581154.71  4194371.71  66.54  198.99  13.8
RE DISCCART  581159.71  4194371.83  66.50  198.99  13.8
RE DISCCART  581164.71  4194371.95  66.46  198.99  13.8
RE DISCCART  581169.71  4194372.07  66.44  198.99  13.8
RE DISCCART  581174.71  4194372.19  66.40  198.99  13.8
RE DISCCART  581179.71  4194372.31  66.34  198.99  13.8
RE DISCCART  581129.60  4194376.11  66.61  198.99  13.8
RE DISCCART  581134.60  4194376.23  66.61  198.99  13.8
RE DISCCART  581139.60  4194376.35  66.62  198.99  13.8
RE DISCCART  581144.60  4194376.47  66.62  198.99  13.8
RE DISCCART  581149.59  4194376.59  66.61  198.99  13.8
RE DISCCART  581154.59  4194376.71  66.57  198.99  13.8
RE DISCCART  581159.59  4194376.83  66.49  198.99  13.8
RE DISCCART  581164.59  4194376.95  66.40  198.99  13.8
RE DISCCART  581169.59  4194377.07  66.33  198.99  13.8
```

```
RE DISCCART  581174.59  4194377.19  66.27  198.99  13.8
RE DISCCART  581179.59  4194377.31  66.23  198.99  13.8
RE DISCCART  581134.48  4194381.23  66.71  198.99  13.8
RE DISCCART  581139.48  4194381.35  66.69  198.99  13.8
RE DISCCART  581144.48  4194381.47  66.65  198.99  13.8
RE DISCCART  581149.47  4194381.59  66.61  198.99  13.8
RE DISCCART  581154.47  4194381.71  66.54  198.99  13.8
RE DISCCART  581159.47  4194381.83  66.47  198.99  13.8
RE DISCCART  581164.47  4194381.95  66.39  198.99  13.8
RE DISCCART  581169.47  4194382.07  66.31  198.99  13.8
RE DISCCART  581174.47  4194382.19  66.24  198.99  13.8
RE DISCCART  581179.47  4194382.31  66.18  198.99  13.8
RE DISCCART  581144.36  4194386.47  66.68  198.99  13.8
RE DISCCART  581149.36  4194386.59  66.60  198.99  13.8
RE DISCCART  581154.35  4194386.71  66.52  198.99  13.8
RE DISCCART  581159.35  4194386.83  66.45  198.99  13.8
RE DISCCART  581164.35  4194386.95  66.38  198.99  13.8
RE DISCCART  581169.35  4194387.06  66.29  198.99  13.8
RE DISCCART  581174.35  4194387.19  66.21  198.99  13.8
RE DISCCART  581179.35  4194387.31  66.15  198.99  13.8
RE DISCCART  581149.24  4194391.59  66.63  198.99  13.8
RE DISCCART  581154.23  4194391.71  66.55  198.99  13.8
RE DISCCART  581159.23  4194391.82  66.47  198.99  13.8
RE DISCCART  581164.23  4194391.94  66.40  198.99  13.8
RE DISCCART  581169.23  4194392.06  66.32  198.99  13.8
RE DISCCART  581174.23  4194392.18  66.26  198.99  13.8
RE DISCCART  581179.23  4194392.30  66.20  198.99  13.8
RE DISCCART  581159.11  4194396.82  66.50  198.99  13.8
RE DISCCART  581164.11  4194396.94  66.41  198.99  13.8
RE DISCCART  581169.11  4194397.06  66.36  198.99  13.8
RE DISCCART  581174.11  4194397.18  66.30  198.99  13.8
RE DISCCART  581179.11  4194397.30  66.25  198.99  13.8
RE DISCCART  581173.99  4194402.18  66.28  198.99  13.8
RE DISCCART  581178.99  4194402.30  66.20  198.99  13.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of      80  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581072.37  4194259.71  68.39  198.99  1.8
RE DISCCART  581077.37  4194259.83  68.50  198.99  1.8
RE DISCCART  581082.36  4194259.95  68.52  198.99  1.8
RE DISCCART  581087.36  4194260.07  68.46  198.99  1.8
RE DISCCART  581067.25  4194264.59  68.10  198.99  1.8
RE DISCCART  581072.25  4194264.71  68.26  198.99  1.8
RE DISCCART  581077.25  4194264.83  68.37  198.99  1.8
RE DISCCART  581082.25  4194264.95  68.40  198.99  1.8
RE DISCCART  581087.24  4194265.07  68.34  198.99  1.8
RE DISCCART  581062.13  4194269.47  67.94  198.99  1.8
RE DISCCART  581067.13  4194269.59  67.99  198.99  1.8
RE DISCCART  581072.13  4194269.71  68.11  198.99  1.8
RE DISCCART  581077.13  4194269.83  68.21  198.99  1.8
RE DISCCART  581082.13  4194269.95  68.29  198.99  1.8
RE DISCCART  581087.12  4194270.07  68.28  198.99  1.8
RE DISCCART  581052.01  4194274.23  67.91  198.99  1.8
RE DISCCART  581057.01  4194274.35  67.90  198.99  1.8
RE DISCCART  581062.01  4194274.47  67.90  198.99  1.8
RE DISCCART  581067.01  4194274.59  67.92  198.99  1.8
RE DISCCART  581072.01  4194274.71  67.99  198.99  1.8
RE DISCCART  581077.01  4194274.83  68.08  198.99  1.8
RE DISCCART  581082.01  4194274.95  68.18  198.99  1.8
RE DISCCART  581087.00  4194275.06  68.21  198.99  1.8
RE DISCCART  581046.90  4194279.11  67.91  198.99  1.8
RE DISCCART  581051.89  4194279.23  67.91  198.99  1.8
RE DISCCART  581056.89  4194279.35  67.91  198.99  1.8
RE DISCCART  581061.89  4194279.47  67.90  198.99  1.8
RE DISCCART  581066.89  4194279.58  67.90  198.99  1.8
RE DISCCART  581071.89  4194279.70  67.95  198.99  1.8
RE DISCCART  581076.89  4194279.82  68.01  198.99  1.8
RE DISCCART  581081.89  4194279.94  68.09  198.99  1.8
RE DISCCART  581086.88  4194280.06  68.12  198.99  1.8
RE DISCCART  581051.77  4194284.22  67.91  198.99  1.8
RE DISCCART  581056.77  4194284.34  67.91  198.99  1.8
RE DISCCART  581061.77  4194284.46  67.91  198.99  1.8
RE DISCCART  581066.77  4194284.58  67.90  198.99  1.8
RE DISCCART  581071.77  4194284.70  67.92  198.99  1.8
RE DISCCART  581076.77  4194284.82  67.95  198.99  1.8
RE DISCCART  581081.77  4194284.94  68.01  198.99  1.8
RE DISCCART  581086.77  4194285.06  68.04  198.99  1.8
RE DISCCART  581056.65  4194289.34  67.92  198.99  1.8
RE DISCCART  581061.65  4194289.46  67.92  198.99  1.8
RE DISCCART  581066.65  4194289.58  67.91  198.99  1.8
RE DISCCART  581071.65  4194289.70  67.91  198.99  1.8
RE DISCCART  581076.65  4194289.82  67.93  198.99  1.8
RE DISCCART  581081.65  4194289.94  67.96  198.99  1.8
RE DISCCART  581086.65  4194290.06  67.99  198.99  1.8
```

```
RE DISCCART  581061.53  4194294.46  67.91  198.99  1.8
RE DISCCART  581066.53  4194294.58  67.91  198.99  1.8
RE DISCCART  581071.53  4194294.70  67.91  198.99  1.8
RE DISCCART  581076.53  4194294.82  67.91  198.99  1.8
RE DISCCART  581081.53  4194294.94  67.93  198.99  1.8
RE DISCCART  581086.53  4194295.06  67.95  198.99  1.8
RE DISCCART  581061.41  4194299.46  67.83  198.99  1.8
RE DISCCART  581066.41  4194299.58  67.85  198.99  1.8
RE DISCCART  581071.41  4194299.70  67.88  198.99  1.8
RE DISCCART  581076.41  4194299.82  67.91  198.99  1.8
RE DISCCART  581081.41  4194299.94  67.92  198.99  1.8
RE DISCCART  581086.41  4194300.06  67.94  198.99  1.8
RE DISCCART  581066.29  4194304.58  67.80  198.99  1.8
RE DISCCART  581071.29  4194304.70  67.86  198.99  1.8
RE DISCCART  581076.29  4194304.82  67.91  198.99  1.8
RE DISCCART  581081.29  4194304.94  67.92  198.99  1.8
RE DISCCART  581086.29  4194305.06  67.92  198.99  1.8
RE DISCCART  581071.17  4194309.69  67.81  198.99  1.8
RE DISCCART  581076.17  4194309.81  67.87  198.99  1.8
RE DISCCART  581081.17  4194309.94  67.88  198.99  1.8
RE DISCCART  581086.17  4194310.05  67.89  198.99  1.8
RE DISCCART  581071.05  4194314.69  67.75  198.99  1.8
RE DISCCART  581076.05  4194314.81  67.82  198.99  1.8
RE DISCCART  581081.05  4194314.93  67.83  198.99  1.8
RE DISCCART  581086.05  4194315.05  67.86  198.99  1.8
RE DISCCART  581075.93  4194319.81  67.74  198.99  1.8
RE DISCCART  581080.93  4194319.93  67.78  198.99  1.8
RE DISCCART  581085.93  4194320.05  67.82  198.99  1.8
RE DISCCART  581080.81  4194324.93  67.71  198.99  1.8
RE DISCCART  581085.81  4194325.05  67.76  198.99  1.8
RE DISCCART  581080.69  4194329.93  67.49  198.99  1.8
RE DISCCART  581085.69  4194330.05  67.49  198.99  1.8
RE DISCCART  581085.57  4194335.05  67.24  198.99  1.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of      80  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581072.37  4194259.71  68.39  198.99  4.8
RE DISCCART  581077.37  4194259.83  68.50  198.99  4.8
RE DISCCART  581082.36  4194259.95  68.52  198.99  4.8
RE DISCCART  581087.36  4194260.07  68.46  198.99  4.8
RE DISCCART  581067.25  4194264.59  68.10  198.99  4.8
RE DISCCART  581072.25  4194264.71  68.26  198.99  4.8
RE DISCCART  581077.25  4194264.83  68.37  198.99  4.8
RE DISCCART  581082.25  4194264.95  68.40  198.99  4.8
RE DISCCART  581087.24  4194265.07  68.34  198.99  4.8
RE DISCCART  581062.13  4194269.47  67.94  198.99  4.8
RE DISCCART  581067.13  4194269.59  67.99  198.99  4.8
RE DISCCART  581072.13  4194269.71  68.11  198.99  4.8
RE DISCCART  581077.13  4194269.83  68.21  198.99  4.8
RE DISCCART  581082.13  4194269.95  68.29  198.99  4.8
RE DISCCART  581087.12  4194270.07  68.28  198.99  4.8
RE DISCCART  581052.01  4194274.23  67.91  198.99  4.8
RE DISCCART  581057.01  4194274.35  67.90  198.99  4.8
RE DISCCART  581062.01  4194274.47  67.90  198.99  4.8
RE DISCCART  581067.01  4194274.59  67.92  198.99  4.8
RE DISCCART  581072.01  4194274.71  67.99  198.99  4.8
RE DISCCART  581077.01  4194274.83  68.08  198.99  4.8
RE DISCCART  581082.01  4194274.95  68.18  198.99  4.8
RE DISCCART  581087.00  4194275.06  68.21  198.99  4.8
RE DISCCART  581046.90  4194279.11  67.91  198.99  4.8
RE DISCCART  581051.89  4194279.23  67.91  198.99  4.8
RE DISCCART  581056.89  4194279.35  67.91  198.99  4.8
RE DISCCART  581061.89  4194279.47  67.90  198.99  4.8
RE DISCCART  581066.89  4194279.58  67.90  198.99  4.8
RE DISCCART  581071.89  4194279.70  67.95  198.99  4.8
RE DISCCART  581076.89  4194279.82  68.01  198.99  4.8
RE DISCCART  581081.89  4194279.94  68.09  198.99  4.8
RE DISCCART  581086.88  4194280.06  68.12  198.99  4.8
RE DISCCART  581051.77  4194284.22  67.91  198.99  4.8
RE DISCCART  581056.77  4194284.34  67.91  198.99  4.8
RE DISCCART  581061.77  4194284.46  67.91  198.99  4.8
RE DISCCART  581066.77  4194284.58  67.90  198.99  4.8
RE DISCCART  581071.77  4194284.70  67.92  198.99  4.8
RE DISCCART  581076.77  4194284.82  67.95  198.99  4.8
RE DISCCART  581081.77  4194284.94  68.01  198.99  4.8
RE DISCCART  581086.77  4194285.06  68.04  198.99  4.8
RE DISCCART  581056.65  4194289.34  67.92  198.99  4.8
RE DISCCART  581061.65  4194289.46  67.92  198.99  4.8
RE DISCCART  581066.65  4194289.58  67.91  198.99  4.8
RE DISCCART  581071.65  4194289.70  67.91  198.99  4.8
RE DISCCART  581076.65  4194289.82  67.93  198.99  4.8
RE DISCCART  581081.65  4194289.94  67.96  198.99  4.8
RE DISCCART  581086.65  4194290.06  67.99  198.99  4.8
```

```
RE DISCCART  581061.53  4194294.46  67.91  198.99  4.8
RE DISCCART  581066.53  4194294.58  67.91  198.99  4.8
RE DISCCART  581071.53  4194294.70  67.91  198.99  4.8
RE DISCCART  581076.53  4194294.82  67.91  198.99  4.8
RE DISCCART  581081.53  4194294.94  67.93  198.99  4.8
RE DISCCART  581086.53  4194295.06  67.95  198.99  4.8
RE DISCCART  581061.41  4194299.46  67.83  198.99  4.8
RE DISCCART  581066.41  4194299.58  67.85  198.99  4.8
RE DISCCART  581071.41  4194299.70  67.88  198.99  4.8
RE DISCCART  581076.41  4194299.82  67.91  198.99  4.8
RE DISCCART  581081.41  4194299.94  67.92  198.99  4.8
RE DISCCART  581086.41  4194300.06  67.94  198.99  4.8
RE DISCCART  581066.29  4194304.58  67.80  198.99  4.8
RE DISCCART  581071.29  4194304.70  67.86  198.99  4.8
RE DISCCART  581076.29  4194304.82  67.91  198.99  4.8
RE DISCCART  581081.29  4194304.94  67.92  198.99  4.8
RE DISCCART  581086.29  4194305.06  67.92  198.99  4.8
RE DISCCART  581071.17  4194309.69  67.81  198.99  4.8
RE DISCCART  581076.17  4194309.81  67.87  198.99  4.8
RE DISCCART  581081.17  4194309.94  67.88  198.99  4.8
RE DISCCART  581086.17  4194310.05  67.89  198.99  4.8
RE DISCCART  581071.05  4194314.69  67.75  198.99  4.8
RE DISCCART  581076.05  4194314.81  67.82  198.99  4.8
RE DISCCART  581081.05  4194314.93  67.83  198.99  4.8
RE DISCCART  581086.05  4194315.05  67.86  198.99  4.8
RE DISCCART  581075.93  4194319.81  67.74  198.99  4.8
RE DISCCART  581080.93  4194319.93  67.78  198.99  4.8
RE DISCCART  581085.93  4194320.05  67.82  198.99  4.8
RE DISCCART  581080.81  4194324.93  67.71  198.99  4.8
RE DISCCART  581085.81  4194325.05  67.76  198.99  4.8
RE DISCCART  581080.69  4194329.93  67.49  198.99  4.8
RE DISCCART  581085.69  4194330.05  67.49  198.99  4.8
RE DISCCART  581085.57  4194335.05  67.24  198.99  4.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of      80  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581072.37  4194259.71  68.39  198.99  7.8
RE DISCCART  581077.37  4194259.83  68.50  198.99  7.8
RE DISCCART  581082.36  4194259.95  68.52  198.99  7.8
RE DISCCART  581087.36  4194260.07  68.46  198.99  7.8
RE DISCCART  581067.25  4194264.59  68.10  198.99  7.8
RE DISCCART  581072.25  4194264.71  68.26  198.99  7.8
RE DISCCART  581077.25  4194264.83  68.37  198.99  7.8
RE DISCCART  581082.25  4194264.95  68.40  198.99  7.8
RE DISCCART  581087.24  4194265.07  68.34  198.99  7.8
RE DISCCART  581062.13  4194269.47  67.94  198.99  7.8
RE DISCCART  581067.13  4194269.59  67.99  198.99  7.8
RE DISCCART  581072.13  4194269.71  68.11  198.99  7.8
RE DISCCART  581077.13  4194269.83  68.21  198.99  7.8
RE DISCCART  581082.13  4194269.95  68.29  198.99  7.8
RE DISCCART  581087.12  4194270.07  68.28  198.99  7.8
RE DISCCART  581052.01  4194274.23  67.91  198.99  7.8
RE DISCCART  581057.01  4194274.35  67.90  198.99  7.8
RE DISCCART  581062.01  4194274.47  67.90  198.99  7.8
RE DISCCART  581067.01  4194274.59  67.92  198.99  7.8
RE DISCCART  581072.01  4194274.71  67.99  198.99  7.8
RE DISCCART  581077.01  4194274.83  68.08  198.99  7.8
RE DISCCART  581082.01  4194274.95  68.18  198.99  7.8
RE DISCCART  581087.00  4194275.06  68.21  198.99  7.8
RE DISCCART  581046.90  4194279.11  67.91  198.99  7.8
RE DISCCART  581051.89  4194279.23  67.91  198.99  7.8
RE DISCCART  581056.89  4194279.35  67.91  198.99  7.8
RE DISCCART  581061.89  4194279.47  67.90  198.99  7.8
RE DISCCART  581066.89  4194279.58  67.90  198.99  7.8
RE DISCCART  581071.89  4194279.70  67.95  198.99  7.8
RE DISCCART  581076.89  4194279.82  68.01  198.99  7.8
RE DISCCART  581081.89  4194279.94  68.09  198.99  7.8
RE DISCCART  581086.88  4194280.06  68.12  198.99  7.8
RE DISCCART  581051.77  4194284.22  67.91  198.99  7.8
RE DISCCART  581056.77  4194284.34  67.91  198.99  7.8
RE DISCCART  581061.77  4194284.46  67.91  198.99  7.8
RE DISCCART  581066.77  4194284.58  67.90  198.99  7.8
RE DISCCART  581071.77  4194284.70  67.92  198.99  7.8
RE DISCCART  581076.77  4194284.82  67.95  198.99  7.8
RE DISCCART  581081.77  4194284.94  68.01  198.99  7.8
RE DISCCART  581086.77  4194285.06  68.04  198.99  7.8
RE DISCCART  581056.65  4194289.34  67.92  198.99  7.8
RE DISCCART  581061.65  4194289.46  67.92  198.99  7.8
RE DISCCART  581066.65  4194289.58  67.91  198.99  7.8
RE DISCCART  581071.65  4194289.70  67.91  198.99  7.8
RE DISCCART  581076.65  4194289.82  67.93  198.99  7.8
RE DISCCART  581081.65  4194289.94  67.96  198.99  7.8
RE DISCCART  581086.65  4194290.06  67.99  198.99  7.8
```

```
RE DISCCART  581061.53  4194294.46  67.91  198.99  7.8
RE DISCCART  581066.53  4194294.58  67.91  198.99  7.8
RE DISCCART  581071.53  4194294.70  67.91  198.99  7.8
RE DISCCART  581076.53  4194294.82  67.91  198.99  7.8
RE DISCCART  581081.53  4194294.94  67.93  198.99  7.8
RE DISCCART  581086.53  4194295.06  67.95  198.99  7.8
RE DISCCART  581061.41  4194299.46  67.83  198.99  7.8
RE DISCCART  581066.41  4194299.58  67.85  198.99  7.8
RE DISCCART  581071.41  4194299.70  67.88  198.99  7.8
RE DISCCART  581076.41  4194299.82  67.91  198.99  7.8
RE DISCCART  581081.41  4194299.94  67.92  198.99  7.8
RE DISCCART  581086.41  4194300.06  67.94  198.99  7.8
RE DISCCART  581066.29  4194304.58  67.80  198.99  7.8
RE DISCCART  581071.29  4194304.70  67.86  198.99  7.8
RE DISCCART  581076.29  4194304.82  67.91  198.99  7.8
RE DISCCART  581081.29  4194304.94  67.92  198.99  7.8
RE DISCCART  581086.29  4194305.06  67.92  198.99  7.8
RE DISCCART  581071.17  4194309.69  67.81  198.99  7.8
RE DISCCART  581076.17  4194309.81  67.87  198.99  7.8
RE DISCCART  581081.17  4194309.94  67.88  198.99  7.8
RE DISCCART  581086.17  4194310.05  67.89  198.99  7.8
RE DISCCART  581071.05  4194314.69  67.75  198.99  7.8
RE DISCCART  581076.05  4194314.81  67.82  198.99  7.8
RE DISCCART  581081.05  4194314.93  67.83  198.99  7.8
RE DISCCART  581086.05  4194315.05  67.86  198.99  7.8
RE DISCCART  581075.93  4194319.81  67.74  198.99  7.8
RE DISCCART  581080.93  4194319.93  67.78  198.99  7.8
RE DISCCART  581085.93  4194320.05  67.82  198.99  7.8
RE DISCCART  581080.81  4194324.93  67.71  198.99  7.8
RE DISCCART  581085.81  4194325.05  67.76  198.99  7.8
RE DISCCART  581080.69  4194329.93  67.49  198.99  7.8
RE DISCCART  581085.69  4194330.05  67.49  198.99  7.8
RE DISCCART  581085.57  4194335.05  67.24  198.99  7.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of      80  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581072.37  4194259.71  68.39  198.99  10.8
RE DISCCART  581077.37  4194259.83  68.50  198.99  10.8
RE DISCCART  581082.36  4194259.95  68.52  198.99  10.8
RE DISCCART  581087.36  4194260.07  68.46  198.99  10.8
RE DISCCART  581067.25  4194264.59  68.10  198.99  10.8
RE DISCCART  581072.25  4194264.71  68.26  198.99  10.8
RE DISCCART  581077.25  4194264.83  68.37  198.99  10.8
RE DISCCART  581082.25  4194264.95  68.40  198.99  10.8
RE DISCCART  581087.24  4194265.07  68.34  198.99  10.8
RE DISCCART  581062.13  4194269.47  67.94  198.99  10.8
RE DISCCART  581067.13  4194269.59  67.99  198.99  10.8
RE DISCCART  581072.13  4194269.71  68.11  198.99  10.8
RE DISCCART  581077.13  4194269.83  68.21  198.99  10.8
RE DISCCART  581082.13  4194269.95  68.29  198.99  10.8
RE DISCCART  581087.12  4194270.07  68.28  198.99  10.8
RE DISCCART  581052.01  4194274.23  67.91  198.99  10.8
RE DISCCART  581057.01  4194274.35  67.90  198.99  10.8
RE DISCCART  581062.01  4194274.47  67.90  198.99  10.8
RE DISCCART  581067.01  4194274.59  67.92  198.99  10.8
RE DISCCART  581072.01  4194274.71  67.99  198.99  10.8
RE DISCCART  581077.01  4194274.83  68.08  198.99  10.8
RE DISCCART  581082.01  4194274.95  68.18  198.99  10.8
RE DISCCART  581087.00  4194275.06  68.21  198.99  10.8
RE DISCCART  581046.90  4194279.11  67.91  198.99  10.8
RE DISCCART  581051.89  4194279.23  67.91  198.99  10.8
RE DISCCART  581056.89  4194279.35  67.91  198.99  10.8
RE DISCCART  581061.89  4194279.47  67.90  198.99  10.8
RE DISCCART  581066.89  4194279.58  67.90  198.99  10.8
RE DISCCART  581071.89  4194279.70  67.95  198.99  10.8
RE DISCCART  581076.89  4194279.82  68.01  198.99  10.8
RE DISCCART  581081.89  4194279.94  68.09  198.99  10.8
RE DISCCART  581086.88  4194280.06  68.12  198.99  10.8
RE DISCCART  581051.77  4194284.22  67.91  198.99  10.8
RE DISCCART  581056.77  4194284.34  67.91  198.99  10.8
RE DISCCART  581061.77  4194284.46  67.91  198.99  10.8
RE DISCCART  581066.77  4194284.58  67.90  198.99  10.8
RE DISCCART  581071.77  4194284.70  67.92  198.99  10.8
RE DISCCART  581076.77  4194284.82  67.95  198.99  10.8
RE DISCCART  581081.77  4194284.94  68.01  198.99  10.8
RE DISCCART  581086.77  4194285.06  68.04  198.99  10.8
RE DISCCART  581056.65  4194289.34  67.92  198.99  10.8
RE DISCCART  581061.65  4194289.46  67.92  198.99  10.8
RE DISCCART  581066.65  4194289.58  67.91  198.99  10.8
RE DISCCART  581071.65  4194289.70  67.91  198.99  10.8
RE DISCCART  581076.65  4194289.82  67.93  198.99  10.8
RE DISCCART  581081.65  4194289.94  67.96  198.99  10.8
RE DISCCART  581086.65  4194290.06  67.99  198.99  10.8
```

```
RE DISCCART  581061.53  4194294.46  67.91  198.99  10.8
RE DISCCART  581066.53  4194294.58  67.91  198.99  10.8
RE DISCCART  581071.53  4194294.70  67.91  198.99  10.8
RE DISCCART  581076.53  4194294.82  67.91  198.99  10.8
RE DISCCART  581081.53  4194294.94  67.93  198.99  10.8
RE DISCCART  581086.53  4194295.06  67.95  198.99  10.8
RE DISCCART  581061.41  4194299.46  67.83  198.99  10.8
RE DISCCART  581066.41  4194299.58  67.85  198.99  10.8
RE DISCCART  581071.41  4194299.70  67.88  198.99  10.8
RE DISCCART  581076.41  4194299.82  67.91  198.99  10.8
RE DISCCART  581081.41  4194299.94  67.92  198.99  10.8
RE DISCCART  581086.41  4194300.06  67.94  198.99  10.8
RE DISCCART  581066.29  4194304.58  67.80  198.99  10.8
RE DISCCART  581071.29  4194304.70  67.86  198.99  10.8
RE DISCCART  581076.29  4194304.82  67.91  198.99  10.8
RE DISCCART  581081.29  4194304.94  67.92  198.99  10.8
RE DISCCART  581086.29  4194305.06  67.92  198.99  10.8
RE DISCCART  581071.17  4194309.69  67.81  198.99  10.8
RE DISCCART  581076.17  4194309.81  67.87  198.99  10.8
RE DISCCART  581081.17  4194309.94  67.88  198.99  10.8
RE DISCCART  581086.17  4194310.05  67.89  198.99  10.8
RE DISCCART  581071.05  4194314.69  67.75  198.99  10.8
RE DISCCART  581076.05  4194314.81  67.82  198.99  10.8
RE DISCCART  581081.05  4194314.93  67.83  198.99  10.8
RE DISCCART  581086.05  4194315.05  67.86  198.99  10.8
RE DISCCART  581075.93  4194319.81  67.74  198.99  10.8
RE DISCCART  581080.93  4194319.93  67.78  198.99  10.8
RE DISCCART  581085.93  4194320.05  67.82  198.99  10.8
RE DISCCART  581080.81  4194324.93  67.71  198.99  10.8
RE DISCCART  581085.81  4194325.05  67.76  198.99  10.8
RE DISCCART  581080.69  4194329.93  67.49  198.99  10.8
RE DISCCART  581085.69  4194330.05  67.49  198.99  10.8
RE DISCCART  581085.57  4194335.05  67.24  198.99  10.8
```

```
** AERMAP - VERSION 11103                                          06/03/15
** A total of       2  NED files were used
** A total of      80  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581072.37  4194259.71  68.39  198.99  13.8
RE DISCCART  581077.37  4194259.83  68.50  198.99  13.8
RE DISCCART  581082.36  4194259.95  68.52  198.99  13.8
RE DISCCART  581087.36  4194260.07  68.46  198.99  13.8
RE DISCCART  581067.25  4194264.59  68.10  198.99  13.8
RE DISCCART  581072.25  4194264.71  68.26  198.99  13.8
RE DISCCART  581077.25  4194264.83  68.37  198.99  13.8
RE DISCCART  581082.25  4194264.95  68.40  198.99  13.8
RE DISCCART  581087.24  4194265.07  68.34  198.99  13.8
RE DISCCART  581062.13  4194269.47  67.94  198.99  13.8
RE DISCCART  581067.13  4194269.59  67.99  198.99  13.8
RE DISCCART  581072.13  4194269.71  68.11  198.99  13.8
RE DISCCART  581077.13  4194269.83  68.21  198.99  13.8
RE DISCCART  581082.13  4194269.95  68.29  198.99  13.8
RE DISCCART  581087.12  4194270.07  68.28  198.99  13.8
RE DISCCART  581052.01  4194274.23  67.91  198.99  13.8
RE DISCCART  581057.01  4194274.35  67.90  198.99  13.8
RE DISCCART  581062.01  4194274.47  67.90  198.99  13.8
RE DISCCART  581067.01  4194274.59  67.92  198.99  13.8
RE DISCCART  581072.01  4194274.71  67.99  198.99  13.8
RE DISCCART  581077.01  4194274.83  68.08  198.99  13.8
RE DISCCART  581082.01  4194274.95  68.18  198.99  13.8
RE DISCCART  581087.00  4194275.06  68.21  198.99  13.8
RE DISCCART  581046.90  4194279.11  67.91  198.99  13.8
RE DISCCART  581051.89  4194279.23  67.91  198.99  13.8
RE DISCCART  581056.89  4194279.35  67.91  198.99  13.8
RE DISCCART  581061.89  4194279.47  67.90  198.99  13.8
RE DISCCART  581066.89  4194279.58  67.90  198.99  13.8
RE DISCCART  581071.89  4194279.70  67.95  198.99  13.8
RE DISCCART  581076.89  4194279.82  68.01  198.99  13.8
RE DISCCART  581081.89  4194279.94  68.09  198.99  13.8
RE DISCCART  581086.88  4194280.06  68.12  198.99  13.8
RE DISCCART  581051.77  4194284.22  67.91  198.99  13.8
RE DISCCART  581056.77  4194284.34  67.91  198.99  13.8
RE DISCCART  581061.77  4194284.46  67.91  198.99  13.8
RE DISCCART  581066.77  4194284.58  67.90  198.99  13.8
RE DISCCART  581071.77  4194284.70  67.92  198.99  13.8
RE DISCCART  581076.77  4194284.82  67.95  198.99  13.8
RE DISCCART  581081.77  4194284.94  68.01  198.99  13.8
RE DISCCART  581086.77  4194285.06  68.04  198.99  13.8
RE DISCCART  581056.65  4194289.34  67.92  198.99  13.8
RE DISCCART  581061.65  4194289.46  67.92  198.99  13.8
RE DISCCART  581066.65  4194289.58  67.91  198.99  13.8
RE DISCCART  581071.65  4194289.70  67.91  198.99  13.8
RE DISCCART  581076.65  4194289.82  67.93  198.99  13.8
RE DISCCART  581081.65  4194289.94  67.96  198.99  13.8
RE DISCCART  581086.65  4194290.06  67.99  198.99  13.8
```

```
RE DISCCART  581061.53  4194294.46  67.91  198.99  13.8
RE DISCCART  581066.53  4194294.58  67.91  198.99  13.8
RE DISCCART  581071.53  4194294.70  67.91  198.99  13.8
RE DISCCART  581076.53  4194294.82  67.91  198.99  13.8
RE DISCCART  581081.53  4194294.94  67.93  198.99  13.8
RE DISCCART  581086.53  4194295.06  67.95  198.99  13.8
RE DISCCART  581061.41  4194299.46  67.83  198.99  13.8
RE DISCCART  581066.41  4194299.58  67.85  198.99  13.8
RE DISCCART  581071.41  4194299.70  67.88  198.99  13.8
RE DISCCART  581076.41  4194299.82  67.91  198.99  13.8
RE DISCCART  581081.41  4194299.94  67.92  198.99  13.8
RE DISCCART  581086.41  4194300.06  67.94  198.99  13.8
RE DISCCART  581066.29  4194304.58  67.80  198.99  13.8
RE DISCCART  581071.29  4194304.70  67.86  198.99  13.8
RE DISCCART  581076.29  4194304.82  67.91  198.99  13.8
RE DISCCART  581081.29  4194304.94  67.92  198.99  13.8
RE DISCCART  581086.29  4194305.06  67.92  198.99  13.8
RE DISCCART  581071.17  4194309.69  67.81  198.99  13.8
RE DISCCART  581076.17  4194309.81  67.87  198.99  13.8
RE DISCCART  581081.17  4194309.94  67.88  198.99  13.8
RE DISCCART  581086.17  4194310.05  67.89  198.99  13.8
RE DISCCART  581071.05  4194314.69  67.75  198.99  13.8
RE DISCCART  581076.05  4194314.81  67.82  198.99  13.8
RE DISCCART  581081.05  4194314.93  67.83  198.99  13.8
RE DISCCART  581086.05  4194315.05  67.86  198.99  13.8
RE DISCCART  581075.93  4194319.81  67.74  198.99  13.8
RE DISCCART  581080.93  4194319.93  67.78  198.99  13.8
RE DISCCART  581085.93  4194320.05  67.82  198.99  13.8
RE DISCCART  581080.81  4194324.93  67.71  198.99  13.8
RE DISCCART  581085.81  4194325.05  67.76  198.99  13.8
RE DISCCART  581080.69  4194329.93  67.49  198.99  13.8
RE DISCCART  581085.69  4194330.05  67.49  198.99  13.8
RE DISCCART  581085.57  4194335.05  67.24  198.99  13.8
```

```
** AERMAP - VERSION 11103                                          03/31/15
** A total of       2  NED files were used
** A total of    1316  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581000.00  4193960.00  52.74  180.03  1.8
RE DISCCART  581020.00  4193960.00  58.63  180.03  1.8
RE DISCCART  581040.00  4193960.00  59.25  180.03  1.8
RE DISCCART  581060.00  4193960.00  59.09  179.69  1.8
RE DISCCART  581080.00  4193960.00  58.80  170.79  1.8
RE DISCCART  581100.00  4193960.00  58.10  170.79  1.8
RE DISCCART  581120.00  4193960.00  57.35  170.79  1.8
RE DISCCART  581140.00  4193960.00  56.84  170.79  1.8
RE DISCCART  581160.00  4193960.00  56.35  170.79  1.8
RE DISCCART  581180.00  4193960.00  55.86  170.79  1.8
RE DISCCART  581200.00  4193960.00  52.20  170.79  1.8
RE DISCCART  580940.00  4193980.00  60.00  180.03  1.8
RE DISCCART  580960.00  4193980.00  54.72  180.03  1.8
RE DISCCART  580980.00  4193980.00  45.62  198.99  1.8
RE DISCCART  581000.00  4193980.00  47.38  192.56  1.8
RE DISCCART  581020.00  4193980.00  55.02  180.03  1.8
RE DISCCART  581040.00  4193980.00  57.40  180.03  1.8
RE DISCCART  581060.00  4193980.00  57.70  179.69  1.8
RE DISCCART  581080.00  4193980.00  57.96  170.79  1.8
RE DISCCART  581100.00  4193980.00  57.44  170.79  1.8
RE DISCCART  581120.00  4193980.00  56.57  170.79  1.8
RE DISCCART  581140.00  4193980.00  55.68  170.79  1.8
RE DISCCART  581160.00  4193980.00  54.77  170.79  1.8
RE DISCCART  581180.00  4193980.00  53.66  170.79  1.8
RE DISCCART  581200.00  4193980.00  48.85  192.56  1.8
RE DISCCART  581220.00  4193980.00  46.22  192.56  1.8
RE DISCCART  581240.00  4193980.00  46.17  192.56  1.8
RE DISCCART  581260.00  4193980.00  46.48  192.56  1.8
RE DISCCART  581280.00  4193980.00  47.94  192.56  1.8
RE DISCCART  580900.00  4194000.00  68.23  170.46  1.8
RE DISCCART  580920.00  4194000.00  66.00  170.79  1.8
RE DISCCART  580940.00  4194000.00  67.18   68.26  1.8
RE DISCCART  580960.00  4194000.00  63.35  170.79  1.8
RE DISCCART  580980.00  4194000.00  51.24  192.56  1.8
RE DISCCART  581000.00  4194000.00  45.55  198.99  1.8
RE DISCCART  581020.00  4194000.00  47.81  198.19  1.8
RE DISCCART  581040.00  4194000.00  52.32  180.03  1.8
RE DISCCART  581060.00  4194000.00  55.44  180.03  1.8
RE DISCCART  581080.00  4194000.00  56.48  170.79  1.8
RE DISCCART  581100.00  4194000.00  56.44  170.79  1.8
RE DISCCART  581120.00  4194000.00  54.22  170.79  1.8
RE DISCCART  581140.00  4194000.00  48.53  192.56  1.8
RE DISCCART  581160.00  4194000.00  47.12  192.56  1.8
RE DISCCART  581180.00  4194000.00  46.78  192.56  1.8
RE DISCCART  581200.00  4194000.00  45.69  192.56  1.8
RE DISCCART  581220.00  4194000.00  48.24  192.56  1.8
RE DISCCART  581240.00  4194000.00  51.43  167.12  1.8
```

```
RE DISCCART  581260.00  4194000.00  49.45  192.56  1.8
RE DISCCART  581280.00  4194000.00  45.65  192.56  1.8
RE DISCCART  581300.00  4194000.00  45.97  192.56  1.8
RE DISCCART  581320.00  4194000.00  48.75  192.56  1.8
RE DISCCART  580880.00  4194020.00  69.71   69.71  1.8
RE DISCCART  580900.00  4194020.00  68.22   68.22  1.8
RE DISCCART  580920.00  4194020.00  68.22   68.22  1.8
RE DISCCART  580940.00  4194020.00  68.60   68.60  1.8
RE DISCCART  580960.00  4194020.00  67.85   67.85  1.8
RE DISCCART  580980.00  4194020.00  64.52   73.50  1.8
RE DISCCART  581000.00  4194020.00  53.44  192.56  1.8
RE DISCCART  581020.00  4194020.00  46.05  198.99  1.8
RE DISCCART  581040.00  4194020.00  45.85  198.99  1.8
RE DISCCART  581060.00  4194020.00  48.66  198.99  1.8
RE DISCCART  581080.00  4194020.00  50.91  192.56  1.8
RE DISCCART  581100.00  4194020.00  51.11  192.56  1.8
RE DISCCART  581120.00  4194020.00  47.34  198.99  1.8
RE DISCCART  581140.00  4194020.00  46.03  198.99  1.8
RE DISCCART  581160.00  4194020.00  49.20  192.56  1.8
RE DISCCART  581180.00  4194020.00  49.60  192.56  1.8
RE DISCCART  581200.00  4194020.00  52.54  192.56  1.8
RE DISCCART  581220.00  4194020.00  58.07   68.36  1.8
RE DISCCART  581240.00  4194020.00  62.00   62.00  1.8
RE DISCCART  581260.00  4194020.00  60.28   63.40  1.8
RE DISCCART  581280.00  4194020.00  53.30   68.36  1.8
RE DISCCART  581300.00  4194020.00  46.39  192.56  1.8
RE DISCCART  581320.00  4194020.00  45.90  192.56  1.8
RE DISCCART  581340.00  4194020.00  48.31  192.56  1.8
RE DISCCART  581360.00  4194020.00  48.36  192.56  1.8
RE DISCCART  580860.00  4194040.00  71.92   71.92  1.8
RE DISCCART  580880.00  4194040.00  70.58   70.58  1.8
RE DISCCART  580900.00  4194040.00  69.55   71.17  1.8
RE DISCCART  580920.00  4194040.00  69.71   69.71  1.8
RE DISCCART  580940.00  4194040.00  69.47   69.47  1.8
RE DISCCART  580960.00  4194040.00  69.03   69.03  1.8
RE DISCCART  580980.00  4194040.00  68.53   68.53  1.8
RE DISCCART  581000.00  4194040.00  67.23   68.39  1.8
RE DISCCART  581020.00  4194040.00  59.23  170.46  1.8
RE DISCCART  581040.00  4194040.00  49.85  198.99  1.8
RE DISCCART  581060.00  4194040.00  46.41  198.99  1.8
RE DISCCART  581080.00  4194040.00  45.76  198.99  1.8
RE DISCCART  581100.00  4194040.00  45.85  198.99  1.8
RE DISCCART  581120.00  4194040.00  46.73  198.99  1.8
RE DISCCART  581140.00  4194040.00  54.51  192.56  1.8
RE DISCCART  581160.00  4194040.00  62.76   68.36  1.8
RE DISCCART  581180.00  4194040.00  63.00   68.36  1.8
RE DISCCART  581200.00  4194040.00  62.61   68.36  1.8
RE DISCCART  581220.00  4194040.00  62.69   67.75  1.8
RE DISCCART  581240.00  4194040.00  62.98   62.98  1.8
RE DISCCART  581260.00  4194040.00  63.13   63.13  1.8
RE DISCCART  581280.00  4194040.00  58.34   63.40  1.8
RE DISCCART  581300.00  4194040.00  50.16  192.56  1.8
RE DISCCART  581320.00  4194040.00  47.51  192.56  1.8
RE DISCCART  581340.00  4194040.00  45.60  192.56  1.8
```

```
RE DISCCART  581360.00  4194040.00  45.76  192.56  1.8
RE DISCCART  581380.00  4194040.00  47.45  192.56  1.8
RE DISCCART  580840.00  4194060.00  72.91   72.91  1.8
RE DISCCART  580860.00  4194060.00  72.15   72.15  1.8
RE DISCCART  580880.00  4194060.00  71.74   71.74  1.8
RE DISCCART  580900.00  4194060.00  71.54   71.54  1.8
RE DISCCART  580920.00  4194060.00  71.29   71.29  1.8
RE DISCCART  580940.00  4194060.00  70.62   70.62  1.8
RE DISCCART  580960.00  4194060.00  70.12   70.12  1.8
RE DISCCART  580980.00  4194060.00  69.32   69.32  1.8
RE DISCCART  581000.00  4194060.00  68.86   68.86  1.8
RE DISCCART  581020.00  4194060.00  68.42   68.42  1.8
RE DISCCART  581040.00  4194060.00  67.08   68.46  1.8
RE DISCCART  581060.00  4194060.00  62.06   70.44  1.8
RE DISCCART  581080.00  4194060.00  59.37   72.19  1.8
RE DISCCART  581100.00  4194060.00  58.35   71.00  1.8
RE DISCCART  581120.00  4194060.00  61.44   68.77  1.8
RE DISCCART  581140.00  4194060.00  66.85   68.36  1.8
RE DISCCART  581160.00  4194060.00  68.15   68.15  1.8
RE DISCCART  581180.00  4194060.00  67.10   67.75  1.8
RE DISCCART  581200.00  4194060.00  64.38   68.13  1.8
RE DISCCART  581220.00  4194060.00  63.62   63.62  1.8
RE DISCCART  581240.00  4194060.00  63.08   63.08  1.8
RE DISCCART  581260.00  4194060.00  61.53   62.81  1.8
RE DISCCART  581280.00  4194060.00  56.76   68.13  1.8
RE DISCCART  581300.00  4194060.00  52.78  192.56  1.8
RE DISCCART  581320.00  4194060.00  49.80  192.56  1.8
RE DISCCART  581340.00  4194060.00  48.71  192.56  1.8
RE DISCCART  581360.00  4194060.00  48.96  192.56  1.8
RE DISCCART  581380.00  4194060.00  49.26  192.56  1.8
RE DISCCART  581400.00  4194060.00  48.84  192.56  1.8
RE DISCCART  580820.00  4194080.00  73.72  139.65  1.8
RE DISCCART  580840.00  4194080.00  73.24  139.65  1.8
RE DISCCART  580860.00  4194080.00  72.60   72.60  1.8
RE DISCCART  580880.00  4194080.00  72.20   72.20  1.8
RE DISCCART  580900.00  4194080.00  73.17   73.17  1.8
RE DISCCART  580920.00  4194080.00  73.02   73.02  1.8
RE DISCCART  580940.00  4194080.00  72.35   72.35  1.8
RE DISCCART  580960.00  4194080.00  71.21   71.21  1.8
RE DISCCART  580980.00  4194080.00  70.02   70.02  1.8
RE DISCCART  581000.00  4194080.00  69.38   69.38  1.8
RE DISCCART  581020.00  4194080.00  68.93   68.93  1.8
RE DISCCART  581040.00  4194080.00  68.52   68.52  1.8
RE DISCCART  581060.00  4194080.00  68.33   68.33  1.8
RE DISCCART  581080.00  4194080.00  68.21   68.21  1.8
RE DISCCART  581100.00  4194080.00  68.17   68.17  1.8
RE DISCCART  581120.00  4194080.00  67.91   67.91  1.8
RE DISCCART  581140.00  4194080.00  67.73   67.73  1.8
RE DISCCART  581160.00  4194080.00  67.51   67.51  1.8
RE DISCCART  581180.00  4194080.00  67.00   67.00  1.8
RE DISCCART  581200.00  4194080.00  65.51   65.51  1.8
RE DISCCART  581220.00  4194080.00  64.03   64.03  1.8
RE DISCCART  581240.00  4194080.00  62.89   62.89  1.8
RE DISCCART  581260.00  4194080.00  62.07   62.07  1.8
```

```
RE DISCCART  581280.00  4194080.00  60.86   62.27  1.8
RE DISCCART  581300.00  4194080.00  56.75  192.56  1.8
RE DISCCART  581320.00  4194080.00  54.37  192.56  1.8
RE DISCCART  581340.00  4194080.00  55.23  192.56  1.8
RE DISCCART  581360.00  4194080.00  54.05  192.56  1.8
RE DISCCART  581380.00  4194080.00  50.46  192.56  1.8
RE DISCCART  581400.00  4194080.00  48.74  192.56  1.8
RE DISCCART  581420.00  4194080.00  51.91  192.56  1.8
RE DISCCART  580800.00  4194100.00  75.01  139.65  1.8
RE DISCCART  580820.00  4194100.00  74.36  139.65  1.8
RE DISCCART  580840.00  4194100.00  73.84  139.65  1.8
RE DISCCART  580860.00  4194100.00  73.10  139.65  1.8
RE DISCCART  580880.00  4194100.00  72.65  139.28  1.8
RE DISCCART  580900.00  4194100.00  73.92   73.92  1.8
RE DISCCART  580920.00  4194100.00  73.99   73.99  1.8
RE DISCCART  580940.00  4194100.00  73.26   73.26  1.8
RE DISCCART  580960.00  4194100.00  72.21   72.21  1.8
RE DISCCART  580980.00  4194100.00  70.82   70.82  1.8
RE DISCCART  581000.00  4194100.00  69.96   69.96  1.8
RE DISCCART  581020.00  4194100.00  69.49   69.49  1.8
RE DISCCART  581040.00  4194100.00  69.12   69.12  1.8
RE DISCCART  581060.00  4194100.00  68.76   68.76  1.8
RE DISCCART  581080.00  4194100.00  68.13   68.13  1.8
RE DISCCART  581100.00  4194100.00  67.78   67.78  1.8
RE DISCCART  581120.00  4194100.00  67.39   67.39  1.8
RE DISCCART  581140.00  4194100.00  66.88   66.88  1.8
RE DISCCART  581160.00  4194100.00  66.41   66.41  1.8
RE DISCCART  581180.00  4194100.00  66.18   66.18  1.8
RE DISCCART  581200.00  4194100.00  65.72   65.72  1.8
RE DISCCART  581220.00  4194100.00  64.71   64.71  1.8
RE DISCCART  581240.00  4194100.00  63.67   63.67  1.8
RE DISCCART  581260.00  4194100.00  62.92   62.92  1.8
RE DISCCART  581280.00  4194100.00  62.26   62.26  1.8
RE DISCCART  581300.00  4194100.00  60.78   62.13  1.8
RE DISCCART  581320.00  4194100.00  59.89   62.46  1.8
RE DISCCART  581340.00  4194100.00  60.84   62.37  1.8
RE DISCCART  581360.00  4194100.00  61.26   61.52  1.8
RE DISCCART  581380.00  4194100.00  59.12   65.95  1.8
RE DISCCART  581400.00  4194100.00  57.40  192.56  1.8
RE DISCCART  581420.00  4194100.00  59.83   66.04  1.8
RE DISCCART  580780.00  4194120.00  76.59  139.65  1.8
RE DISCCART  580800.00  4194120.00  75.75  139.65  1.8
RE DISCCART  580820.00  4194120.00  75.00  139.65  1.8
RE DISCCART  580840.00  4194120.00  74.30  139.65  1.8
RE DISCCART  580860.00  4194120.00  73.53  139.65  1.8
RE DISCCART  580880.00  4194120.00  73.01  139.65  1.8
RE DISCCART  580900.00  4194120.00  73.96   73.96  1.8
RE DISCCART  580920.00  4194120.00  74.01   74.01  1.8
RE DISCCART  580940.00  4194120.00  73.65   73.65  1.8
RE DISCCART  580960.00  4194120.00  72.65   72.65  1.8
RE DISCCART  580980.00  4194120.00  71.29   71.29  1.8
RE DISCCART  581000.00  4194120.00  70.55   70.55  1.8
RE DISCCART  581020.00  4194120.00  69.96   69.96  1.8
RE DISCCART  581040.00  4194120.00  69.46   69.46  1.8
```

```
RE DISCCART  581060.00  4194120.00  68.70   68.70  1.8
RE DISCCART  581080.00  4194120.00  67.93   67.93  1.8
RE DISCCART  581100.00  4194120.00  67.72   67.72  1.8
RE DISCCART  581120.00  4194120.00  67.38   67.38  1.8
RE DISCCART  581140.00  4194120.00  66.93   66.93  1.8
RE DISCCART  581160.00  4194120.00  66.58   66.58  1.8
RE DISCCART  581180.00  4194120.00  66.41   66.41  1.8
RE DISCCART  581200.00  4194120.00  66.08   66.08  1.8
RE DISCCART  581220.00  4194120.00  65.40   65.40  1.8
RE DISCCART  581240.00  4194120.00  64.43   64.43  1.8
RE DISCCART  581260.00  4194120.00  63.62   63.62  1.8
RE DISCCART  581280.00  4194120.00  62.82   62.82  1.8
RE DISCCART  581300.00  4194120.00  62.44   62.44  1.8
RE DISCCART  581320.00  4194120.00  62.37   62.37  1.8
RE DISCCART  581340.00  4194120.00  62.53   62.53  1.8
RE DISCCART  581360.00  4194120.00  62.49   62.49  1.8
RE DISCCART  581380.00  4194120.00  62.15   62.15  1.8
RE DISCCART  581400.00  4194120.00  62.60   65.61  1.8
RE DISCCART  581420.00  4194120.00  63.94   65.95  1.8
RE DISCCART  581440.00  4194120.00  65.00   65.00  1.8
RE DISCCART  580780.00  4194140.00  77.21  139.65  1.8
RE DISCCART  580800.00  4194140.00  76.34  139.65  1.8
RE DISCCART  580820.00  4194140.00  75.43  139.65  1.8
RE DISCCART  580840.00  4194140.00  74.61  139.65  1.8
RE DISCCART  580860.00  4194140.00  73.78  139.65  1.8
RE DISCCART  580880.00  4194140.00  73.38  139.65  1.8
RE DISCCART  580900.00  4194140.00  73.38  139.65  1.8
RE DISCCART  580920.00  4194140.00  73.56   73.56  1.8
RE DISCCART  580940.00  4194140.00  73.38   73.38  1.8
RE DISCCART  580960.00  4194140.00  72.67   72.67  1.8
RE DISCCART  580980.00  4194140.00  71.65   71.65  1.8
RE DISCCART  581000.00  4194140.00  70.95   70.95  1.8
RE DISCCART  581020.00  4194140.00  69.89   69.89  1.8
RE DISCCART  581040.00  4194140.00  69.38   69.38  1.8
RE DISCCART  581060.00  4194140.00  68.83   68.83  1.8
RE DISCCART  581080.00  4194140.00  68.43   68.43  1.8
RE DISCCART  581100.00  4194140.00  68.24   68.24  1.8
RE DISCCART  581120.00  4194140.00  67.86   67.86  1.8
RE DISCCART  581140.00  4194140.00  67.63   67.63  1.8
RE DISCCART  581160.00  4194140.00  67.64   67.64  1.8
RE DISCCART  581180.00  4194140.00  67.33   67.33  1.8
RE DISCCART  581200.00  4194140.00  66.68   66.68  1.8
RE DISCCART  581220.00  4194140.00  65.94   65.94  1.8
RE DISCCART  581240.00  4194140.00  65.18   65.18  1.8
RE DISCCART  581260.00  4194140.00  64.26  192.56  1.8
RE DISCCART  581280.00  4194140.00  63.53  192.56  1.8
RE DISCCART  581300.00  4194140.00  63.27  192.56  1.8
RE DISCCART  581320.00  4194140.00  63.35   63.35  1.8
RE DISCCART  581340.00  4194140.00  63.07   63.07  1.8
RE DISCCART  581360.00  4194140.00  62.79   62.79  1.8
RE DISCCART  581380.00  4194140.00  62.86   62.86  1.8
RE DISCCART  581400.00  4194140.00  62.91   65.47  1.8
RE DISCCART  581420.00  4194140.00  65.40   65.40  1.8
RE DISCCART  581440.00  4194140.00  65.82   65.82  1.8
```

```
RE DISCCART  581460.00  4194140.00  65.28   65.28  1.8
RE DISCCART  580760.00  4194160.00  78.72  139.65  1.8
RE DISCCART  580780.00  4194160.00  77.71  139.65  1.8
RE DISCCART  580800.00  4194160.00  76.71  139.65  1.8
RE DISCCART  580820.00  4194160.00  75.74  139.65  1.8
RE DISCCART  580840.00  4194160.00  74.84  139.65  1.8
RE DISCCART  580860.00  4194160.00  73.98  139.65  1.8
RE DISCCART  580880.00  4194160.00  73.69  139.65  1.8
RE DISCCART  580900.00  4194160.00  73.25  139.65  1.8
RE DISCCART  580920.00  4194160.00  72.77  139.65  1.8
RE DISCCART  580940.00  4194160.00  72.60  139.65  1.8
RE DISCCART  580960.00  4194160.00  72.26   72.26  1.8
RE DISCCART  580980.00  4194160.00  71.72   71.72  1.8
RE DISCCART  581000.00  4194160.00  71.19   71.19  1.8
RE DISCCART  581020.00  4194160.00  70.54   70.54  1.8
RE DISCCART  581040.00  4194160.00  69.72   69.72  1.8
RE DISCCART  581060.00  4194160.00  69.09   69.09  1.8
RE DISCCART  581080.00  4194160.00  68.88   68.88  1.8
RE DISCCART  581100.00  4194160.00  68.58   68.58  1.8
RE DISCCART  581120.00  4194160.00  68.35   68.35  1.8
RE DISCCART  581140.00  4194160.00  68.28   68.28  1.8
RE DISCCART  581160.00  4194160.00  68.21   68.21  1.8
RE DISCCART  581180.00  4194160.00  67.99   67.99  1.8
RE DISCCART  581200.00  4194160.00  67.39   67.39  1.8
RE DISCCART  581220.00  4194160.00  66.53  192.56  1.8
RE DISCCART  581240.00  4194160.00  65.90  192.56  1.8
RE DISCCART  581260.00  4194160.00  65.07  192.56  1.8
RE DISCCART  581280.00  4194160.00  64.36  192.56  1.8
RE DISCCART  581300.00  4194160.00  64.13  192.56  1.8
RE DISCCART  581320.00  4194160.00  64.18  192.56  1.8
RE DISCCART  581340.00  4194160.00  63.62  192.56  1.8
RE DISCCART  581360.00  4194160.00  63.35  192.56  1.8
RE DISCCART  581380.00  4194160.00  63.37  192.56  1.8
RE DISCCART  581400.00  4194160.00  63.91   63.91  1.8
RE DISCCART  581420.00  4194160.00  64.77   64.77  1.8
RE DISCCART  581440.00  4194160.00  65.14   65.14  1.8
RE DISCCART  581460.00  4194160.00  64.78   64.78  1.8
RE DISCCART  580760.00  4194180.00  79.21  139.65  1.8
RE DISCCART  580780.00  4194180.00  78.25  186.03  1.8
RE DISCCART  580800.00  4194180.00  77.21  187.00  1.8
RE DISCCART  580820.00  4194180.00  76.11  187.00  1.8
RE DISCCART  580840.00  4194180.00  75.19  187.00  1.8
RE DISCCART  580860.00  4194180.00  74.58  186.81  1.8
RE DISCCART  580880.00  4194180.00  74.12  139.65  1.8
RE DISCCART  580900.00  4194180.00  73.57  139.65  1.8
RE DISCCART  580920.00  4194180.00  73.03  139.65  1.8
RE DISCCART  580940.00  4194180.00  72.38  139.65  1.8
RE DISCCART  580960.00  4194180.00  71.86  139.65  1.8
RE DISCCART  580980.00  4194180.00  71.62   71.62  1.8
RE DISCCART  581000.00  4194180.00  71.13   71.13  1.8
RE DISCCART  581020.00  4194180.00  70.60   70.60  1.8
RE DISCCART  581040.00  4194180.00  70.10  192.56  1.8
RE DISCCART  581060.00  4194180.00  69.50  192.56  1.8
RE DISCCART  581080.00  4194180.00  69.37  192.56  1.8
```

```
RE DISCCART  581100.00  4194180.00  69.11  192.56  1.8
RE DISCCART  581120.00  4194180.00  69.11  192.56  1.8
RE DISCCART  581140.00  4194180.00  68.80  192.56  1.8
RE DISCCART  581160.00  4194180.00  68.51  192.56  1.8
RE DISCCART  581180.00  4194180.00  68.16  192.56  1.8
RE DISCCART  581200.00  4194180.00  67.69  192.56  1.8
RE DISCCART  581220.00  4194180.00  66.89  192.56  1.8
RE DISCCART  581240.00  4194180.00  66.25  192.56  1.8
RE DISCCART  581260.00  4194180.00  65.66  192.56  1.8
RE DISCCART  581280.00  4194180.00  65.14  192.56  1.8
RE DISCCART  581300.00  4194180.00  64.89  192.56  1.8
RE DISCCART  581320.00  4194180.00  64.63  192.56  1.8
RE DISCCART  581340.00  4194180.00  64.18  192.56  1.8
RE DISCCART  581360.00  4194180.00  63.91  192.56  1.8
RE DISCCART  581380.00  4194180.00  63.87  192.56  1.8
RE DISCCART  581400.00  4194180.00  64.18  192.56  1.8
RE DISCCART  581420.00  4194180.00  64.37  192.56  1.8
RE DISCCART  581440.00  4194180.00  64.58   64.58  1.8
RE DISCCART  581460.00  4194180.00  64.47   64.47  1.8
RE DISCCART  580760.00  4194200.00  79.46  187.00  1.8
RE DISCCART  580780.00  4194200.00  78.45  187.00  1.8
RE DISCCART  580800.00  4194200.00  77.52  187.00  1.8
RE DISCCART  580820.00  4194200.00  76.46  187.00  1.8
RE DISCCART  580840.00  4194200.00  75.65  187.00  1.8
RE DISCCART  580860.00  4194200.00  75.09  187.00  1.8
RE DISCCART  580880.00  4194200.00  74.47  187.00  1.8
RE DISCCART  580900.00  4194200.00  73.73  187.00  1.8
RE DISCCART  580920.00  4194200.00  73.05  187.00  1.8
RE DISCCART  580940.00  4194200.00  72.49  186.03  1.8
RE DISCCART  580960.00  4194200.00  71.84  192.56  1.8
RE DISCCART  580980.00  4194200.00  71.15  192.56  1.8
RE DISCCART  581000.00  4194200.00  71.02  192.56  1.8
RE DISCCART  581020.00  4194200.00  70.63  192.56  1.8
RE DISCCART  581040.00  4194200.00  70.12  192.56  1.8
RE DISCCART  581060.00  4194200.00  69.91  192.56  1.8
RE DISCCART  581080.00  4194200.00  69.82  192.56  1.8
RE DISCCART  581100.00  4194200.00  69.75  192.56  1.8
RE DISCCART  581120.00  4194200.00  69.42  192.56  1.8
RE DISCCART  581140.00  4194200.00  69.04  192.56  1.8
RE DISCCART  581160.00  4194200.00  68.59  192.56  1.8
RE DISCCART  581180.00  4194200.00  68.17  192.56  1.8
RE DISCCART  581200.00  4194200.00  67.80  192.56  1.8
RE DISCCART  581220.00  4194200.00  67.10  192.56  1.8
RE DISCCART  581240.00  4194200.00  66.56  192.56  1.8
RE DISCCART  581260.00  4194200.00  66.10  192.56  1.8
RE DISCCART  581280.00  4194200.00  65.57  192.56  1.8
RE DISCCART  581300.00  4194200.00  65.21  192.56  1.8
RE DISCCART  581320.00  4194200.00  64.74  192.56  1.8
RE DISCCART  581340.00  4194200.00  64.61  192.56  1.8
RE DISCCART  581360.00  4194200.00  64.28  192.56  1.8
RE DISCCART  581380.00  4194200.00  64.02  192.56  1.8
RE DISCCART  581400.00  4194200.00  63.90  192.56  1.8
RE DISCCART  581420.00  4194200.00  63.82  192.56  1.8
RE DISCCART  581440.00  4194200.00  63.92  192.56  1.8
```

```
RE DISCCART  581460.00  4194200.00  63.92  192.56  1.8
RE DISCCART  581480.00  4194200.00  63.94  192.56  1.8
RE DISCCART  580740.00  4194220.00  82.43  187.00  1.8
RE DISCCART  580760.00  4194220.00  79.50  187.00  1.8
RE DISCCART  580780.00  4194220.00  78.68  187.00  1.8
RE DISCCART  580800.00  4194220.00  77.80  187.00  1.8
RE DISCCART  580820.00  4194220.00  76.77  187.00  1.8
RE DISCCART  580840.00  4194220.00  76.02  187.00  1.8
RE DISCCART  580860.00  4194220.00  75.34  187.00  1.8
RE DISCCART  580880.00  4194220.00  74.64  187.00  1.8
RE DISCCART  580900.00  4194220.00  73.86  187.00  1.8
RE DISCCART  580920.00  4194220.00  73.12  192.56  1.8
RE DISCCART  580940.00  4194220.00  72.52  192.56  1.8
RE DISCCART  580960.00  4194220.00  71.77  192.56  1.8
RE DISCCART  580980.00  4194220.00  70.79  192.56  1.8
RE DISCCART  581000.00  4194220.00  70.08  197.26  1.8
RE DISCCART  581020.00  4194220.00  70.07  192.56  1.8
RE DISCCART  581040.00  4194220.00  69.97  192.56  1.8
RE DISCCART  581060.00  4194220.00  69.72  192.56  1.8
RE DISCCART  581080.00  4194220.00  69.82  192.56  1.8
RE DISCCART  581100.00  4194220.00  69.73  192.56  1.8
RE DISCCART  581120.00  4194220.00  69.60  192.56  1.8
RE DISCCART  581140.00  4194220.00  69.23  192.56  1.8
RE DISCCART  581160.00  4194220.00  68.81  192.56  1.8
RE DISCCART  581180.00  4194220.00  68.37  192.56  1.8
RE DISCCART  581200.00  4194220.00  67.92  192.56  1.8
RE DISCCART  581220.00  4194220.00  67.40  192.56  1.8
RE DISCCART  581240.00  4194220.00  66.83  192.56  1.8
RE DISCCART  581260.00  4194220.00  66.37  192.56  1.8
RE DISCCART  581280.00  4194220.00  65.90  192.56  1.8
RE DISCCART  581300.00  4194220.00  65.45  192.56  1.8
RE DISCCART  581320.00  4194220.00  64.83  192.56  1.8
RE DISCCART  581340.00  4194220.00  64.29  192.56  1.8
RE DISCCART  581360.00  4194220.00  64.10  192.56  1.8
RE DISCCART  581380.00  4194220.00  63.81  192.56  1.8
RE DISCCART  581400.00  4194220.00  63.38  192.56  1.8
RE DISCCART  581420.00  4194220.00  63.03  192.56  1.8
RE DISCCART  581440.00  4194220.00  62.89  192.56  1.8
RE DISCCART  581460.00  4194220.00  63.12  192.56  1.8
RE DISCCART  581480.00  4194220.00  62.93  192.56  1.8
RE DISCCART  580740.00  4194240.00  82.61  187.00  1.8
RE DISCCART  580760.00  4194240.00  79.54  187.00  1.8
RE DISCCART  580780.00  4194240.00  78.76  187.00  1.8
RE DISCCART  580800.00  4194240.00  77.89  187.00  1.8
RE DISCCART  580820.00  4194240.00  77.02  187.00  1.8
RE DISCCART  580840.00  4194240.00  76.26  187.00  1.8
RE DISCCART  580860.00  4194240.00  75.50  187.00  1.8
RE DISCCART  580880.00  4194240.00  74.67  192.56  1.8
RE DISCCART  580900.00  4194240.00  73.85  192.56  1.8
RE DISCCART  580920.00  4194240.00  73.22  192.56  1.8
RE DISCCART  580940.00  4194240.00  72.57  197.26  1.8
RE DISCCART  580960.00  4194240.00  71.89  198.99  1.8
RE DISCCART  580980.00  4194240.00  70.71  198.99  1.8
RE DISCCART  581000.00  4194240.00  69.37  198.99  1.8
```

```
RE DISCCART  581020.00  4194240.00  68.66  198.99  1.8
RE DISCCART  581040.00  4194240.00  68.74  198.99  1.8
RE DISCCART  581060.00  4194240.00  68.84  198.99  1.8
RE DISCCART  581080.00  4194240.00  69.12  198.99  1.8
RE DISCCART  581100.00  4194240.00  69.29  198.99  1.8
RE DISCCART  581120.00  4194240.00  69.29  198.99  1.8
RE DISCCART  581140.00  4194240.00  69.16  198.19  1.8
RE DISCCART  581160.00  4194240.00  68.95  198.19  1.8
RE DISCCART  581180.00  4194240.00  68.57  197.26  1.8
RE DISCCART  581200.00  4194240.00  68.12  197.26  1.8
RE DISCCART  581220.00  4194240.00  67.70  197.26  1.8
RE DISCCART  581240.00  4194240.00  67.17  197.26  1.8
RE DISCCART  581260.00  4194240.00  66.66  192.56  1.8
RE DISCCART  581280.00  4194240.00  66.29  192.56  1.8
RE DISCCART  581300.00  4194240.00  65.60  192.56  1.8
RE DISCCART  581320.00  4194240.00  64.69  192.56  1.8
RE DISCCART  581340.00  4194240.00  63.75  197.26  1.8
RE DISCCART  581360.00  4194240.00  63.25  192.56  1.8
RE DISCCART  581380.00  4194240.00  63.24  192.56  1.8
RE DISCCART  581400.00  4194240.00  62.81  192.56  1.8
RE DISCCART  581420.00  4194240.00  62.53  192.56  1.8
RE DISCCART  581440.00  4194240.00  62.30  192.56  1.8
RE DISCCART  581460.00  4194240.00  62.10  192.56  1.8
RE DISCCART  581480.00  4194240.00  61.96  192.56  1.8
RE DISCCART  580740.00  4194260.00  82.67  187.00  1.8
RE DISCCART  580760.00  4194260.00  79.59  187.00  1.8
RE DISCCART  580780.00  4194260.00  78.80  187.00  1.8
RE DISCCART  580800.00  4194260.00  77.99  187.00  1.8
RE DISCCART  580820.00  4194260.00  77.20  187.00  1.8
RE DISCCART  580840.00  4194260.00  76.40  187.00  1.8
RE DISCCART  580860.00  4194260.00  75.60  192.56  1.8
RE DISCCART  580880.00  4194260.00  74.73  198.19  1.8
RE DISCCART  580900.00  4194260.00  73.89  198.99  1.8
RE DISCCART  580920.00  4194260.00  73.12  198.99  1.8
RE DISCCART  580940.00  4194260.00  72.43  198.99  1.8
RE DISCCART  580960.00  4194260.00  71.66  198.99  1.8
RE DISCCART  580980.00  4194260.00  70.50  198.99  1.8
RE DISCCART  581000.00  4194260.00  69.24  198.99  1.8
RE DISCCART  581020.00  4194260.00  68.18  198.99  1.8
RE DISCCART  581040.00  4194260.00  67.90  198.99  1.8
RE DISCCART  581060.00  4194260.00  68.01  198.99  1.8
RE DISCCART  581080.00  4194260.00  68.51  198.99  1.8
RE DISCCART  581100.00  4194260.00  68.37  198.99  1.8
RE DISCCART  581120.00  4194260.00  68.33  198.99  1.8
RE DISCCART  581140.00  4194260.00  68.48  198.99  1.8
RE DISCCART  581160.00  4194260.00  68.67  198.99  1.8
RE DISCCART  581180.00  4194260.00  68.56  198.99  1.8
RE DISCCART  581200.00  4194260.00  68.28  198.99  1.8
RE DISCCART  581220.00  4194260.00  67.94  198.99  1.8
RE DISCCART  581240.00  4194260.00  67.63  198.99  1.8
RE DISCCART  581260.00  4194260.00  67.09  198.99  1.8
RE DISCCART  581280.00  4194260.00  66.53  198.99  1.8
RE DISCCART  581300.00  4194260.00  65.65  198.99  1.8
RE DISCCART  581320.00  4194260.00  64.32  198.99  1.8
```

```
RE DISCCART  581340.00  4194260.00  63.29  198.99  1.8
RE DISCCART  581360.00  4194260.00  62.55  198.99  1.8
RE DISCCART  581380.00  4194260.00  62.22  198.99  1.8
RE DISCCART  581400.00  4194260.00  62.05  198.99  1.8
RE DISCCART  581420.00  4194260.00  61.99  198.19  1.8
RE DISCCART  581440.00  4194260.00  61.95  192.56  1.8
RE DISCCART  581460.00  4194260.00  61.48  192.56  1.8
RE DISCCART  581480.00  4194260.00  60.29  192.56  1.8
RE DISCCART  580740.00  4194280.00  82.65  187.00  1.8
RE DISCCART  580760.00  4194280.00  79.60  187.00  1.8
RE DISCCART  580780.00  4194280.00  78.86  187.00  1.8
RE DISCCART  580800.00  4194280.00  78.05  187.00  1.8
RE DISCCART  580820.00  4194280.00  77.25  192.56  1.8
RE DISCCART  580840.00  4194280.00  76.50  198.99  1.8
RE DISCCART  580860.00  4194280.00  75.70  198.99  1.8
RE DISCCART  580880.00  4194280.00  74.89  198.99  1.8
RE DISCCART  580900.00  4194280.00  74.17  198.99  1.8
RE DISCCART  580920.00  4194280.00  73.39  198.99  1.8
RE DISCCART  580940.00  4194280.00  72.56  198.99  1.8
RE DISCCART  580960.00  4194280.00  71.78  198.99  1.8
RE DISCCART  580980.00  4194280.00  70.46  198.99  1.8
RE DISCCART  581000.00  4194280.00  69.32  198.99  1.8
RE DISCCART  581020.00  4194280.00  68.33  198.99  1.8
RE DISCCART  581040.00  4194280.00  67.90  198.99  1.8
RE DISCCART  581060.00  4194280.00  67.90  198.99  1.8
RE DISCCART  581080.00  4194280.00  68.06  198.99  1.8
RE DISCCART  581100.00  4194280.00  67.99  198.99  1.8
RE DISCCART  581120.00  4194280.00  67.92  198.99  1.8
RE DISCCART  581140.00  4194280.00  68.06  198.99  1.8
RE DISCCART  581160.00  4194280.00  68.35  198.99  1.8
RE DISCCART  581180.00  4194280.00  68.47  198.99  1.8
RE DISCCART  581200.00  4194280.00  68.32  198.99  1.8
RE DISCCART  581220.00  4194280.00  68.13  198.99  1.8
RE DISCCART  581240.00  4194280.00  67.92  198.99  1.8
RE DISCCART  581260.00  4194280.00  67.40  198.99  1.8
RE DISCCART  581280.00  4194280.00  66.31  198.99  1.8
RE DISCCART  581300.00  4194280.00  65.25  198.99  1.8
RE DISCCART  581320.00  4194280.00  63.90  198.99  1.8
RE DISCCART  581340.00  4194280.00  63.04  198.99  1.8
RE DISCCART  581360.00  4194280.00  62.31  198.99  1.8
RE DISCCART  581380.00  4194280.00  61.71  198.99  1.8
RE DISCCART  581400.00  4194280.00  61.48  198.99  1.8
RE DISCCART  581420.00  4194280.00  61.40  198.99  1.8
RE DISCCART  581440.00  4194280.00  61.29  198.99  1.8
RE DISCCART  581460.00  4194280.00  59.77  198.99  1.8
RE DISCCART  581480.00  4194280.00  58.02  198.99  1.8
RE DISCCART  580740.00  4194300.00  82.57  187.00  1.8
RE DISCCART  580760.00  4194300.00  79.61  187.00  1.8
RE DISCCART  580780.00  4194300.00  78.90  192.56  1.8
RE DISCCART  580800.00  4194300.00  78.13  198.99  1.8
RE DISCCART  580820.00  4194300.00  77.35  198.99  1.8
RE DISCCART  580840.00  4194300.00  76.55  198.99  1.8
RE DISCCART  580860.00  4194300.00  75.83  198.99  1.8
RE DISCCART  580880.00  4194300.00  75.10  198.99  1.8
```

```
RE DISCCART  580900.00  4194300.00  74.38  198.99  1.8
RE DISCCART  580920.00  4194300.00  73.55  198.99  1.8
RE DISCCART  580940.00  4194300.00  72.57  198.99  1.8
RE DISCCART  580960.00  4194300.00  71.43  198.99  1.8
RE DISCCART  580980.00  4194300.00  70.37  198.99  1.8
RE DISCCART  581000.00  4194300.00  69.37  198.99  1.8
RE DISCCART  581020.00  4194300.00  68.55  198.99  1.8
RE DISCCART  581040.00  4194300.00  67.88  198.99  1.8
RE DISCCART  581060.00  4194300.00  67.81  198.99  1.8
RE DISCCART  581080.00  4194300.00  67.92  198.99  1.8
RE DISCCART  581100.00  4194300.00  67.90  198.99  1.8
RE DISCCART  581120.00  4194300.00  67.79  198.99  1.8
RE DISCCART  581140.00  4194300.00  67.90  198.99  1.8
RE DISCCART  581160.00  4194300.00  68.03  198.99  1.8
RE DISCCART  581180.00  4194300.00  68.19  198.99  1.8
RE DISCCART  581200.00  4194300.00  68.22  198.99  1.8
RE DISCCART  581220.00  4194300.00  68.13  198.99  1.8
RE DISCCART  581240.00  4194300.00  67.95  198.99  1.8
RE DISCCART  581260.00  4194300.00  67.52  198.99  1.8
RE DISCCART  581280.00  4194300.00  66.01  198.99  1.8
RE DISCCART  581300.00  4194300.00  64.41  198.99  1.8
RE DISCCART  581320.00  4194300.00  63.45  198.99  1.8
RE DISCCART  581340.00  4194300.00  62.73  198.99  1.8
RE DISCCART  581360.00  4194300.00  62.04  198.99  1.8
RE DISCCART  581380.00  4194300.00  61.44  198.99  1.8
RE DISCCART  581400.00  4194300.00  60.76  198.99  1.8
RE DISCCART  581420.00  4194300.00  60.27  198.99  1.8
RE DISCCART  581440.00  4194300.00  59.44  198.99  1.8
RE DISCCART  581460.00  4194300.00  57.96  198.99  1.8
RE DISCCART  581480.00  4194300.00  56.18  198.99  1.8
RE DISCCART  580740.00  4194320.00  83.74  187.00  1.8
RE DISCCART  580760.00  4194320.00  80.10  198.99  1.8
RE DISCCART  580780.00  4194320.00  79.07  198.99  1.8
RE DISCCART  580800.00  4194320.00  78.20  198.99  1.8
RE DISCCART  580820.00  4194320.00  77.37  198.99  1.8
RE DISCCART  580840.00  4194320.00  76.56  198.99  1.8
RE DISCCART  580860.00  4194320.00  75.85  198.99  1.8
RE DISCCART  580880.00  4194320.00  75.17  198.99  1.8
RE DISCCART  580900.00  4194320.00  74.46  198.99  1.8
RE DISCCART  580920.00  4194320.00  73.58  198.99  1.8
RE DISCCART  580940.00  4194320.00  72.41  198.99  1.8
RE DISCCART  580960.00  4194320.00  71.28  198.99  1.8
RE DISCCART  580980.00  4194320.00  70.15  198.99  1.8
RE DISCCART  581000.00  4194320.00  69.29  198.99  1.8
RE DISCCART  581020.00  4194320.00  68.51  198.99  1.8
RE DISCCART  581040.00  4194320.00  67.86  198.99  1.8
RE DISCCART  581060.00  4194320.00  67.65  198.99  1.8
RE DISCCART  581080.00  4194320.00  67.77  198.99  1.8
RE DISCCART  581100.00  4194320.00  67.83  198.99  1.8
RE DISCCART  581120.00  4194320.00  67.61  198.99  1.8
RE DISCCART  581140.00  4194320.00  67.69  198.99  1.8
RE DISCCART  581160.00  4194320.00  67.88  198.99  1.8
RE DISCCART  581180.00  4194320.00  67.87  198.99  1.8
RE DISCCART  581200.00  4194320.00  67.97  198.99  1.8
```

```
RE DISCCART  581220.00  4194320.00  67.97  198.99  1.8
RE DISCCART  581240.00  4194320.00  67.89  198.99  1.8
RE DISCCART  581260.00  4194320.00  67.25  198.99  1.8
RE DISCCART  581280.00  4194320.00  65.39  198.99  1.8
RE DISCCART  581300.00  4194320.00  63.34  198.99  1.8
RE DISCCART  581320.00  4194320.00  62.87  198.99  1.8
RE DISCCART  581340.00  4194320.00  62.20  198.99  1.8
RE DISCCART  581360.00  4194320.00  61.72  198.99  1.8
RE DISCCART  581380.00  4194320.00  61.36  198.99  1.8
RE DISCCART  581400.00  4194320.00  61.03  198.99  1.8
RE DISCCART  581420.00  4194320.00  60.66  198.99  1.8
RE DISCCART  581440.00  4194320.00  59.35  198.99  1.8
RE DISCCART  581460.00  4194320.00  57.80  198.99  1.8
RE DISCCART  581480.00  4194320.00  57.28  198.99  1.8
RE DISCCART  580740.00  4194340.00  85.07  187.00  1.8
RE DISCCART  580760.00  4194340.00  80.64  198.99  1.8
RE DISCCART  580780.00  4194340.00  79.21  198.99  1.8
RE DISCCART  580800.00  4194340.00  78.29  198.99  1.8
RE DISCCART  580820.00  4194340.00  77.39  198.99  1.8
RE DISCCART  580840.00  4194340.00  76.46  198.99  1.8
RE DISCCART  580860.00  4194340.00  75.62  198.99  1.8
RE DISCCART  580880.00  4194340.00  74.95  198.99  1.8
RE DISCCART  580900.00  4194340.00  74.32  198.99  1.8
RE DISCCART  580920.00  4194340.00  73.44  198.99  1.8
RE DISCCART  580940.00  4194340.00  72.26  198.99  1.8
RE DISCCART  580960.00  4194340.00  71.06  198.99  1.8
RE DISCCART  580980.00  4194340.00  69.95  198.99  1.8
RE DISCCART  581000.00  4194340.00  69.00  198.99  1.8
RE DISCCART  581020.00  4194340.00  68.12  198.99  1.8
RE DISCCART  581040.00  4194340.00  67.70  198.99  1.8
RE DISCCART  581060.00  4194340.00  67.41  198.99  1.8
RE DISCCART  581080.00  4194340.00  67.17  198.99  1.8
RE DISCCART  581100.00  4194340.00  66.98  198.99  1.8
RE DISCCART  581120.00  4194340.00  66.93  198.99  1.8
RE DISCCART  581140.00  4194340.00  67.03  198.99  1.8
RE DISCCART  581160.00  4194340.00  67.27  198.99  1.8
RE DISCCART  581180.00  4194340.00  67.47  198.99  1.8
RE DISCCART  581200.00  4194340.00  67.51  198.99  1.8
RE DISCCART  581220.00  4194340.00  67.51  198.99  1.8
RE DISCCART  581240.00  4194340.00  67.28  198.99  1.8
RE DISCCART  581260.00  4194340.00  66.77  198.99  1.8
RE DISCCART  581280.00  4194340.00  64.80  198.99  1.8
RE DISCCART  581300.00  4194340.00  62.41  198.99  1.8
RE DISCCART  581320.00  4194340.00  61.78  198.99  1.8
RE DISCCART  581340.00  4194340.00  61.68  198.99  1.8
RE DISCCART  581360.00  4194340.00  61.55  198.99  1.8
RE DISCCART  581380.00  4194340.00  61.20  198.99  1.8
RE DISCCART  581400.00  4194340.00  60.91  198.99  1.8
RE DISCCART  581420.00  4194340.00  60.11  198.99  1.8
RE DISCCART  581440.00  4194340.00  59.79  198.99  1.8
RE DISCCART  581460.00  4194340.00  59.06  198.99  1.8
RE DISCCART  581480.00  4194340.00  58.69  198.99  1.8
RE DISCCART  580760.00  4194360.00  80.93  198.99  1.8
RE DISCCART  580780.00  4194360.00  79.25  198.99  1.8
```

```
RE DISCCART  580800.00  4194360.00  78.29  198.99  1.8
RE DISCCART  580820.00  4194360.00  77.34  198.99  1.8
RE DISCCART  580840.00  4194360.00  76.37  198.99  1.8
RE DISCCART  580860.00  4194360.00  75.45  198.99  1.8
RE DISCCART  580880.00  4194360.00  74.38  198.99  1.8
RE DISCCART  580900.00  4194360.00  73.73  198.99  1.8
RE DISCCART  580920.00  4194360.00  73.11  198.99  1.8
RE DISCCART  580940.00  4194360.00  72.09  198.99  1.8
RE DISCCART  580960.00  4194360.00  70.87  198.99  1.8
RE DISCCART  580980.00  4194360.00  69.65  198.99  1.8
RE DISCCART  581000.00  4194360.00  68.61  198.99  1.8
RE DISCCART  581020.00  4194360.00  67.83  198.99  1.8
RE DISCCART  581040.00  4194360.00  67.54  198.99  1.8
RE DISCCART  581060.00  4194360.00  67.33  198.99  1.8
RE DISCCART  581080.00  4194360.00  67.08  198.99  1.8
RE DISCCART  581100.00  4194360.00  66.86  198.99  1.8
RE DISCCART  581120.00  4194360.00  66.56  198.99  1.8
RE DISCCART  581140.00  4194360.00  66.51  198.99  1.8
RE DISCCART  581160.00  4194360.00  66.61  198.99  1.8
RE DISCCART  581180.00  4194360.00  66.65  198.99  1.8
RE DISCCART  581200.00  4194360.00  66.60  198.99  1.8
RE DISCCART  581220.00  4194360.00  66.58  198.99  1.8
RE DISCCART  581240.00  4194360.00  66.34  198.99  1.8
RE DISCCART  581260.00  4194360.00  65.66  198.99  1.8
RE DISCCART  581280.00  4194360.00  63.88  198.99  1.8
RE DISCCART  581300.00  4194360.00  62.27  198.99  1.8
RE DISCCART  581320.00  4194360.00  61.94  198.99  1.8
RE DISCCART  581340.00  4194360.00  61.83  198.99  1.8
RE DISCCART  581360.00  4194360.00  61.69  198.99  1.8
RE DISCCART  581380.00  4194360.00  61.12  198.99  1.8
RE DISCCART  581400.00  4194360.00  61.33  198.99  1.8
RE DISCCART  581420.00  4194360.00  61.29  198.99  1.8
RE DISCCART  581440.00  4194360.00  60.83  198.99  1.8
RE DISCCART  581460.00  4194360.00  60.44  198.99  1.8
RE DISCCART  581480.00  4194360.00  59.92  198.99  1.8
RE DISCCART  580760.00  4194380.00  81.11  198.99  1.8
RE DISCCART  580780.00  4194380.00  79.20  198.99  1.8
RE DISCCART  580800.00  4194380.00  78.29  198.99  1.8
RE DISCCART  580820.00  4194380.00  77.35  198.99  1.8
RE DISCCART  580840.00  4194380.00  76.32  198.99  1.8
RE DISCCART  580860.00  4194380.00  75.31  198.99  1.8
RE DISCCART  580880.00  4194380.00  74.29  198.99  1.8
RE DISCCART  580900.00  4194380.00  73.43  198.99  1.8
RE DISCCART  580920.00  4194380.00  72.72  198.99  1.8
RE DISCCART  580940.00  4194380.00  72.03  198.99  1.8
RE DISCCART  580960.00  4194380.00  70.80  198.99  1.8
RE DISCCART  580980.00  4194380.00  69.35  198.99  1.8
RE DISCCART  581000.00  4194380.00  68.20  198.99  1.8
RE DISCCART  581020.00  4194380.00  67.76  198.99  1.8
RE DISCCART  581040.00  4194380.00  67.77  198.99  1.8
RE DISCCART  581060.00  4194380.00  67.79  198.99  1.8
RE DISCCART  581080.00  4194380.00  67.59  198.99  1.8
RE DISCCART  581100.00  4194380.00  67.07  198.99  1.8
RE DISCCART  581120.00  4194380.00  66.79  198.99  1.8
```

```
RE DISCCART  581140.00  4194380.00  66.66  198.99  1.8
RE DISCCART  581160.00  4194380.00  66.47  198.99  1.8
RE DISCCART  581180.00  4194380.00  66.20  198.99  1.8
RE DISCCART  581200.00  4194380.00  66.03  198.99  1.8
RE DISCCART  581220.00  4194380.00  65.85  198.99  1.8
RE DISCCART  581240.00  4194380.00  65.16  198.99  1.8
RE DISCCART  581260.00  4194380.00  64.48  198.99  1.8
RE DISCCART  581280.00  4194380.00  63.59  198.99  1.8
RE DISCCART  581300.00  4194380.00  63.01  198.99  1.8
RE DISCCART  581320.00  4194380.00  62.73  198.99  1.8
RE DISCCART  581340.00  4194380.00  62.37  198.99  1.8
RE DISCCART  581360.00  4194380.00  62.10  198.99  1.8
RE DISCCART  581380.00  4194380.00  61.82  198.99  1.8
RE DISCCART  581400.00  4194380.00  62.01  198.99  1.8
RE DISCCART  581420.00  4194380.00  62.02  198.99  1.8
RE DISCCART  581440.00  4194380.00  61.94  198.99  1.8
RE DISCCART  581460.00  4194380.00  61.53  198.99  1.8
RE DISCCART  581480.00  4194380.00  60.82  198.99  1.8
RE DISCCART  580760.00  4194400.00  81.00  198.99  1.8
RE DISCCART  580780.00  4194400.00  79.19  198.99  1.8
RE DISCCART  580800.00  4194400.00  78.24  198.99  1.8
RE DISCCART  580820.00  4194400.00  77.32  198.99  1.8
RE DISCCART  580840.00  4194400.00  76.23  198.99  1.8
RE DISCCART  580860.00  4194400.00  75.27  198.99  1.8
RE DISCCART  580880.00  4194400.00  74.29  198.99  1.8
RE DISCCART  580900.00  4194400.00  73.35  198.99  1.8
RE DISCCART  580920.00  4194400.00  72.55  198.99  1.8
RE DISCCART  580940.00  4194400.00  71.83  198.99  1.8
RE DISCCART  580960.00  4194400.00  70.71  198.99  1.8
RE DISCCART  580980.00  4194400.00  69.18  198.99  1.8
RE DISCCART  581000.00  4194400.00  68.10  198.99  1.8
RE DISCCART  581020.00  4194400.00  68.01  198.99  1.8
RE DISCCART  581040.00  4194400.00  68.15  198.99  1.8
RE DISCCART  581060.00  4194400.00  68.15  198.99  1.8
RE DISCCART  581080.00  4194400.00  67.80  198.99  1.8
RE DISCCART  581100.00  4194400.00  67.57  198.99  1.8
RE DISCCART  581120.00  4194400.00  67.23  198.99  1.8
RE DISCCART  581140.00  4194400.00  66.82  198.99  1.8
RE DISCCART  581160.00  4194400.00  66.49  198.99  1.8
RE DISCCART  581180.00  4194400.00  66.21  198.99  1.8
RE DISCCART  581200.00  4194400.00  65.77  198.99  1.8
RE DISCCART  581220.00  4194400.00  65.48  198.99  1.8
RE DISCCART  581240.00  4194400.00  64.99  198.99  1.8
RE DISCCART  581260.00  4194400.00  64.51  198.99  1.8
RE DISCCART  581280.00  4194400.00  64.12  198.99  1.8
RE DISCCART  581300.00  4194400.00  63.75  198.99  1.8
RE DISCCART  581320.00  4194400.00  63.39  198.99  1.8
RE DISCCART  581340.00  4194400.00  63.01  198.99  1.8
RE DISCCART  581360.00  4194400.00  62.75  198.99  1.8
RE DISCCART  581380.00  4194400.00  62.63  198.99  1.8
RE DISCCART  581400.00  4194400.00  62.71  198.99  1.8
RE DISCCART  581420.00  4194400.00  62.55  198.99  1.8
RE DISCCART  581440.00  4194400.00  62.33  198.99  1.8
RE DISCCART  581460.00  4194400.00  61.97  198.99  1.8
```

```
RE DISCCART  581480.00  4194400.00  61.31  198.99  1.8
RE DISCCART  580780.00  4194420.00  79.15  198.99  1.8
RE DISCCART  580800.00  4194420.00  78.29  198.99  1.8
RE DISCCART  580820.00  4194420.00  77.49  198.99  1.8
RE DISCCART  580840.00  4194420.00  76.22  198.99  1.8
RE DISCCART  580860.00  4194420.00  75.23  198.99  1.8
RE DISCCART  580880.00  4194420.00  74.16  198.99  1.8
RE DISCCART  580900.00  4194420.00  73.31  198.99  1.8
RE DISCCART  580920.00  4194420.00  72.56  198.99  1.8
RE DISCCART  580940.00  4194420.00  71.79  198.99  1.8
RE DISCCART  580960.00  4194420.00  70.69  198.99  1.8
RE DISCCART  580980.00  4194420.00  69.56  198.99  1.8
RE DISCCART  581000.00  4194420.00  68.91  198.99  1.8
RE DISCCART  581020.00  4194420.00  68.95  198.99  1.8
RE DISCCART  581040.00  4194420.00  68.87  198.99  1.8
RE DISCCART  581060.00  4194420.00  68.42  198.99  1.8
RE DISCCART  581080.00  4194420.00  67.94  198.99  1.8
RE DISCCART  581100.00  4194420.00  67.72  198.99  1.8
RE DISCCART  581120.00  4194420.00  67.43  198.99  1.8
RE DISCCART  581140.00  4194420.00  67.00  198.99  1.8
RE DISCCART  581160.00  4194420.00  66.62  198.99  1.8
RE DISCCART  581180.00  4194420.00  66.12  198.99  1.8
RE DISCCART  581200.00  4194420.00  65.90  198.99  1.8
RE DISCCART  581220.00  4194420.00  65.52  198.99  1.8
RE DISCCART  581240.00  4194420.00  65.01  198.99  1.8
RE DISCCART  581260.00  4194420.00  65.13  198.99  1.8
RE DISCCART  581280.00  4194420.00  64.71  198.99  1.8
RE DISCCART  581300.00  4194420.00  64.40  198.99  1.8
RE DISCCART  581320.00  4194420.00  64.21  198.99  1.8
RE DISCCART  581340.00  4194420.00  63.70  198.99  1.8
RE DISCCART  581360.00  4194420.00  63.54  198.99  1.8
RE DISCCART  581380.00  4194420.00  63.29  198.99  1.8
RE DISCCART  581400.00  4194420.00  63.21  198.99  1.8
RE DISCCART  581420.00  4194420.00  62.97  198.99  1.8
RE DISCCART  581440.00  4194420.00  62.59  198.99  1.8
RE DISCCART  581460.00  4194420.00  62.05  198.99  1.8
RE DISCCART  581480.00  4194420.00  61.40  198.99  1.8
RE DISCCART  580780.00  4194440.00  79.27  198.99  1.8
RE DISCCART  580800.00  4194440.00  78.73  198.99  1.8
RE DISCCART  580820.00  4194440.00  77.75  198.99  1.8
RE DISCCART  580840.00  4194440.00  76.31  198.99  1.8
RE DISCCART  580860.00  4194440.00  75.09  198.99  1.8
RE DISCCART  580880.00  4194440.00  73.97  198.99  1.8
RE DISCCART  580900.00  4194440.00  73.18  198.99  1.8
RE DISCCART  580920.00  4194440.00  72.39  198.99  1.8
RE DISCCART  580940.00  4194440.00  71.76  198.99  1.8
RE DISCCART  580960.00  4194440.00  70.86  198.99  1.8
RE DISCCART  580980.00  4194440.00  70.02  198.99  1.8
RE DISCCART  581000.00  4194440.00  69.69  198.99  1.8
RE DISCCART  581020.00  4194440.00  69.55  198.99  1.8
RE DISCCART  581040.00  4194440.00  69.22  198.99  1.8
RE DISCCART  581060.00  4194440.00  68.77  198.99  1.8
RE DISCCART  581080.00  4194440.00  68.41  198.99  1.8
RE DISCCART  581100.00  4194440.00  67.94  198.99  1.8
```

```
RE DISCCART  581120.00  4194440.00  67.55  198.99  1.8
RE DISCCART  581140.00  4194440.00  67.20  198.99  1.8
RE DISCCART  581160.00  4194440.00  66.80  198.99  1.8
RE DISCCART  581180.00  4194440.00  66.38  198.99  1.8
RE DISCCART  581200.00  4194440.00  66.07  198.99  1.8
RE DISCCART  581220.00  4194440.00  65.56  198.99  1.8
RE DISCCART  581240.00  4194440.00  65.36  198.99  1.8
RE DISCCART  581260.00  4194440.00  65.61  198.99  1.8
RE DISCCART  581280.00  4194440.00  65.68  198.99  1.8
RE DISCCART  581300.00  4194440.00  65.27  198.99  1.8
RE DISCCART  581320.00  4194440.00  64.84  198.99  1.8
RE DISCCART  581340.00  4194440.00  64.43  198.99  1.8
RE DISCCART  581360.00  4194440.00  64.08  198.99  1.8
RE DISCCART  581380.00  4194440.00  63.73  198.99  1.8
RE DISCCART  581400.00  4194440.00  63.46  198.99  1.8
RE DISCCART  581420.00  4194440.00  63.05  198.99  1.8
RE DISCCART  581440.00  4194440.00  62.56  198.99  1.8
RE DISCCART  581460.00  4194440.00  61.90  198.99  1.8
RE DISCCART  581480.00  4194440.00  61.21  198.99  1.8
RE DISCCART  580800.00  4194460.00  79.48  198.99  1.8
RE DISCCART  580820.00  4194460.00  78.12  198.99  1.8
RE DISCCART  580840.00  4194460.00  76.39  198.99  1.8
RE DISCCART  580860.00  4194460.00  75.00  198.99  1.8
RE DISCCART  580880.00  4194460.00  73.80  198.99  1.8
RE DISCCART  580900.00  4194460.00  73.09  198.99  1.8
RE DISCCART  580920.00  4194460.00  72.41  198.99  1.8
RE DISCCART  580940.00  4194460.00  71.64  198.99  1.8
RE DISCCART  580960.00  4194460.00  70.89  198.99  1.8
RE DISCCART  580980.00  4194460.00  70.13  198.99  1.8
RE DISCCART  581000.00  4194460.00  69.80  198.99  1.8
RE DISCCART  581020.00  4194460.00  69.53  198.99  1.8
RE DISCCART  581040.00  4194460.00  69.34  198.99  1.8
RE DISCCART  581060.00  4194460.00  69.09  198.99  1.8
RE DISCCART  581080.00  4194460.00  68.64  198.99  1.8
RE DISCCART  581100.00  4194460.00  68.16  198.99  1.8
RE DISCCART  581120.00  4194460.00  67.77  198.99  1.8
RE DISCCART  581140.00  4194460.00  67.34  198.99  1.8
RE DISCCART  581160.00  4194460.00  66.92  198.99  1.8
RE DISCCART  581180.00  4194460.00  66.54  198.99  1.8
RE DISCCART  581200.00  4194460.00  66.14  198.99  1.8
RE DISCCART  581220.00  4194460.00  66.02  198.99  1.8
RE DISCCART  581240.00  4194460.00  66.06  198.99  1.8
RE DISCCART  581260.00  4194460.00  66.45  198.99  1.8
RE DISCCART  581280.00  4194460.00  66.42  198.99  1.8
RE DISCCART  581300.00  4194460.00  66.03  198.99  1.8
RE DISCCART  581320.00  4194460.00  65.68  198.99  1.8
RE DISCCART  581340.00  4194460.00  65.28  198.99  1.8
RE DISCCART  581360.00  4194460.00  64.69  198.99  1.8
RE DISCCART  581380.00  4194460.00  64.03  198.99  1.8
RE DISCCART  581400.00  4194460.00  63.52  198.99  1.8
RE DISCCART  581420.00  4194460.00  62.97  198.99  1.8
RE DISCCART  581440.00  4194460.00  62.38  198.99  1.8
RE DISCCART  581460.00  4194460.00  61.67  198.99  1.8
RE DISCCART  581480.00  4194460.00  61.07  198.99  1.8
```

```
RE DISCCART  580800.00  4194480.00  79.78  198.99  1.8
RE DISCCART  580820.00  4194480.00  78.34  198.99  1.8
RE DISCCART  580840.00  4194480.00  76.65  198.99  1.8
RE DISCCART  580860.00  4194480.00  75.07  198.99  1.8
RE DISCCART  580880.00  4194480.00  73.75  198.99  1.8
RE DISCCART  580900.00  4194480.00  73.03  198.99  1.8
RE DISCCART  580920.00  4194480.00  72.29  198.99  1.8
RE DISCCART  580940.00  4194480.00  71.63  198.99  1.8
RE DISCCART  580960.00  4194480.00  70.67  198.99  1.8
RE DISCCART  580980.00  4194480.00  69.79  198.99  1.8
RE DISCCART  581000.00  4194480.00  69.35  198.99  1.8
RE DISCCART  581020.00  4194480.00  69.04  198.99  1.8
RE DISCCART  581040.00  4194480.00  68.88  198.99  1.8
RE DISCCART  581060.00  4194480.00  68.72  198.99  1.8
RE DISCCART  581080.00  4194480.00  68.49  198.99  1.8
RE DISCCART  581100.00  4194480.00  68.14  198.99  1.8
RE DISCCART  581120.00  4194480.00  67.78  198.99  1.8
RE DISCCART  581140.00  4194480.00  67.32  198.99  1.8
RE DISCCART  581160.00  4194480.00  66.93  198.99  1.8
RE DISCCART  581180.00  4194480.00  66.59  198.99  1.8
RE DISCCART  581200.00  4194480.00  66.51  198.99  1.8
RE DISCCART  581220.00  4194480.00  66.60  198.99  1.8
RE DISCCART  581240.00  4194480.00  66.94  198.99  1.8
RE DISCCART  581260.00  4194480.00  67.28  198.99  1.8
RE DISCCART  581280.00  4194480.00  67.11  198.99  1.8
RE DISCCART  581300.00  4194480.00  66.85  198.99  1.8
RE DISCCART  581320.00  4194480.00  66.44  198.99  1.8
RE DISCCART  581340.00  4194480.00  66.05  198.99  1.8
RE DISCCART  581360.00  4194480.00  65.41  198.99  1.8
RE DISCCART  581380.00  4194480.00  64.43  198.99  1.8
RE DISCCART  581400.00  4194480.00  63.58  198.99  1.8
RE DISCCART  581420.00  4194480.00  62.88  198.99  1.8
RE DISCCART  581440.00  4194480.00  62.19  198.99  1.8
RE DISCCART  581460.00  4194480.00  61.56  198.99  1.8
RE DISCCART  580800.00  4194500.00  80.26  198.99  1.8
RE DISCCART  580820.00  4194500.00  78.80  198.99  1.8
RE DISCCART  580840.00  4194500.00  77.05  198.99  1.8
RE DISCCART  580860.00  4194500.00  75.16  198.99  1.8
RE DISCCART  580880.00  4194500.00  73.77  198.99  1.8
RE DISCCART  580900.00  4194500.00  73.10  198.99  1.8
RE DISCCART  580920.00  4194500.00  72.38  198.99  1.8
RE DISCCART  580940.00  4194500.00  71.55  198.99  1.8
RE DISCCART  580960.00  4194500.00  70.34  198.99  1.8
RE DISCCART  580980.00  4194500.00  69.23  198.99  1.8
RE DISCCART  581000.00  4194500.00  68.68  198.99  1.8
RE DISCCART  581020.00  4194500.00  68.33  198.99  1.8
RE DISCCART  581040.00  4194500.00  68.11  198.99  1.8
RE DISCCART  581060.00  4194500.00  68.01  198.99  1.8
RE DISCCART  581080.00  4194500.00  67.86  198.99  1.8
RE DISCCART  581100.00  4194500.00  67.84  198.99  1.8
RE DISCCART  581120.00  4194500.00  67.68  198.99  1.8
RE DISCCART  581140.00  4194500.00  67.24  198.99  1.8
RE DISCCART  581160.00  4194500.00  67.01  198.99  1.8
RE DISCCART  581180.00  4194500.00  67.03  198.99  1.8
```

```
RE DISCCART  581200.00  4194500.00  66.99  198.99  1.8
RE DISCCART  581220.00  4194500.00  67.34  198.99  1.8
RE DISCCART  581240.00  4194500.00  67.99  198.99  1.8
RE DISCCART  581260.00  4194500.00  68.01  198.99  1.8
RE DISCCART  581280.00  4194500.00  67.81  198.99  1.8
RE DISCCART  581300.00  4194500.00  67.54  198.99  1.8
RE DISCCART  581320.00  4194500.00  67.20  198.99  1.8
RE DISCCART  581340.00  4194500.00  66.63  198.99  1.8
RE DISCCART  581360.00  4194500.00  65.82  198.99  1.8
RE DISCCART  581380.00  4194500.00  64.85  198.99  1.8
RE DISCCART  581400.00  4194500.00  63.97  198.99  1.8
RE DISCCART  581420.00  4194500.00  63.09  198.99  1.8
RE DISCCART  581440.00  4194500.00  62.21  198.99  1.8
RE DISCCART  581460.00  4194500.00  61.53  198.99  1.8
RE DISCCART  580800.00  4194520.00  82.10  198.99  1.8
RE DISCCART  580820.00  4194520.00  79.49  198.99  1.8
RE DISCCART  580840.00  4194520.00  77.44  198.99  1.8
RE DISCCART  580860.00  4194520.00  75.28  198.99  1.8
RE DISCCART  580880.00  4194520.00  73.73  198.99  1.8
RE DISCCART  580900.00  4194520.00  72.93  198.99  1.8
RE DISCCART  580920.00  4194520.00  72.22  198.99  1.8
RE DISCCART  580940.00  4194520.00  71.56  198.99  1.8
RE DISCCART  580960.00  4194520.00  70.28  198.99  1.8
RE DISCCART  580980.00  4194520.00  68.77  198.99  1.8
RE DISCCART  581000.00  4194520.00  67.94  198.99  1.8
RE DISCCART  581020.00  4194520.00  67.77  198.99  1.8
RE DISCCART  581040.00  4194520.00  67.76  198.99  1.8
RE DISCCART  581060.00  4194520.00  67.75  198.99  1.8
RE DISCCART  581080.00  4194520.00  67.92  198.99  1.8
RE DISCCART  581100.00  4194520.00  67.79  198.99  1.8
RE DISCCART  581120.00  4194520.00  67.63  198.99  1.8
RE DISCCART  581140.00  4194520.00  67.57  198.99  1.8
RE DISCCART  581160.00  4194520.00  67.59  198.99  1.8
RE DISCCART  581180.00  4194520.00  67.49  198.99  1.8
RE DISCCART  581200.00  4194520.00  67.40  198.99  1.8
RE DISCCART  581220.00  4194520.00  67.70  198.99  1.8
RE DISCCART  581240.00  4194520.00  68.29  198.99  1.8
RE DISCCART  581260.00  4194520.00  68.81  198.99  1.8
RE DISCCART  581280.00  4194520.00  68.57  198.99  1.8
RE DISCCART  581300.00  4194520.00  68.35  198.99  1.8
RE DISCCART  581320.00  4194520.00  67.85  198.99  1.8
RE DISCCART  581340.00  4194520.00  67.05  198.99  1.8
RE DISCCART  581360.00  4194520.00  66.15  198.99  1.8
RE DISCCART  581380.00  4194520.00  65.16  198.99  1.8
RE DISCCART  581400.00  4194520.00  64.33  198.99  1.8
RE DISCCART  581420.00  4194520.00  63.45  198.99  1.8
RE DISCCART  581440.00  4194520.00  62.59  198.99  1.8
RE DISCCART  581460.00  4194520.00  61.94  198.99  1.8
RE DISCCART  580800.00  4194540.00  84.73  198.99  1.8
RE DISCCART  580820.00  4194540.00  80.20  198.99  1.8
RE DISCCART  580840.00  4194540.00  77.69  198.99  1.8
RE DISCCART  580860.00  4194540.00  75.40  198.99  1.8
RE DISCCART  580880.00  4194540.00  73.73  198.99  1.8
RE DISCCART  580900.00  4194540.00  72.99  198.99  1.8
```

```
RE DISCCART  580920.00  4194540.00  72.31  198.99  1.8
RE DISCCART  580940.00  4194540.00  71.70  198.99  1.8
RE DISCCART  580960.00  4194540.00  70.48  198.99  1.8
RE DISCCART  580980.00  4194540.00  68.84  198.99  1.8
RE DISCCART  581000.00  4194540.00  68.09  198.99  1.8
RE DISCCART  581020.00  4194540.00  67.73  198.99  1.8
RE DISCCART  581040.00  4194540.00  67.75  198.99  1.8
RE DISCCART  581060.00  4194540.00  68.35  198.99  1.8
RE DISCCART  581080.00  4194540.00  68.69  198.99  1.8
RE DISCCART  581100.00  4194540.00  68.32  198.99  1.8
RE DISCCART  581120.00  4194540.00  68.23  198.99  1.8
RE DISCCART  581140.00  4194540.00  68.31  198.99  1.8
RE DISCCART  581160.00  4194540.00  68.24  198.99  1.8
RE DISCCART  581180.00  4194540.00  67.96  198.99  1.8
RE DISCCART  581200.00  4194540.00  67.95  198.99  1.8
RE DISCCART  581220.00  4194540.00  67.92  198.99  1.8
RE DISCCART  581240.00  4194540.00  68.75  198.99  1.8
RE DISCCART  581260.00  4194540.00  69.61  198.99  1.8
RE DISCCART  581280.00  4194540.00  69.38  198.99  1.8
RE DISCCART  581300.00  4194540.00  69.00  198.99  1.8
RE DISCCART  581320.00  4194540.00  68.11  198.99  1.8
RE DISCCART  581340.00  4194540.00  67.25  198.99  1.8
RE DISCCART  581360.00  4194540.00  66.37  198.99  1.8
RE DISCCART  581380.00  4194540.00  65.56  198.99  1.8
RE DISCCART  581400.00  4194540.00  64.72  198.99  1.8
RE DISCCART  581420.00  4194540.00  63.82  198.99  1.8
RE DISCCART  581440.00  4194540.00  63.12  198.99  1.8
RE DISCCART  581460.00  4194540.00  62.56  198.99  1.8
RE DISCCART  580800.00  4194560.00  86.98  198.99  1.8
RE DISCCART  580820.00  4194560.00  80.61  198.99  1.8
RE DISCCART  580840.00  4194560.00  77.86  198.99  1.8
RE DISCCART  580860.00  4194560.00  75.47  198.99  1.8
RE DISCCART  580880.00  4194560.00  73.79  198.99  1.8
RE DISCCART  580900.00  4194560.00  73.30  198.99  1.8
RE DISCCART  580920.00  4194560.00  72.73  198.99  1.8
RE DISCCART  580940.00  4194560.00  72.05  198.99  1.8
RE DISCCART  580960.00  4194560.00  70.84  198.99  1.8
RE DISCCART  580980.00  4194560.00  69.70  198.99  1.8
RE DISCCART  581000.00  4194560.00  68.98  198.99  1.8
RE DISCCART  581020.00  4194560.00  68.37  198.99  1.8
RE DISCCART  581040.00  4194560.00  68.32  198.99  1.8
RE DISCCART  581060.00  4194560.00  68.99  198.99  1.8
RE DISCCART  581080.00  4194560.00  69.40  198.99  1.8
RE DISCCART  581100.00  4194560.00  69.35  198.99  1.8
RE DISCCART  581120.00  4194560.00  69.33  198.99  1.8
RE DISCCART  581140.00  4194560.00  69.31  198.99  1.8
RE DISCCART  581160.00  4194560.00  69.23  198.99  1.8
RE DISCCART  581180.00  4194560.00  69.13  198.99  1.8
RE DISCCART  581200.00  4194560.00  69.11  198.99  1.8
RE DISCCART  581220.00  4194560.00  69.22  198.99  1.8
RE DISCCART  581240.00  4194560.00  69.60  198.99  1.8
RE DISCCART  581260.00  4194560.00  70.30  198.99  1.8
RE DISCCART  581280.00  4194560.00  69.84  198.99  1.8
RE DISCCART  581300.00  4194560.00  69.13  198.99  1.8
```

```
RE DISCCART  581320.00  4194560.00  68.09  198.99  1.8
RE DISCCART  581340.00  4194560.00  67.17  198.99  1.8
RE DISCCART  581360.00  4194560.00  66.45  198.99  1.8
RE DISCCART  581380.00  4194560.00  65.90  198.99  1.8
RE DISCCART  581400.00  4194560.00  65.17  198.99  1.8
RE DISCCART  581420.00  4194560.00  64.26  198.99  1.8
RE DISCCART  581440.00  4194560.00  63.51  198.99  1.8
RE DISCCART  581460.00  4194560.00  62.47  198.99  1.8
RE DISCCART  580820.00  4194580.00  80.62  198.99  1.8
RE DISCCART  580840.00  4194580.00  77.97  198.99  1.8
RE DISCCART  580860.00  4194580.00  75.53  198.99  1.8
RE DISCCART  580880.00  4194580.00  73.71  198.99  1.8
RE DISCCART  580900.00  4194580.00  73.09  198.99  1.8
RE DISCCART  580920.00  4194580.00  72.75  198.99  1.8
RE DISCCART  580940.00  4194580.00  72.40  198.99  1.8
RE DISCCART  580960.00  4194580.00  71.70  198.99  1.8
RE DISCCART  580980.00  4194580.00  70.74  198.99  1.8
RE DISCCART  581000.00  4194580.00  69.90  198.99  1.8
RE DISCCART  581020.00  4194580.00  69.61  198.99  1.8
RE DISCCART  581040.00  4194580.00  69.62  198.99  1.8
RE DISCCART  581060.00  4194580.00  69.90  198.99  1.8
RE DISCCART  581080.00  4194580.00  70.18  198.99  1.8
RE DISCCART  581100.00  4194580.00  70.29  198.99  1.8
RE DISCCART  581120.00  4194580.00  70.30  198.99  1.8
RE DISCCART  581140.00  4194580.00  70.32  198.99  1.8
RE DISCCART  581160.00  4194580.00  70.40  198.99  1.8
RE DISCCART  581180.00  4194580.00  70.41  198.99  1.8
RE DISCCART  581200.00  4194580.00  70.55  198.99  1.8
RE DISCCART  581220.00  4194580.00  70.80  198.99  1.8
RE DISCCART  581240.00  4194580.00  71.07  198.99  1.8
RE DISCCART  581260.00  4194580.00  71.15  198.99  1.8
RE DISCCART  581280.00  4194580.00  70.66  198.99  1.8
RE DISCCART  581300.00  4194580.00  69.46  198.99  1.8
RE DISCCART  581320.00  4194580.00  68.08  198.99  1.8
RE DISCCART  581340.00  4194580.00  67.27  198.99  1.8
RE DISCCART  581360.00  4194580.00  66.95  198.99  1.8
RE DISCCART  581380.00  4194580.00  66.45  198.99  1.8
RE DISCCART  581400.00  4194580.00  65.80  198.99  1.8
RE DISCCART  581420.00  4194580.00  64.80  198.99  1.8
RE DISCCART  581440.00  4194580.00  63.77  198.99  1.8
RE DISCCART  581460.00  4194580.00  62.67  198.99  1.8
RE DISCCART  580820.00  4194600.00  80.41  198.99  1.8
RE DISCCART  580840.00  4194600.00  77.99  198.99  1.8
RE DISCCART  580860.00  4194600.00  75.72  198.99  1.8
RE DISCCART  580880.00  4194600.00  73.82  198.99  1.8
RE DISCCART  580900.00  4194600.00  73.52  198.99  1.8
RE DISCCART  580920.00  4194600.00  73.29  198.99  1.8
RE DISCCART  580940.00  4194600.00  73.10  198.99  1.8
RE DISCCART  580960.00  4194600.00  72.40  198.99  1.8
RE DISCCART  580980.00  4194600.00  71.76  198.99  1.8
RE DISCCART  581000.00  4194600.00  71.04  198.99  1.8
RE DISCCART  581020.00  4194600.00  70.91  198.99  1.8
RE DISCCART  581040.00  4194600.00  70.91  198.99  1.8
RE DISCCART  581060.00  4194600.00  70.98  198.99  1.8
```

```
RE DISCCART  581080.00  4194600.00  71.09  198.99  1.8
RE DISCCART  581100.00  4194600.00  71.24  198.99  1.8
RE DISCCART  581120.00  4194600.00  71.36  198.99  1.8
RE DISCCART  581140.00  4194600.00  71.48  198.99  1.8
RE DISCCART  581160.00  4194600.00  71.62  198.99  1.8
RE DISCCART  581180.00  4194600.00  71.79  198.99  1.8
RE DISCCART  581200.00  4194600.00  71.99  198.99  1.8
RE DISCCART  581220.00  4194600.00  72.19  198.99  1.8
RE DISCCART  581240.00  4194600.00  72.54  198.99  1.8
RE DISCCART  581260.00  4194600.00  72.59  198.99  1.8
RE DISCCART  581280.00  4194600.00  71.97  198.99  1.8
RE DISCCART  581300.00  4194600.00  70.50  198.99  1.8
RE DISCCART  581320.00  4194600.00  68.50  198.99  1.8
RE DISCCART  581340.00  4194600.00  67.93  198.99  1.8
RE DISCCART  581360.00  4194600.00  67.76  198.99  1.8
RE DISCCART  581380.00  4194600.00  67.12  198.99  1.8
RE DISCCART  581400.00  4194600.00  66.40  198.99  1.8
RE DISCCART  581420.00  4194600.00  65.39  198.99  1.8
RE DISCCART  581440.00  4194600.00  64.02  198.99  1.8
RE DISCCART  580820.00  4194620.00  80.25  198.99  1.8
RE DISCCART  580840.00  4194620.00  78.31  198.99  1.8
RE DISCCART  580860.00  4194620.00  76.29  198.99  1.8
RE DISCCART  580880.00  4194620.00  74.94  198.99  1.8
RE DISCCART  580900.00  4194620.00  74.53  198.99  1.8
RE DISCCART  580920.00  4194620.00  74.32  198.99  1.8
RE DISCCART  580940.00  4194620.00  73.82  198.99  1.8
RE DISCCART  580960.00  4194620.00  72.87  198.99  1.8
RE DISCCART  580980.00  4194620.00  72.46  198.99  1.8
RE DISCCART  581000.00  4194620.00  71.88  198.99  1.8
RE DISCCART  581020.00  4194620.00  71.82  198.99  1.8
RE DISCCART  581040.00  4194620.00  71.92  198.99  1.8
RE DISCCART  581060.00  4194620.00  71.96  198.99  1.8
RE DISCCART  581080.00  4194620.00  72.01  198.99  1.8
RE DISCCART  581100.00  4194620.00  72.14  198.99  1.8
RE DISCCART  581120.00  4194620.00  72.31  198.99  1.8
RE DISCCART  581140.00  4194620.00  72.49  198.99  1.8
RE DISCCART  581160.00  4194620.00  72.71  198.99  1.8
RE DISCCART  581180.00  4194620.00  72.93  198.99  1.8
RE DISCCART  581200.00  4194620.00  73.19  198.99  1.8
RE DISCCART  581220.00  4194620.00  73.45  198.99  1.8
RE DISCCART  581240.00  4194620.00  73.78  198.99  1.8
RE DISCCART  581260.00  4194620.00  73.96  198.99  1.8
RE DISCCART  581280.00  4194620.00  73.15  198.99  1.8
RE DISCCART  581300.00  4194620.00  72.35  198.99  1.8
RE DISCCART  581320.00  4194620.00  70.95  198.99  1.8
RE DISCCART  581340.00  4194620.00  69.87  198.99  1.8
RE DISCCART  581360.00  4194620.00  68.91  198.99  1.8
RE DISCCART  581380.00  4194620.00  67.70  198.99  1.8
RE DISCCART  581400.00  4194620.00  67.12  198.99  1.8
RE DISCCART  581420.00  4194620.00  66.10  198.99  1.8
RE DISCCART  581440.00  4194620.00  64.51  198.99  1.8
RE DISCCART  580840.00  4194640.00  78.80  198.99  1.8
RE DISCCART  580860.00  4194640.00  77.53  198.99  1.8
RE DISCCART  580880.00  4194640.00  76.32  198.99  1.8
```

```
RE DISCCART  580900.00  4194640.00  75.68  198.99  1.8
RE DISCCART  580920.00  4194640.00  75.22  198.99  1.8
RE DISCCART  580940.00  4194640.00  74.05  198.99  1.8
RE DISCCART  580960.00  4194640.00  73.31  198.99  1.8
RE DISCCART  580980.00  4194640.00  72.93  198.99  1.8
RE DISCCART  581000.00  4194640.00  72.75  198.99  1.8
RE DISCCART  581020.00  4194640.00  72.89  198.99  1.8
RE DISCCART  581040.00  4194640.00  72.97  198.99  1.8
RE DISCCART  581060.00  4194640.00  73.06  198.99  1.8
RE DISCCART  581080.00  4194640.00  72.98  198.99  1.8
RE DISCCART  581100.00  4194640.00  72.99  198.99  1.8
RE DISCCART  581120.00  4194640.00  73.23  198.99  1.8
RE DISCCART  581140.00  4194640.00  73.48  198.99  1.8
RE DISCCART  581160.00  4194640.00  73.87  198.99  1.8
RE DISCCART  581180.00  4194640.00  74.21  198.99  1.8
RE DISCCART  581200.00  4194640.00  74.50  198.99  1.8
RE DISCCART  581220.00  4194640.00  74.69  198.99  1.8
RE DISCCART  581240.00  4194640.00  74.96  198.99  1.8
RE DISCCART  581260.00  4194640.00  74.78  198.99  1.8
RE DISCCART  581280.00  4194640.00  74.32  198.99  1.8
RE DISCCART  581300.00  4194640.00  73.99  198.99  1.8
RE DISCCART  581320.00  4194640.00  73.31  198.99  1.8
RE DISCCART  581340.00  4194640.00  72.49  198.99  1.8
RE DISCCART  581360.00  4194640.00  70.25  198.99  1.8
RE DISCCART  581380.00  4194640.00  68.89  198.99  1.8
RE DISCCART  581400.00  4194640.00  67.67  198.99  1.8
RE DISCCART  581420.00  4194640.00  67.15  198.99  1.8
RE DISCCART  580840.00  4194660.00  79.63  198.99  1.8
RE DISCCART  580860.00  4194660.00  78.51  198.99  1.8
RE DISCCART  580880.00  4194660.00  77.49  198.99  1.8
RE DISCCART  580900.00  4194660.00  76.59  198.99  1.8
RE DISCCART  580920.00  4194660.00  75.76  198.99  1.8
RE DISCCART  580940.00  4194660.00  74.75  198.99  1.8
RE DISCCART  580960.00  4194660.00  74.01  198.99  1.8
RE DISCCART  580980.00  4194660.00  73.64  198.99  1.8
RE DISCCART  581000.00  4194660.00  73.86  198.99  1.8
RE DISCCART  581020.00  4194660.00  74.20  198.99  1.8
RE DISCCART  581040.00  4194660.00  74.48  198.99  1.8
RE DISCCART  581060.00  4194660.00  74.56  198.99  1.8
RE DISCCART  581080.00  4194660.00  74.39  198.99  1.8
RE DISCCART  581100.00  4194660.00  74.50  198.99  1.8
RE DISCCART  581120.00  4194660.00  75.45  198.99  1.8
RE DISCCART  581140.00  4194660.00  76.83  198.99  1.8
RE DISCCART  581160.00  4194660.00  77.77  198.99  1.8
RE DISCCART  581180.00  4194660.00  76.46  198.99  1.8
RE DISCCART  581200.00  4194660.00  75.85  198.99  1.8
RE DISCCART  581220.00  4194660.00  75.79  198.99  1.8
RE DISCCART  581240.00  4194660.00  75.81  198.99  1.8
RE DISCCART  581260.00  4194660.00  75.55  198.99  1.8
RE DISCCART  581280.00  4194660.00  75.18  198.99  1.8
RE DISCCART  581300.00  4194660.00  74.66  198.99  1.8
RE DISCCART  581320.00  4194660.00  74.30  198.99  1.8
RE DISCCART  581340.00  4194660.00  73.57  198.99  1.8
RE DISCCART  581360.00  4194660.00  71.52  198.99  1.8
```

```
RE DISCCART  581380.00  4194660.00  69.60  198.99  1.8
RE DISCCART  581400.00  4194660.00  68.68  198.99  1.8
RE DISCCART  581420.00  4194660.00  67.80  198.99  1.8
RE DISCCART  580860.00  4194680.00  79.32  198.99  1.8
RE DISCCART  580880.00  4194680.00  78.13  198.99  1.8
RE DISCCART  580900.00  4194680.00  77.02  198.99  1.8
RE DISCCART  580920.00  4194680.00  76.55  198.99  1.8
RE DISCCART  580940.00  4194680.00  76.06  198.99  1.8
RE DISCCART  580960.00  4194680.00  75.88  198.99  1.8
RE DISCCART  580980.00  4194680.00  75.93  198.99  1.8
RE DISCCART  581000.00  4194680.00  76.24  198.99  1.8
RE DISCCART  581020.00  4194680.00  77.08  198.99  1.8
RE DISCCART  581040.00  4194680.00  77.67  198.99  1.8
RE DISCCART  581060.00  4194680.00  77.79  198.99  1.8
RE DISCCART  581080.00  4194680.00  77.46  198.99  1.8
RE DISCCART  581100.00  4194680.00  78.28  198.99  1.8
RE DISCCART  581120.00  4194680.00  79.43  198.99  1.8
RE DISCCART  581140.00  4194680.00  80.44  198.99  1.8
RE DISCCART  581160.00  4194680.00  80.24  198.99  1.8
RE DISCCART  581180.00  4194680.00  78.67  198.99  1.8
RE DISCCART  581200.00  4194680.00  77.57  198.99  1.8
RE DISCCART  581220.00  4194680.00  76.97  198.99  1.8
RE DISCCART  581240.00  4194680.00  76.66  198.99  1.8
RE DISCCART  581260.00  4194680.00  75.61  198.99  1.8
RE DISCCART  581280.00  4194680.00  74.49  198.99  1.8
RE DISCCART  581300.00  4194680.00  74.30  198.99  1.8
RE DISCCART  581320.00  4194680.00  74.22  198.99  1.8
RE DISCCART  581340.00  4194680.00  73.66  198.99  1.8
RE DISCCART  581360.00  4194680.00  71.98  198.99  1.8
RE DISCCART  581380.00  4194680.00  70.40  198.99  1.8
RE DISCCART  581400.00  4194680.00  69.24  198.99  1.8
RE DISCCART  580880.00  4194700.00  78.40  198.99  1.8
RE DISCCART  580900.00  4194700.00  77.58  198.99  1.8
RE DISCCART  580920.00  4194700.00  77.60  198.99  1.8
RE DISCCART  580940.00  4194700.00  78.06  198.99  1.8
RE DISCCART  580960.00  4194700.00  78.36  198.99  1.8
RE DISCCART  580980.00  4194700.00  78.77  198.99  1.8
RE DISCCART  581000.00  4194700.00  79.29  198.99  1.8
RE DISCCART  581020.00  4194700.00  79.56  198.99  1.8
RE DISCCART  581040.00  4194700.00  80.54  198.99  1.8
RE DISCCART  581060.00  4194700.00  80.35  198.99  1.8
RE DISCCART  581080.00  4194700.00  80.12  198.99  1.8
RE DISCCART  581100.00  4194700.00  80.82  198.99  1.8
RE DISCCART  581120.00  4194700.00  81.37  198.99  1.8
RE DISCCART  581140.00  4194700.00  81.63  198.99  1.8
RE DISCCART  581160.00  4194700.00  80.79  198.99  1.8
RE DISCCART  581180.00  4194700.00  79.39  198.99  1.8
RE DISCCART  581200.00  4194700.00  78.26  198.99  1.8
RE DISCCART  581220.00  4194700.00  77.58  198.99  1.8
RE DISCCART  581240.00  4194700.00  76.57  198.99  1.8
RE DISCCART  581260.00  4194700.00  74.66  198.99  1.8
RE DISCCART  581280.00  4194700.00  73.84  198.99  1.8
RE DISCCART  581300.00  4194700.00  73.80  198.99  1.8
RE DISCCART  581320.00  4194700.00  73.62  198.99  1.8
```

```
RE DISCCART  581340.00  4194700.00  73.04  198.99  1.8
RE DISCCART  581360.00  4194700.00  71.97  198.99  1.8
RE DISCCART  581380.00  4194700.00  70.62  198.99  1.8
RE DISCCART  580900.00  4194720.00  78.38  233.85  1.8
RE DISCCART  580920.00  4194720.00  78.75  198.99  1.8
RE DISCCART  580940.00  4194720.00  79.58  198.99  1.8
RE DISCCART  580960.00  4194720.00  81.32  198.99  1.8
RE DISCCART  580980.00  4194720.00  83.24  198.99  1.8
RE DISCCART  581000.00  4194720.00  82.05  198.99  1.8
RE DISCCART  581020.00  4194720.00  80.08  198.99  1.8
RE DISCCART  581040.00  4194720.00  81.60  198.99  1.8
RE DISCCART  581060.00  4194720.00  82.21  198.99  1.8
RE DISCCART  581080.00  4194720.00  82.26  198.99  1.8
RE DISCCART  581100.00  4194720.00  82.55  198.99  1.8
RE DISCCART  581120.00  4194720.00  82.81  198.99  1.8
RE DISCCART  581140.00  4194720.00  82.80  198.99  1.8
RE DISCCART  581160.00  4194720.00  81.72  198.99  1.8
RE DISCCART  581180.00  4194720.00  79.91  198.99  1.8
RE DISCCART  581200.00  4194720.00  79.01  198.99  1.8
RE DISCCART  581220.00  4194720.00  78.49  198.99  1.8
RE DISCCART  581240.00  4194720.00  77.65  198.99  1.8
RE DISCCART  581260.00  4194720.00  75.75  198.99  1.8
RE DISCCART  581280.00  4194720.00  74.96  198.99  1.8
RE DISCCART  581300.00  4194720.00  74.63  198.99  1.8
RE DISCCART  581320.00  4194720.00  73.60  198.99  1.8
RE DISCCART  581340.00  4194720.00  72.66  198.99  1.8
RE DISCCART  581360.00  4194720.00  72.25  198.99  1.8
RE DISCCART  580920.00  4194740.00  83.27  198.99  1.8
RE DISCCART  580940.00  4194740.00  85.33  198.99  1.8
RE DISCCART  580960.00  4194740.00  86.66  198.99  1.8
RE DISCCART  580980.00  4194740.00  86.75  198.99  1.8
RE DISCCART  581000.00  4194740.00  84.51  198.99  1.8
RE DISCCART  581020.00  4194740.00  82.73  198.99  1.8
RE DISCCART  581040.00  4194740.00  83.20  198.99  1.8
RE DISCCART  581060.00  4194740.00  84.12  198.99  1.8
RE DISCCART  581080.00  4194740.00  84.43  198.99  1.8
RE DISCCART  581100.00  4194740.00  84.32  198.99  1.8
RE DISCCART  581120.00  4194740.00  84.52  198.99  1.8
RE DISCCART  581140.00  4194740.00  84.61  198.99  1.8
RE DISCCART  581160.00  4194740.00  83.96  198.99  1.8
RE DISCCART  581180.00  4194740.00  81.61  198.99  1.8
RE DISCCART  581200.00  4194740.00  80.15  198.99  1.8
RE DISCCART  581220.00  4194740.00  79.55  198.99  1.8
RE DISCCART  581240.00  4194740.00  78.93  198.99  1.8
RE DISCCART  581260.00  4194740.00  78.18  198.99  1.8
RE DISCCART  581280.00  4194740.00  77.65  198.99  1.8
RE DISCCART  581300.00  4194740.00  76.78  198.99  1.8
RE DISCCART  581320.00  4194740.00  74.37  198.99  1.8
RE DISCCART  581340.00  4194740.00  73.75  198.99  1.8
RE DISCCART  580960.00  4194760.00  88.55  198.99  1.8
RE DISCCART  580980.00  4194760.00  88.12  198.99  1.8
RE DISCCART  581000.00  4194760.00  86.03  198.99  1.8
RE DISCCART  581020.00  4194760.00  85.06  198.99  1.8
RE DISCCART  581040.00  4194760.00  85.58  198.99  1.8
```

```
RE DISCCART  581060.00  4194760.00  86.50  198.99  1.8
RE DISCCART  581080.00  4194760.00  86.93  198.99  1.8
RE DISCCART  581100.00  4194760.00  86.21  198.99  1.8
RE DISCCART  581120.00  4194760.00  88.17  198.99  1.8
RE DISCCART  581140.00  4194760.00  88.51  198.99  1.8
RE DISCCART  581160.00  4194760.00  87.88  198.99  1.8
RE DISCCART  581180.00  4194760.00  86.43  198.99  1.8
RE DISCCART  581200.00  4194760.00  83.37  198.99  1.8
RE DISCCART  581220.00  4194760.00  81.83  198.99  1.8
RE DISCCART  581240.00  4194760.00  80.70  198.99  1.8
RE DISCCART  581260.00  4194760.00  79.88  198.99  1.8
RE DISCCART  581280.00  4194760.00  80.24  198.99  1.8
RE DISCCART  581300.00  4194760.00  80.96  198.99  1.8
RE DISCCART  581000.00  4194780.00  89.83  198.99  1.8
RE DISCCART  581020.00  4194780.00  88.51  198.99  1.8
RE DISCCART  581040.00  4194780.00  89.94  198.99  1.8
RE DISCCART  581060.00  4194780.00  92.08  198.99  1.8
RE DISCCART  581080.00  4194780.00  94.95  198.99  1.8
RE DISCCART  581100.00  4194780.00  98.41  198.99  1.8
RE DISCCART  581120.00  4194780.00  97.06  198.99  1.8
RE DISCCART  581140.00  4194780.00  94.64  198.99  1.8
RE DISCCART  581160.00  4194780.00  94.37  198.99  1.8
RE DISCCART  581180.00  4194780.00  91.62  198.99  1.8
RE DISCCART  581200.00  4194780.00  86.19  198.99  1.8
RE DISCCART  581220.00  4194780.00  84.08  198.99  1.8
RE DISCCART  581240.00  4194780.00  83.09  198.99  1.8
RE DISCCART  581260.00  4194780.00  82.90  198.99  1.8
```

```
** AERMAP - VERSION 11103                                          03/31/15
** A total of       2  NED files were used
** A total of    1316  receptors were processed
** DOMAINXY 579122 4192367 10 583122 4196367 10
** ANCHORXY 580122 4193367 580122 4193367 10 4
** TERRHGTS EXTRACT

RE DISCCART  581000.00  4193960.00  52.74  180.03  4.8
RE DISCCART  581020.00  4193960.00  58.63  180.03  4.8
RE DISCCART  581040.00  4193960.00  59.25  180.03  4.8
RE DISCCART  581060.00  4193960.00  59.09  179.69  4.8
RE DISCCART  581080.00  4193960.00  58.80  170.79  4.8
RE DISCCART  581100.00  4193960.00  58.10  170.79  4.8
RE DISCCART  581120.00  4193960.00  57.35  170.79  4.8
RE DISCCART  581140.00  4193960.00  56.84  170.79  4.8
RE DISCCART  581160.00  4193960.00  56.35  170.79  4.8
RE DISCCART  581180.00  4193960.00  55.86  170.79  4.8
RE DISCCART  581200.00  4193960.00  52.20  170.79  4.8
RE DISCCART  580940.00  4193980.00  60.00  180.03  4.8
RE DISCCART  580960.00  4193980.00  54.72  180.03  4.8
RE DISCCART  580980.00  4193980.00  45.62  198.99  4.8
RE DISCCART  581000.00  4193980.00  47.38  192.56  4.8
RE DISCCART  581020.00  4193980.00  55.02  180.03  4.8
RE DISCCART  581040.00  4193980.00  57.40  180.03  4.8
RE DISCCART  581060.00  4193980.00  57.70  179.69  4.8
RE DISCCART  581080.00  4193980.00  57.96  170.79  4.8
RE DISCCART  581100.00  4193980.00  57.44  170.79  4.8
RE DISCCART  581120.00  4193980.00  56.57  170.79  4.8
RE DISCCART  581140.00  4193980.00  55.68  170.79  4.8
RE DISCCART  581160.00  4193980.00  54.77  170.79  4.8
RE DISCCART  581180.00  4193980.00  53.66  170.79  4.8
RE DISCCART  581200.00  4193980.00  48.85  192.56  4.8
RE DISCCART  581220.00  4193980.00  46.22  192.56  4.8
RE DISCCART  581240.00  4193980.00  46.17  192.56  4.8
RE DISCCART  581260.00  4193980.00  46.48  192.56  4.8
RE DISCCART  581280.00  4193980.00  47.94  192.56  4.8
RE DISCCART  580900.00  4194000.00  68.23  170.46  4.8
RE DISCCART  580920.00  4194000.00  66.00  170.79  4.8
RE DISCCART  580940.00  4194000.00  67.18   68.26  4.8
RE DISCCART  580960.00  4194000.00  63.35  170.79  4.8
RE DISCCART  580980.00  4194000.00  51.24  192.56  4.8
RE DISCCART  581000.00  4194000.00  45.55  198.99  4.8
RE DISCCART  581020.00  4194000.00  47.81  198.19  4.8
RE DISCCART  581040.00  4194000.00  52.32  180.03  4.8
RE DISCCART  581060.00  4194000.00  55.44  180.03  4.8
RE DISCCART  581080.00  4194000.00  56.48  170.79  4.8
RE DISCCART  581100.00  4194000.00  56.44  170.79  4.8
RE DISCCART  581120.00  4194000.00  54.22  170.79  4.8
RE DISCCART  581140.00  4194000.00  48.53  192.56  4.8
RE DISCCART  581160.00  4194000.00  47.12  192.56  4.8
RE DISCCART  581180.00  4194000.00  46.78  192.56  4.8
RE DISCCART  581200.00  4194000.00  45.69  192.56  4.8
RE DISCCART  581220.00  4194000.00  48.24  192.56  4.8
RE DISCCART  581240.00  4194000.00  51.43  167.12  4.8
```

```
RE DISCCART  581260.00  4194000.00  49.45  192.56  4.8
RE DISCCART  581280.00  4194000.00  45.65  192.56  4.8
RE DISCCART  581300.00  4194000.00  45.97  192.56  4.8
RE DISCCART  581320.00  4194000.00  48.75  192.56  4.8
RE DISCCART  580880.00  4194020.00  69.71   69.71  4.8
RE DISCCART  580900.00  4194020.00  68.22   68.22  4.8
RE DISCCART  580920.00  4194020.00  68.22   68.22  4.8
RE DISCCART  580940.00  4194020.00  68.60   68.60  4.8
RE DISCCART  580960.00  4194020.00  67.85   67.85  4.8
RE DISCCART  580980.00  4194020.00  64.52   73.50  4.8
RE DISCCART  581000.00  4194020.00  53.44  192.56  4.8
RE DISCCART  581020.00  4194020.00  46.05  198.99  4.8
RE DISCCART  581040.00  4194020.00  45.85  198.99  4.8
RE DISCCART  581060.00  4194020.00  48.66  198.99  4.8
RE DISCCART  581080.00  4194020.00  50.91  192.56  4.8
RE DISCCART  581100.00  4194020.00  51.11  192.56  4.8
RE DISCCART  581120.00  4194020.00  47.34  198.99  4.8
RE DISCCART  581140.00  4194020.00  46.03  198.99  4.8
RE DISCCART  581160.00  4194020.00  49.20  192.56  4.8
RE DISCCART  581180.00  4194020.00  49.60  192.56  4.8
RE DISCCART  581200.00  4194020.00  52.54  192.56  4.8
RE DISCCART  581220.00  4194020.00  58.07   68.36  4.8
RE DISCCART  581240.00  4194020.00  62.00   62.00  4.8
RE DISCCART  581260.00  4194020.00  60.28   63.40  4.8
RE DISCCART  581280.00  4194020.00  53.30   68.36  4.8
RE DISCCART  581300.00  4194020.00  46.39  192.56  4.8
RE DISCCART  581320.00  4194020.00  45.90  192.56  4.8
RE DISCCART  581340.00  4194020.00  48.31  192.56  4.8
RE DISCCART  581360.00  4194020.00  48.36  192.56  4.8
RE DISCCART  580860.00  4194040.00  71.92   71.92  4.8
RE DISCCART  580880.00  4194040.00  70.58   70.58  4.8
RE DISCCART  580900.00  4194040.00  69.55   71.17  4.8
RE DISCCART  580920.00  4194040.00  69.71   69.71  4.8
RE DISCCART  580940.00  4194040.00  69.47   69.47  4.8
RE DISCCART  580960.00  4194040.00  69.03   69.03  4.8
RE DISCCART  580980.00  4194040.00  68.53   68.53  4.8
RE DISCCART  581000.00  4194040.00  67.23   68.39  4.8
RE DISCCART  581020.00  4194040.00  59.23  170.46  4.8
RE DISCCART  581040.00  4194040.00  49.85  198.99  4.8
RE DISCCART  581060.00  4194040.00  46.41  198.99  4.8
RE DISCCART  581080.00  4194040.00  45.76  198.99  4.8
RE DISCCART  581100.00  4194040.00  45.85  198.99  4.8
RE DISCCART  581120.00  4194040.00  46.73  198.99  4.8
RE DISCCART  581140.00  4194040.00  54.51  192.56  4.8
RE DISCCART  581160.00  4194040.00  62.76   68.36  4.8
RE DISCCART  581180.00  4194040.00  63.00   68.36  4.8
RE DISCCART  581200.00  4194040.00  62.61   68.36  4.8
RE DISCCART  581220.00  4194040.00  62.69   67.75  4.8
RE DISCCART  581240.00  4194040.00  62.98   62.98  4.8
RE DISCCART  581260.00  4194040.00  63.13   63.13  4.8
RE DISCCART  581280.00  4194040.00  58.34   63.40  4.8
RE DISCCART  581300.00  4194040.00  50.16  192.56  4.8
RE DISCCART  581320.00  4194040.00  47.51  192.56  4.8
RE DISCCART  581340.00  4194040.00  45.60  192.56  4.8
```

```
RE DISCCART  581360.00  4194040.00  45.76  192.56  4.8
RE DISCCART  581380.00  4194040.00  47.45  192.56  4.8
RE DISCCART  580840.00  4194060.00  72.91   72.91  4.8
RE DISCCART  580860.00  4194060.00  72.15   72.15  4.8
RE DISCCART  580880.00  4194060.00  71.74   71.74  4.8
RE DISCCART  580900.00  4194060.00  71.54   71.54  4.8
RE DISCCART  580920.00  4194060.00  71.29   71.29  4.8
RE DISCCART  580940.00  4194060.00  70.62   70.62  4.8
RE DISCCART  580960.00  4194060.00  70.12   70.12  4.8
RE DISCCART  580980.00  4194060.00  69.32   69.32  4.8
RE DISCCART  581000.00  4194060.00  68.86   68.86  4.8
RE DISCCART  581020.00  4194060.00  68.42   68.42  4.8
RE DISCCART  581040.00  4194060.00  67.08   68.46  4.8
RE DISCCART  581060.00  4194060.00  62.06   70.44  4.8
RE DISCCART  581080.00  4194060.00  59.37   72.19  4.8
RE DISCCART  581100.00  4194060.00  58.35   71.00  4.8
RE DISCCART  581120.00  4194060.00  61.44   68.77  4.8
RE DISCCART  581140.00  4194060.00  66.85   68.36  4.8
RE DISCCART  581160.00  4194060.00  68.15   68.15  4.8
RE DISCCART  581180.00  4194060.00  67.10   67.75  4.8
RE DISCCART  581200.00  4194060.00  64.38   68.13  4.8
RE DISCCART  581220.00  4194060.00  63.62   63.62  4.8
RE DISCCART  581240.00  4194060.00  63.08   63.08  4.8
RE DISCCART  581260.00  4194060.00  61.53   62.81  4.8
RE DISCCART  581280.00  4194060.00  56.76   68.13  4.8
RE DISCCART  581300.00  4194060.00  52.78  192.56  4.8
RE DISCCART  581320.00  4194060.00  49.80  192.56  4.8
RE DISCCART  581340.00  4194060.00  48.71  192.56  4.8
RE DISCCART  581360.00  4194060.00  48.96  192.56  4.8
RE DISCCART  581380.00  4194060.00  49.26  192.56  4.8
RE DISCCART  581400.00  4194060.00  48.84  192.56  4.8
RE DISCCART  580820.00  4194080.00  73.72  139.65  4.8
RE DISCCART  580840.00  4194080.00  73.24  139.65  4.8
RE DISCCART  580860.00  4194080.00  72.60   72.60  4.8
RE DISCCART  580880.00  4194080.00  72.20   72.20  4.8
RE DISCCART  580900.00  4194080.00  73.17   73.17  4.8
RE DISCCART  580920.00  4194080.00  73.02   73.02  4.8
RE DISCCART  580940.00  4194080.00  72.35   72.35  4.8
RE DISCCART  580960.00  4194080.00  71.21   71.21  4.8
RE DISCCART  580980.00  4194080.00  70.02   70.02  4.8
RE DISCCART  581000.00  4194080.00  69.38   69.38  4.8
RE DISCCART  581020.00  4194080.00  68.93   68.93  4.8
RE DISCCART  581040.00  4194080.00  68.52   68.52  4.8
RE DISCCART  581060.00  4194080.00  68.33   68.33  4.8
RE DISCCART  581080.00  4194080.00  68.21   68.21  4.8
RE DISCCART  581100.00  4194080.00  68.17   68.17  4.8
RE DISCCART  581120.00  4194080.00  67.91   67.91  4.8
RE DISCCART  581140.00  4194080.00  67.73   67.73  4.8
RE DISCCART  581160.00  4194080.00  67.51   67.51  4.8
RE DISCCART  581180.00  4194080.00  67.00   67.00  4.8
RE DISCCART  581200.00  4194080.00  65.51   65.51  4.8
RE DISCCART  581220.00  4194080.00  64.03   64.03  4.8
RE DISCCART  581240.00  4194080.00  62.89   62.89  4.8
RE DISCCART  581260.00  4194080.00  62.07   62.07  4.8
```

```
RE DISCCART  581280.00  4194080.00  60.86   62.27  4.8
RE DISCCART  581300.00  4194080.00  56.75  192.56  4.8
RE DISCCART  581320.00  4194080.00  54.37  192.56  4.8
RE DISCCART  581340.00  4194080.00  55.23  192.56  4.8
RE DISCCART  581360.00  4194080.00  54.05  192.56  4.8
RE DISCCART  581380.00  4194080.00  50.46  192.56  4.8
RE DISCCART  581400.00  4194080.00  48.74  192.56  4.8
RE DISCCART  581420.00  4194080.00  51.91  192.56  4.8
RE DISCCART  580800.00  4194100.00  75.01  139.65  4.8
RE DISCCART  580820.00  4194100.00  74.36  139.65  4.8
RE DISCCART  580840.00  4194100.00  73.84  139.65  4.8
RE DISCCART  580860.00  4194100.00  73.10  139.65  4.8
RE DISCCART  580880.00  4194100.00  72.65  139.28  4.8
RE DISCCART  580900.00  4194100.00  73.92   73.92  4.8
RE DISCCART  580920.00  4194100.00  73.99   73.99  4.8
RE DISCCART  580940.00  4194100.00  73.26   73.26  4.8
RE DISCCART  580960.00  4194100.00  72.21   72.21  4.8
RE DISCCART  580980.00  4194100.00  70.82   70.82  4.8
RE DISCCART  581000.00  4194100.00  69.96   69.96  4.8
RE DISCCART  581020.00  4194100.00  69.49   69.49  4.8
RE DISCCART  581040.00  4194100.00  69.12   69.12  4.8
RE DISCCART  581060.00  4194100.00  68.76   68.76  4.8
RE DISCCART  581080.00  4194100.00  68.13   68.13  4.8
RE DISCCART  581100.00  4194100.00  67.78   67.78  4.8
RE DISCCART  581120.00  4194100.00  67.39   67.39  4.8
RE DISCCART  581140.00  4194100.00  66.88   66.88  4.8
RE DISCCART  581160.00  4194100.00  66.41   66.41  4.8
RE DISCCART  581180.00  4194100.00  66.18   66.18  4.8
RE DISCCART  581200.00  4194100.00  65.72   65.72  4.8
RE DISCCART  581220.00  4194100.00  64.71   64.71  4.8
RE DISCCART  581240.00  4194100.00  63.67   63.67  4.8
RE DISCCART  581260.00  4194100.00  62.92   62.92  4.8
RE DISCCART  581280.00  4194100.00  62.26   62.26  4.8
RE DISCCART  581300.00  4194100.00  60.78   62.13  4.8
RE DISCCART  581320.00  4194100.00  59.89   62.46  4.8
RE DISCCART  581340.00  4194100.00  60.84   62.37  4.8
RE DISCCART  581360.00  4194100.00  61.26   61.52  4.8
RE DISCCART  581380.00  4194100.00  59.12   65.95  4.8
RE DISCCART  581400.00  4194100.00  57.40  192.56  4.8
RE DISCCART  581420.00  4194100.00  59.83   66.04  4.8
RE DISCCART  580780.00  4194120.00  76.59  139.65  4.8
RE DISCCART  580800.00  4194120.00  75.75  139.65  4.8
RE DISCCART  580820.00  4194120.00  75.00  139.65  4.8
RE DISCCART  580840.00  4194120.00  74.30  139.65  4.8
RE DISCCART  580860.00  4194120.00  73.53  139.65  4.8
RE DISCCART  580880.00  4194120.00  73.01  139.65  4.8
RE DISCCART  580900.00  4194120.00  73.96   73.96  4.8
RE DISCCART  580920.00  4194120.00  74.01   74.01  4.8
RE DISCCART  580940.00  4194120.00  73.65   73.65  4.8
RE DISCCART  580960.00  4194120.00  72.65   72.65  4.8
RE DISCCART  580980.00  4194120.00  71.29   71.29  4.8
RE DISCCART  581000.00  4194120.00  70.55   70.55  4.8
RE DISCCART  581020.00  4194120.00  69.96   69.96  4.8
RE DISCCART  581040.00  4194120.00  69.46   69.46  4.8
```

```
RE DISCCART  581060.00  4194120.00  68.70   68.70  4.8
RE DISCCART  581080.00  4194120.00  67.93   67.93  4.8
RE DISCCART  581100.00  4194120.00  67.72   67.72  4.8
RE DISCCART  581120.00  4194120.00  67.38   67.38  4.8
RE DISCCART  581140.00  4194120.00  66.93   66.93  4.8
RE DISCCART  581160.00  4194120.00  66.58   66.58  4.8
RE DISCCART  581180.00  4194120.00  66.41   66.41  4.8
RE DISCCART  581200.00  4194120.00  66.08   66.08  4.8
RE DISCCART  581220.00  4194120.00  65.40   65.40  4.8
RE DISCCART  581240.00  4194120.00  64.43   64.43  4.8
RE DISCCART  581260.00  4194120.00  63.62   63.62  4.8
RE DISCCART  581280.00  4194120.00  62.82   62.82  4.8
RE DISCCART  581300.00  4194120.00  62.44   62.44  4.8
RE DISCCART  581320.00  4194120.00  62.37   62.37  4.8
RE DISCCART  581340.00  4194120.00  62.53   62.53  4.8
RE DISCCART  581360.00  4194120.00  62.49   62.49  4.8
RE DISCCART  581380.00  4194120.00  62.15   62.15  4.8
RE DISCCART  581400.00  4194120.00  62.60   65.61  4.8
RE DISCCART  581420.00  4194120.00  63.94   65.95  4.8
RE DISCCART  581440.00  4194120.00  65.00   65.00  4.8
RE DISCCART  580780.00  4194140.00  77.21  139.65  4.8
RE DISCCART  580800.00  4194140.00  76.34  139.65  4.8
RE DISCCART  580820.00  4194140.00  75.43  139.65  4.8
RE DISCCART  580840.00  4194140.00  74.61  139.65  4.8
RE DISCCART  580860.00  4194140.00  73.78  139.65  4.8
RE DISCCART  580880.00  4194140.00  73.38  139.65  4.8
RE DISCCART  580900.00  4194140.00  73.38  139.65  4.8
RE DISCCART  580920.00  4194140.00  73.56   73.56  4.8
RE DISCCART  580940.00  4194140.00  73.38   73.38  4.8
RE DISCCART  580960.00  4194140.00  72.67   72.67  4.8
RE DISCCART  580980.00  4194140.00  71.65   71.65  4.8
RE DISCCART  581000.00  4194140.00  70.95   70.95  4.8
RE DISCCART  581020.00  4194140.00  69.89   69.89  4.8
RE DISCCART  581040.00  4194140.00  69.38   69.38  4.8
RE DISCCART  581060.00  4194140.00  68.83   68.83  4.8
RE DISCCART  581080.00  4194140.00  68.43   68.43  4.8
RE DISCCART  581100.00  4194140.00  68.24   68.24  4.8
RE DISCCART  581120.00  4194140.00  67.86   67.86  4.8
RE DISCCART  581140.00  4194140.00  67.63   67.63  4.8
RE DISCCART  581160.00  4194140.00  67.64   67.64  4.8
RE DISCCART  581180.00  4194140.00  67.33   67.33  4.8
RE DISCCART  581200.00  4194140.00  66.68   66.68  4.8
RE DISCCART  581220.00  4194140.00  65.94   65.94  4.8
RE DISCCART  581240.00  4194140.00  65.18   65.18  4.8
RE DISCCART  581260.00  4194140.00  64.26  192.56  4.8
RE DISCCART  581280.00  4194140.00  63.53  192.56  4.8
RE DISCCART  581300.00  4194140.00  63.27  192.56  4.8
RE DISCCART  581320.00  4194140.00  63.35   63.35  4.8
RE DISCCART  581340.00  4194140.00  63.07   63.07  4.8
RE DISCCART  581360.00  4194140.00  62.79   62.79  4.8
RE DISCCART  581380.00  4194140.00  62.86   62.86  4.8
RE DISCCART  581400.00  4194140.00  62.91   65.47  4.8
RE DISCCART  581420.00  4194140.00  65.40   65.40  4.8
RE DISCCART  581440.00  4194140.00  65.82   65.82  4.8
```

```
RE DISCCART  581460.00  4194140.00  65.28   65.28  4.8
RE DISCCART  580760.00  4194160.00  78.72  139.65  4.8
RE DISCCART  580780.00  4194160.00  77.71  139.65  4.8
RE DISCCART  580800.00  4194160.00  76.71  139.65  4.8
RE DISCCART  580820.00  4194160.00  75.74  139.65  4.8
RE DISCCART  580840.00  4194160.00  74.84  139.65  4.8
RE DISCCART  580860.00  4194160.00  73.98  139.65  4.8
RE DISCCART  580880.00  4194160.00  73.69  139.65  4.8
RE DISCCART  580900.00  4194160.00  73.25  139.65  4.8
RE DISCCART  580920.00  4194160.00  72.77  139.65  4.8
RE DISCCART  580940.00  4194160.00  72.60  139.65  4.8
RE DISCCART  580960.00  4194160.00  72.26   72.26  4.8
RE DISCCART  580980.00  4194160.00  71.72   71.72  4.8
RE DISCCART  581000.00  4194160.00  71.19   71.19  4.8
RE DISCCART  581020.00  4194160.00  70.54   70.54  4.8
RE DISCCART  581040.00  4194160.00  69.72   69.72  4.8
RE DISCCART  581060.00  4194160.00  69.09   69.09  4.8
RE DISCCART  581080.00  4194160.00  68.88   68.88  4.8
RE DISCCART  581100.00  4194160.00  68.58   68.58  4.8
RE DISCCART  581120.00  4194160.00  68.35   68.35  4.8
RE DISCCART  581140.00  4194160.00  68.28   68.28  4.8
RE DISCCART  581160.00  4194160.00  68.21   68.21  4.8
RE DISCCART  581180.00  4194160.00  67.99   67.99  4.8
RE DISCCART  581200.00  4194160.00  67.39   67.39  4.8
RE DISCCART  581220.00  4194160.00  66.53  192.56  4.8
RE DISCCART  581240.00  4194160.00  65.90  192.56  4.8
RE DISCCART  581260.00  4194160.00  65.07  192.56  4.8
RE DISCCART  581280.00  4194160.00  64.36  192.56  4.8
RE DISCCART  581300.00  4194160.00  64.13  192.56  4.8
RE DISCCART  581320.00  4194160.00  64.18  192.56  4.8
RE DISCCART  581340.00  4194160.00  63.62  192.56  4.8
RE DISCCART  581360.00  4194160.00  63.35  192.56  4.8
RE DISCCART  581380.00  4194160.00  63.37  192.56  4.8
RE DISCCART  581400.00  4194160.00  63.91   63.91  4.8
RE DISCCART  581420.00  4194160.00  64.77   64.77  4.8
RE DISCCART  581440.00  4194160.00  65.14   65.14  4.8
RE DISCCART  581460.00  4194160.00  64.78   64.78  4.8
RE DISCCART  580760.00  4194180.00  79.21  139.65  4.8
RE DISCCART  580780.00  4194180.00  78.25  186.03  4.8
RE DISCCART  580800.00  4194180.00  77.21  187.00  4.8
RE DISCCART  580820.00  4194180.00  76.11  187.00  4.8
RE DISCCART  580840.00  4194180.00  75.19  187.00  4.8
RE DISCCART  580860.00  4194180.00  74.58  186.81  4.8
RE DISCCART  580880.00  4194180.00  74.12  139.65  4.8
RE DISCCART  580900.00  4194180.00  73.57  139.65  4.8
RE DISCCART  580920.00  4194180.00  73.03  139.65  4.8
RE DISCCART  580940.00  4194180.00  72.38  139.65  4.8
RE DISCCART  580960.00  4194180.00  71.86  139.65  4.8
RE DISCCART  580980.00  4194180.00  71.62   71.62  4.8
RE DISCCART  581000.00  4194180.00  71.13   71.13  4.8
RE DISCCART  581020.00  4194180.00  70.60   70.60  4.8
RE DISCCART  581040.00  4194180.00  70.10  192.56  4.8
RE DISCCART  581060.00  4194180.00  69.50  192.56  4.8
RE DISCCART  581080.00  4194180.00  69.37  192.56  4.8
```

```
RE DISCCART  581100.00  4194180.00  69.11  192.56  4.8
RE DISCCART  581120.00  4194180.00  69.11  192.56  4.8
RE DISCCART  581140.00  4194180.00  68.80  192.56  4.8
RE DISCCART  581160.00  4194180.00  68.51  192.56  4.8
RE DISCCART  581180.00  4194180.00  68.16  192.56  4.8
RE DISCCART  581200.00  4194180.00  67.69  192.56  4.8
RE DISCCART  581220.00  4194180.00  66.89  192.56  4.8
RE DISCCART  581240.00  4194180.00  66.25  192.56  4.8
RE DISCCART  581260.00  4194180.00  65.66  192.56  4.8
RE DISCCART  581280.00  4194180.00  65.14  192.56  4.8
RE DISCCART  581300.00  4194180.00  64.89  192.56  4.8
RE DISCCART  581320.00  4194180.00  64.63  192.56  4.8
RE DISCCART  581340.00  4194180.00  64.18  192.56  4.8
RE DISCCART  581360.00  4194180.00  63.91  192.56  4.8
RE DISCCART  581380.00  4194180.00  63.87  192.56  4.8
RE DISCCART  581400.00  4194180.00  64.18  192.56  4.8
RE DISCCART  581420.00  4194180.00  64.37  192.56  4.8
RE DISCCART  581440.00  4194180.00  64.58   64.58  4.8
RE DISCCART  581460.00  4194180.00  64.47   64.47  4.8
RE DISCCART  580760.00  4194200.00  79.46  187.00  4.8
RE DISCCART  580780.00  4194200.00  78.45  187.00  4.8
RE DISCCART  580800.00  4194200.00  77.52  187.00  4.8
RE DISCCART  580820.00  4194200.00  76.46  187.00  4.8
RE DISCCART  580840.00  4194200.00  75.65  187.00  4.8
RE DISCCART  580860.00  4194200.00  75.09  187.00  4.8
RE DISCCART  580880.00  4194200.00  74.47  187.00  4.8
RE DISCCART  580900.00  4194200.00  73.73  187.00  4.8
RE DISCCART  580920.00  4194200.00  73.05  187.00  4.8
RE DISCCART  580940.00  4194200.00  72.49  186.03  4.8
RE DISCCART  580960.00  4194200.00  71.84  192.56  4.8
RE DISCCART  580980.00  4194200.00  71.15  192.56  4.8
RE DISCCART  581000.00  4194200.00  71.02  192.56  4.8
RE DISCCART  581020.00  4194200.00  70.63  192.56  4.8
RE DISCCART  581040.00  4194200.00  70.12  192.56  4.8
RE DISCCART  581060.00  4194200.00  69.91  192.56  4.8
RE DISCCART  581080.00  4194200.00  69.82  192.56  4.8
RE DISCCART  581100.00  4194200.00  69.75  192.56  4.8
RE DISCCART  581120.00  4194200.00  69.42  192.56  4.8
RE DISCCART  581140.00  4194200.00  69.04  192.56  4.8
RE DISCCART  581160.00  4194200.00  68.59  192.56  4.8
RE DISCCART  581180.00  4194200.00  68.17  192.56  4.8
RE DISCCART  581200.00  4194200.00  67.80  192.56  4.8
RE DISCCART  581220.00  4194200.00  67.10  192.56  4.8
RE DISCCART  581240.00  4194200.00  66.56  192.56  4.8
RE DISCCART  581260.00  4194200.00  66.10  192.56  4.8
RE DISCCART  581280.00  4194200.00  65.57  192.56  4.8
RE DISCCART  581300.00  4194200.00  65.21  192.56  4.8
RE DISCCART  581320.00  4194200.00  64.74  192.56  4.8
RE DISCCART  581340.00  4194200.00  64.61  192.56  4.8
RE DISCCART  581360.00  4194200.00  64.28  192.56  4.8
RE DISCCART  581380.00  4194200.00  64.02  192.56  4.8
RE DISCCART  581400.00  4194200.00  63.90  192.56  4.8
RE DISCCART  581420.00  4194200.00  63.82  192.56  4.8
RE DISCCART  581440.00  4194200.00  63.92  192.56  4.8
```

```
RE DISCCART  581460.00  4194200.00  63.92  192.56  4.8
RE DISCCART  581480.00  4194200.00  63.94  192.56  4.8
RE DISCCART  580740.00  4194220.00  82.43  187.00  4.8
RE DISCCART  580760.00  4194220.00  79.50  187.00  4.8
RE DISCCART  580780.00  4194220.00  78.68  187.00  4.8
RE DISCCART  580800.00  4194220.00  77.80  187.00  4.8
RE DISCCART  580820.00  4194220.00  76.77  187.00  4.8
RE DISCCART  580840.00  4194220.00  76.02  187.00  4.8
RE DISCCART  580860.00  4194220.00  75.34  187.00  4.8
RE DISCCART  580880.00  4194220.00  74.64  187.00  4.8
RE DISCCART  580900.00  4194220.00  73.86  187.00  4.8
RE DISCCART  580920.00  4194220.00  73.12  192.56  4.8
RE DISCCART  580940.00  4194220.00  72.52  192.56  4.8
RE DISCCART  580960.00  4194220.00  71.77  192.56  4.8
RE DISCCART  580980.00  4194220.00  70.79  192.56  4.8
RE DISCCART  581000.00  4194220.00  70.08  197.26  4.8
RE DISCCART  581020.00  4194220.00  70.07  192.56  4.8
RE DISCCART  581040.00  4194220.00  69.97  192.56  4.8
RE DISCCART  581060.00  4194220.00  69.72  192.56  4.8
RE DISCCART  581080.00  4194220.00  69.82  192.56  4.8
RE DISCCART  581100.00  4194220.00  69.73  192.56  4.8
RE DISCCART  581120.00  4194220.00  69.60  192.56  4.8
RE DISCCART  581140.00  4194220.00  69.23  192.56  4.8
RE DISCCART  581160.00  4194220.00  68.81  192.56  4.8
RE DISCCART  581180.00  4194220.00  68.37  192.56  4.8
RE DISCCART  581200.00  4194220.00  67.92  192.56  4.8
RE DISCCART  581220.00  4194220.00  67.40  192.56  4.8
RE DISCCART  581240.00  4194220.00  66.83  192.56  4.8
RE DISCCART  581260.00  4194220.00  66.37  192.56  4.8
RE DISCCART  581280.00  4194220.00  65.90  192.56  4.8
RE DISCCART  581300.00  4194220.00  65.45  192.56  4.8
RE DISCCART  581320.00  4194220.00  64.83  192.56  4.8
RE DISCCART  581340.00  4194220.00  64.29  192.56  4.8
RE DISCCART  581360.00  4194220.00  64.10  192.56  4.8
RE DISCCART  581380.00  4194220.00  63.81  192.56  4.8
RE DISCCART  581400.00  4194220.00  63.38  192.56  4.8
RE DISCCART  581420.00  4194220.00  63.03  192.56  4.8
RE DISCCART  581440.00  4194220.00  62.89  192.56  4.8
RE DISCCART  581460.00  4194220.00  63.12  192.56  4.8
RE DISCCART  581480.00  4194220.00  62.93  192.56  4.8
RE DISCCART  580740.00  4194240.00  82.61  187.00  4.8
RE DISCCART  580760.00  4194240.00  79.54  187.00  4.8
RE DISCCART  580780.00  4194240.00  78.76  187.00  4.8
RE DISCCART  580800.00  4194240.00  77.89  187.00  4.8
RE DISCCART  580820.00  4194240.00  77.02  187.00  4.8
RE DISCCART  580840.00  4194240.00  76.26  187.00  4.8
RE DISCCART  580860.00  4194240.00  75.50  187.00  4.8
RE DISCCART  580880.00  4194240.00  74.67  192.56  4.8
RE DISCCART  580900.00  4194240.00  73.85  192.56  4.8
RE DISCCART  580920.00  4194240.00  73.22  192.56  4.8
RE DISCCART  580940.00  4194240.00  72.57  197.26  4.8
RE DISCCART  580960.00  4194240.00  71.89  198.99  4.8
RE DISCCART  580980.00  4194240.00  70.71  198.99  4.8
RE DISCCART  581000.00  4194240.00  69.37  198.99  4.8
```

```
RE DISCCART  581020.00  4194240.00  68.66  198.99  4.8
RE DISCCART  581040.00  4194240.00  68.74  198.99  4.8
RE DISCCART  581060.00  4194240.00  68.84  198.99  4.8
RE DISCCART  581080.00  4194240.00  69.12  198.99  4.8
RE DISCCART  581100.00  4194240.00  69.29  198.99  4.8
RE DISCCART  581120.00  4194240.00  69.29  198.99  4.8
RE DISCCART  581140.00  4194240.00  69.16  198.19  4.8
RE DISCCART  581160.00  4194240.00  68.95  198.19  4.8
RE DISCCART  581180.00  4194240.00  68.57  197.26  4.8
RE DISCCART  581200.00  4194240.00  68.12  197.26  4.8
RE DISCCART  581220.00  4194240.00  67.70  197.26  4.8
RE DISCCART  581240.00  4194240.00  67.17  197.26  4.8
RE DISCCART  581260.00  4194240.00  66.66  192.56  4.8
RE DISCCART  581280.00  4194240.00  66.29  192.56  4.8
RE DISCCART  581300.00  4194240.00  65.60  192.56  4.8
RE DISCCART  581320.00  4194240.00  64.69  192.56  4.8
RE DISCCART  581340.00  4194240.00  63.75  197.26  4.8
RE DISCCART  581360.00  4194240.00  63.25  192.56  4.8
RE DISCCART  581380.00  4194240.00  63.24  192.56  4.8
RE DISCCART  581400.00  4194240.00  62.81  192.56  4.8
RE DISCCART  581420.00  4194240.00  62.53  192.56  4.8
RE DISCCART  581440.00  4194240.00  62.30  192.56  4.8
RE DISCCART  581460.00  4194240.00  62.10  192.56  4.8
RE DISCCART  581480.00  4194240.00  61.96  192.56  4.8
RE DISCCART  580740.00  4194260.00  82.67  187.00  4.8
RE DISCCART  580760.00  4194260.00  79.59  187.00  4.8
RE DISCCART  580780.00  4194260.00  78.80  187.00  4.8
RE DISCCART  580800.00  4194260.00  77.99  187.00  4.8
RE DISCCART  580820.00  4194260.00  77.20  187.00  4.8
RE DISCCART  580840.00  4194260.00  76.40  187.00  4.8
RE DISCCART  580860.00  4194260.00  75.60  192.56  4.8
RE DISCCART  580880.00  4194260.00  74.73  198.19  4.8
RE DISCCART  580900.00  4194260.00  73.89  198.99  4.8
RE DISCCART  580920.00  4194260.00  73.12  198.99  4.8
RE DISCCART  580940.00  4194260.00  72.43  198.99  4.8
RE DISCCART  580960.00  4194260.00  71.66  198.99  4.8
RE DISCCART  580980.00  4194260.00  70.50  198.99  4.8
RE DISCCART  581000.00  4194260.00  69.24  198.99  4.8
RE DISCCART  581020.00  4194260.00  68.18  198.99  4.8
RE DISCCART  581040.00  4194260.00  67.90  198.99  4.8
RE DISCCART  581060.00  4194260.00  68.01  198.99  4.8
RE DISCCART  581080.00  4194260.00  68.51  198.99  4.8
RE DISCCART  581100.00  4194260.00  68.37  198.99  4.8
RE DISCCART  581120.00  4194260.00  68.33  198.99  4.8
RE DISCCART  581140.00  4194260.00  68.48  198.99  4.8
RE DISCCART  581160.00  4194260.00  68.67  198.99  4.8
RE DISCCART  581180.00  4194260.00  68.56  198.99  4.8
RE DISCCART  581200.00  4194260.00  68.28  198.99  4.8
RE DISCCART  581220.00  4194260.00  67.94  198.99  4.8
RE DISCCART  581240.00  4194260.00  67.63  198.99  4.8
RE DISCCART  581260.00  4194260.00  67.09  198.99  4.8
RE DISCCART  581280.00  4194260.00  66.53  198.99  4.8
RE DISCCART  581300.00  4194260.00  65.65  198.99  4.8
RE DISCCART  581320.00  4194260.00  64.32  198.99  4.8
```

```
RE DISCCART  581340.00  4194260.00  63.29  198.99  4.8
RE DISCCART  581360.00  4194260.00  62.55  198.99  4.8
RE DISCCART  581380.00  4194260.00  62.22  198.99  4.8
RE DISCCART  581400.00  4194260.00  62.05  198.99  4.8
RE DISCCART  581420.00  4194260.00  61.99  198.19  4.8
RE DISCCART  581440.00  4194260.00  61.95  192.56  4.8
RE DISCCART  581460.00  4194260.00  61.48  192.56  4.8
RE DISCCART  581480.00  4194260.00  60.29  192.56  4.8
RE DISCCART  580740.00  4194280.00  82.65  187.00  4.8
RE DISCCART  580760.00  4194280.00  79.60  187.00  4.8
RE DISCCART  580780.00  4194280.00  78.86  187.00  4.8
RE DISCCART  580800.00  4194280.00  78.05  187.00  4.8
RE DISCCART  580820.00  4194280.00  77.25  192.56  4.8
RE DISCCART  580840.00  4194280.00  76.50  198.99  4.8
RE DISCCART  580860.00  4194280.00  75.70  198.99  4.8
RE DISCCART  580880.00  4194280.00  74.89  198.99  4.8
RE DISCCART  580900.00  4194280.00  74.17  198.99  4.8
RE DISCCART  580920.00  4194280.00  73.39  198.99  4.8
RE DISCCART  580940.00  4194280.00  72.56  198.99  4.8
RE DISCCART  580960.00  4194280.00  71.78  198.99  4.8
RE DISCCART  580980.00  4194280.00  70.46  198.99  4.8
RE DISCCART  581000.00  4194280.00  69.32  198.99  4.8
RE DISCCART  581020.00  4194280.00  68.33  198.99  4.8
RE DISCCART  581040.00  4194280.00  67.90  198.99  4.8
RE DISCCART  581060.00  4194280.00  67.90  198.99  4.8
RE DISCCART  581080.00  4194280.00  68.06  198.99  4.8
RE DISCCART  581100.00  4194280.00  67.99  198.99  4.8
RE DISCCART  581120.00  4194280.00  67.92  198.99  4.8
RE DISCCART  581140.00  4194280.00  68.06  198.99  4.8
RE DISCCART  581160.00  4194280.00  68.35  198.99  4.8
RE DISCCART  581180.00  4194280.00  68.47  198.99  4.8
RE DISCCART  581200.00  4194280.00  68.32  198.99  4.8
RE DISCCART  581220.00  4194280.00  68.13  198.99  4.8
RE DISCCART  581240.00  4194280.00  67.92  198.99  4.8
RE DISCCART  581260.00  4194280.00  67.40  198.99  4.8
RE DISCCART  581280.00  4194280.00  66.31  198.99  4.8
RE DISCCART  581300.00  4194280.00  65.25  198.99  4.8
RE DISCCART  581320.00  4194280.00  63.90  198.99  4.8
RE DISCCART  581340.00  4194280.00  63.04  198.99  4.8
RE DISCCART  581360.00  4194280.00  62.31  198.99  4.8
RE DISCCART  581380.00  4194280.00  61.71  198.99  4.8
RE DISCCART  581400.00  4194280.00  61.48  198.99  4.8
RE DISCCART  581420.00  4194280.00  61.40  198.99  4.8
RE DISCCART  581440.00  4194280.00  61.29  198.99  4.8
RE DISCCART  581460.00  4194280.00  59.77  198.99  4.8
RE DISCCART  581480.00  4194280.00  58.02  198.99  4.8
RE DISCCART  580740.00  4194300.00  82.57  187.00  4.8
RE DISCCART  580760.00  4194300.00  79.61  187.00  4.8
RE DISCCART  580780.00  4194300.00  78.90  192.56  4.8
RE DISCCART  580800.00  4194300.00  78.13  198.99  4.8
RE DISCCART  580820.00  4194300.00  77.35  198.99  4.8
RE DISCCART  580840.00  4194300.00  76.55  198.99  4.8
RE DISCCART  580860.00  4194300.00  75.83  198.99  4.8
RE DISCCART  580880.00  4194300.00  75.10  198.99  4.8
```

```
RE DISCCART  580900.00  4194300.00  74.38  198.99  4.8
RE DISCCART  580920.00  4194300.00  73.55  198.99  4.8
RE DISCCART  580940.00  4194300.00  72.57  198.99  4.8
RE DISCCART  580960.00  4194300.00  71.43  198.99  4.8
RE DISCCART  580980.00  4194300.00  70.37  198.99  4.8
RE DISCCART  581000.00  4194300.00  69.37  198.99  4.8
RE DISCCART  581020.00  4194300.00  68.55  198.99  4.8
RE DISCCART  581040.00  4194300.00  67.88  198.99  4.8
RE DISCCART  581060.00  4194300.00  67.81  198.99  4.8
RE DISCCART  581080.00  4194300.00  67.92  198.99  4.8
RE DISCCART  581100.00  4194300.00  67.90  198.99  4.8
RE DISCCART  581120.00  4194300.00  67.79  198.99  4.8
RE DISCCART  581140.00  4194300.00  67.90  198.99  4.8
RE DISCCART  581160.00  4194300.00  68.03  198.99  4.8
RE DISCCART  581180.00  4194300.00  68.19  198.99  4.8
RE DISCCART  581200.00  4194300.00  68.22  198.99  4.8
RE DISCCART  581220.00  4194300.00  68.13  198.99  4.8
RE DISCCART  581240.00  4194300.00  67.95  198.99  4.8
RE DISCCART  581260.00  4194300.00  67.52  198.99  4.8
RE DISCCART  581280.00  4194300.00  66.01  198.99  4.8
RE DISCCART  581300.00  4194300.00  64.41  198.99  4.8
RE DISCCART  581320.00  4194300.00  63.45  198.99  4.8
RE DISCCART  581340.00  4194300.00  62.73  198.99  4.8
RE DISCCART  581360.00  4194300.00  62.04  198.99  4.8
RE DISCCART  581380.00  4194300.00  61.44  198.99  4.8
RE DISCCART  581400.00  4194300.00  60.76  198.99  4.8
RE DISCCART  581420.00  4194300.00  60.27  198.99  4.8
RE DISCCART  581440.00  4194300.00  59.44  198.99  4.8
RE DISCCART  581460.00  4194300.00  57.96  198.99  4.8
RE DISCCART  581480.00  4194300.00  56.18  198.99  4.8
RE DISCCART  580740.00  4194320.00  83.74  187.00  4.8
RE DISCCART  580760.00  4194320.00  80.10  198.99  4.8
RE DISCCART  580780.00  4194320.00  79.07  198.99  4.8
RE DISCCART  580800.00  4194320.00  78.20  198.99  4.8
RE DISCCART  580820.00  4194320.00  77.37  198.99  4.8
RE DISCCART  580840.00  4194320.00  76.56  198.99  4.8
RE DISCCART  580860.00  4194320.00  75.85  198.99  4.8
RE DISCCART  580880.00  4194320.00  75.17  198.99  4.8
RE DISCCART  580900.00  4194320.00  74.46  198.99  4.8
RE DISCCART  580920.00  4194320.00  73.58  198.99  4.8
RE DISCCART  580940.00  4194320.00  72.41  198.99  4.8
RE DISCCART  580960.00  4194320.00  71.28  198.99  4.8
RE DISCCART  580980.00  4194320.00  70.15  198.99  4.8
RE DISCCART  581000.00  4194320.00  69.29  198.99  4.8
RE DISCCART  581020.00  4194320.00  68.51  198.99  4.8
RE DISCCART  581040.00  4194320.00  67.86  198.99  4.8
RE DISCCART  581060.00  4194320.00  67.65  198.99  4.8
RE DISCCART  581080.00  4194320.00  67.77  198.99  4.8
RE DISCCART  581100.00  4194320.00  67.83  198.99  4.8
RE DISCCART  581120.00  4194320.00  67.61  198.99  4.8
RE DISCCART  581140.00  4194320.00  67.69  198.99  4.8
RE DISCCART  581160.00  4194320.00  67.88  198.99  4.8
RE DISCCART  581180.00  4194320.00  67.87  198.99  4.8
RE DISCCART  581200.00  4194320.00  67.97  198.99  4.8
```

```
RE DISCCART  581220.00  4194320.00  67.97  198.99  4.8
RE DISCCART  581240.00  4194320.00  67.89  198.99  4.8
RE DISCCART  581260.00  4194320.00  67.25  198.99  4.8
RE DISCCART  581280.00  4194320.00  65.39  198.99  4.8
RE DISCCART  581300.00  4194320.00  63.34  198.99  4.8
RE DISCCART  581320.00  4194320.00  62.87  198.99  4.8
RE DISCCART  581340.00  4194320.00  62.20  198.99  4.8
RE DISCCART  581360.00  4194320.00  61.72  198.99  4.8
RE DISCCART  581380.00  4194320.00  61.36  198.99  4.8
RE DISCCART  581400.00  4194320.00  61.03  198.99  4.8
RE DISCCART  581420.00  4194320.00  60.66  198.99  4.8
RE DISCCART  581440.00  4194320.00  59.35  198.99  4.8
RE DISCCART  581460.00  4194320.00  57.80  198.99  4.8
RE DISCCART  581480.00  4194320.00  57.28  198.99  4.8
RE DISCCART  580740.00  4194340.00  85.07  187.00  4.8
RE DISCCART  580760.00  4194340.00  80.64  198.99  4.8
RE DISCCART  580780.00  4194340.00  79.21  198.99  4.8
RE DISCCART  580800.00  4194340.00  78.29  198.99  4.8
RE DISCCART  580820.00  4194340.00  77.39  198.99  4.8
RE DISCCART  580840.00  4194340.00  76.46  198.99  4.8
RE DISCCART  580860.00  4194340.00  75.62  198.99  4.8
RE DISCCART  580880.00  4194340.00  74.95  198.99  4.8
RE DISCCART  580900.00  4194340.00  74.32  198.99  4.8
RE DISCCART  580920.00  4194340.00  73.44  198.99  4.8
RE DISCCART  580940.00  4194340.00  72.26  198.99  4.8
RE DISCCART  580960.00  4194340.00  71.06  198.99  4.8
RE DISCCART  580980.00  4194340.00  69.95  198.99  4.8
RE DISCCART  581000.00  4194340.00  69.00  198.99  4.8
RE DISCCART  581020.00  4194340.00  68.12  198.99  4.8
RE DISCCART  581040.00  4194340.00  67.70  198.99  4.8
RE DISCCART  581060.00  4194340.00  67.41  198.99  4.8
RE DISCCART  581080.00  4194340.00  67.17  198.99  4.8
RE DISCCART  581100.00  4194340.00  66.98  198.99  4.8
RE DISCCART  581120.00  4194340.00  66.93  198.99  4.8
RE DISCCART  581140.00  4194340.00  67.03  198.99  4.8
RE DISCCART  581160.00  4194340.00  67.27  198.99  4.8
RE DISCCART  581180.00  4194340.00  67.47  198.99  4.8
RE DISCCART  581200.00  4194340.00  67.51  198.99  4.8
RE DISCCART  581220.00  4194340.00  67.51  198.99  4.8
RE DISCCART  581240.00  4194340.00  67.28  198.99  4.8
RE DISCCART  581260.00  4194340.00  66.77  198.99  4.8
RE DISCCART  581280.00  4194340.00  64.80  198.99  4.8
RE DISCCART  581300.00  4194340.00  62.41  198.99  4.8
RE DISCCART  581320.00  4194340.00  61.78  198.99  4.8
RE DISCCART  581340.00  4194340.00  61.68  198.99  4.8
RE DISCCART  581360.00  4194340.00  61.55  198.99  4.8
RE DISCCART  581380.00  4194340.00  61.20  198.99  4.8
RE DISCCART  581400.00  4194340.00  60.91  198.99  4.8
RE DISCCART  581420.00  4194340.00  60.11  198.99  4.8
RE DISCCART  581440.00  4194340.00  59.79  198.99  4.8
RE DISCCART  581460.00  4194340.00  59.06  198.99  4.8
RE DISCCART  581480.00  4194340.00  58.69  198.99  4.8
RE DISCCART  580760.00  4194360.00  80.93  198.99  4.8
RE DISCCART  580780.00  4194360.00  79.25  198.99  4.8
```

```
RE DISCCART  580800.00  4194360.00  78.29  198.99  4.8
RE DISCCART  580820.00  4194360.00  77.34  198.99  4.8
RE DISCCART  580840.00  4194360.00  76.37  198.99  4.8
RE DISCCART  580860.00  4194360.00  75.45  198.99  4.8
RE DISCCART  580880.00  4194360.00  74.38  198.99  4.8
RE DISCCART  580900.00  4194360.00  73.73  198.99  4.8
RE DISCCART  580920.00  4194360.00  73.11  198.99  4.8
RE DISCCART  580940.00  4194360.00  72.09  198.99  4.8
RE DISCCART  580960.00  4194360.00  70.87  198.99  4.8
RE DISCCART  580980.00  4194360.00  69.65  198.99  4.8
RE DISCCART  581000.00  4194360.00  68.61  198.99  4.8
RE DISCCART  581020.00  4194360.00  67.83  198.99  4.8
RE DISCCART  581040.00  4194360.00  67.54  198.99  4.8
RE DISCCART  581060.00  4194360.00  67.33  198.99  4.8
RE DISCCART  581080.00  4194360.00  67.08  198.99  4.8
RE DISCCART  581100.00  4194360.00  66.86  198.99  4.8
RE DISCCART  581120.00  4194360.00  66.56  198.99  4.8
RE DISCCART  581140.00  4194360.00  66.51  198.99  4.8
RE DISCCART  581160.00  4194360.00  66.61  198.99  4.8
RE DISCCART  581180.00  4194360.00  66.65  198.99  4.8
RE DISCCART  581200.00  4194360.00  66.60  198.99  4.8
RE DISCCART  581220.00  4194360.00  66.58  198.99  4.8
RE DISCCART  581240.00  4194360.00  66.34  198.99  4.8
RE DISCCART  581260.00  4194360.00  65.66  198.99  4.8
RE DISCCART  581280.00  4194360.00  63.88  198.99  4.8
RE DISCCART  581300.00  4194360.00  62.27  198.99  4.8
RE DISCCART  581320.00  4194360.00  61.94  198.99  4.8
RE DISCCART  581340.00  4194360.00  61.83  198.99  4.8
RE DISCCART  581360.00  4194360.00  61.69  198.99  4.8
RE DISCCART  581380.00  4194360.00  61.12  198.99  4.8
RE DISCCART  581400.00  4194360.00  61.33  198.99  4.8
RE DISCCART  581420.00  4194360.00  61.29  198.99  4.8
RE DISCCART  581440.00  4194360.00  60.83  198.99  4.8
RE DISCCART  581460.00  4194360.00  60.44  198.99  4.8
RE DISCCART  581480.00  4194360.00  59.92  198.99  4.8
RE DISCCART  580760.00  4194380.00  81.11  198.99  4.8
RE DISCCART  580780.00  4194380.00  79.20  198.99  4.8
RE DISCCART  580800.00  4194380.00  78.29  198.99  4.8
RE DISCCART  580820.00  4194380.00  77.35  198.99  4.8
RE DISCCART  580840.00  4194380.00  76.32  198.99  4.8
RE DISCCART  580860.00  4194380.00  75.31  198.99  4.8
RE DISCCART  580880.00  4194380.00  74.29  198.99  4.8
RE DISCCART  580900.00  4194380.00  73.43  198.99  4.8
RE DISCCART  580920.00  4194380.00  72.72  198.99  4.8
RE DISCCART  580940.00  4194380.00  72.03  198.99  4.8
RE DISCCART  580960.00  4194380.00  70.80  198.99  4.8
RE DISCCART  580980.00  4194380.00  69.35  198.99  4.8
RE DISCCART  581000.00  4194380.00  68.20  198.99  4.8
RE DISCCART  581020.00  4194380.00  67.76  198.99  4.8
RE DISCCART  581040.00  4194380.00  67.77  198.99  4.8
RE DISCCART  581060.00  4194380.00  67.79  198.99  4.8
RE DISCCART  581080.00  4194380.00  67.59  198.99  4.8
RE DISCCART  581100.00  4194380.00  67.07  198.99  4.8
RE DISCCART  581120.00  4194380.00  66.79  198.99  4.8
```

```
RE DISCCART  581140.00  4194380.00  66.66  198.99  4.8
RE DISCCART  581160.00  4194380.00  66.47  198.99  4.8
RE DISCCART  581180.00  4194380.00  66.20  198.99  4.8
RE DISCCART  581200.00  4194380.00  66.03  198.99  4.8
RE DISCCART  581220.00  4194380.00  65.85  198.99  4.8
RE DISCCART  581240.00  4194380.00  65.16  198.99  4.8
RE DISCCART  581260.00  4194380.00  64.48  198.99  4.8
RE DISCCART  581280.00  4194380.00  63.59  198.99  4.8
RE DISCCART  581300.00  4194380.00  63.01  198.99  4.8
RE DISCCART  581320.00  4194380.00  62.73  198.99  4.8
RE DISCCART  581340.00  4194380.00  62.37  198.99  4.8
RE DISCCART  581360.00  4194380.00  62.10  198.99  4.8
RE DISCCART  581380.00  4194380.00  61.82  198.99  4.8
RE DISCCART  581400.00  4194380.00  62.01  198.99  4.8
RE DISCCART  581420.00  4194380.00  62.02  198.99  4.8
RE DISCCART  581440.00  4194380.00  61.94  198.99  4.8
RE DISCCART  581460.00  4194380.00  61.53  198.99  4.8
RE DISCCART  581480.00  4194380.00  60.82  198.99  4.8
RE DISCCART  580760.00  4194400.00  81.00  198.99  4.8
RE DISCCART  580780.00  4194400.00  79.19  198.99  4.8
RE DISCCART  580800.00  4194400.00  78.24  198.99  4.8
RE DISCCART  580820.00  4194400.00  77.32  198.99  4.8
RE DISCCART  580840.00  4194400.00  76.23  198.99  4.8
RE DISCCART  580860.00  4194400.00  75.27  198.99  4.8
RE DISCCART  580880.00  4194400.00  74.29  198.99  4.8
RE DISCCART  580900.00  4194400.00  73.35  198.99  4.8
RE DISCCART  580920.00  4194400.00  72.55  198.99  4.8
RE DISCCART  580940.00  4194400.00  71.83  198.99  4.8
RE DISCCART  580960.00  4194400.00  70.71  198.99  4.8
RE DISCCART  580980.00  4194400.00  69.18  198.99  4.8
RE DISCCART  581000.00  4194400.00  68.10  198.99  4.8
RE DISCCART  581020.00  4194400.00  68.01  198.99  4.8
RE DISCCART  581040.00  4194400.00  68.15  198.99  4.8
RE DISCCART  581060.00  4194400.00  68.15  198.99  4.8
RE DISCCART  581080.00  4194400.00  67.80  198.99  4.8
RE DISCCART  581100.00  4194400.00  67.57  198.99  4.8
RE DISCCART  581120.00  4194400.00  67.23  198.99  4.8
RE DISCCART  581140.00  4194400.00  66.82  198.99  4.8
RE DISCCART  581160.00  4194400.00  66.49  198.99  4.8
RE DISCCART  581180.00  4194400.00  66.21  198.99  4.8
RE DISCCART  581200.00  4194400.00  65.77  198.99  4.8
RE DISCCART  581220.00  4194400.00  65.48  198.99  4.8
RE DISCCART  581240.00  4194400.00  64.99  198.99  4.8
RE DISCCART  581260.00  4194400.00  64.51  198.99  4.8
RE DISCCART  581280.00  4194400.00  64.12  198.99  4.8
RE DISCCART  581300.00  4194400.00  63.75  198.99  4.8
RE DISCCART  581320.00  4194400.00  63.39  198.99  4.8
RE DISCCART  581340.00  4194400.00  63.01  198.99  4.8
RE DISCCART  581360.00  4194400.00  62.75  198.99  4.8
RE DISCCART  581380.00  4194400.00  62.63  198.99  4.8
RE DISCCART  581400.00  4194400.00  62.71  198.99  4.8
RE DISCCART  581420.00  4194400.00  62.55  198.99  4.8
RE DISCCART  581440.00  4194400.00  62.33  198.99  4.8
RE DISCCART  581460.00  4194400.00  61.97  198.99  4.8
```

```
RE DISCCART  581480.00  4194400.00  61.31  198.99  4.8
RE DISCCART  580780.00  4194420.00  79.15  198.99  4.8
RE DISCCART  580800.00  4194420.00  78.29  198.99  4.8
RE DISCCART  580820.00  4194420.00  77.49  198.99  4.8
RE DISCCART  580840.00  4194420.00  76.22  198.99  4.8
RE DISCCART  580860.00  4194420.00  75.23  198.99  4.8
RE DISCCART  580880.00  4194420.00  74.16  198.99  4.8
RE DISCCART  580900.00  4194420.00  73.31  198.99  4.8
RE DISCCART  580920.00  4194420.00  72.56  198.99  4.8
RE DISCCART  580940.00  4194420.00  71.79  198.99  4.8
RE DISCCART  580960.00  4194420.00  70.69  198.99  4.8
RE DISCCART  580980.00  4194420.00  69.56  198.99  4.8
RE DISCCART  581000.00  4194420.00  68.91  198.99  4.8
RE DISCCART  581020.00  4194420.00  68.95  198.99  4.8
RE DISCCART  581040.00  4194420.00  68.87  198.99  4.8
RE DISCCART  581060.00  4194420.00  68.42  198.99  4.8
RE DISCCART  581080.00  4194420.00  67.94  198.99  4.8
RE DISCCART  581100.00  4194420.00  67.72  198.99  4.8
RE DISCCART  581120.00  4194420.00  67.43  198.99  4.8
RE DISCCART  581140.00  4194420.00  67.00  198.99  4.8
RE DISCCART  581160.00  4194420.00  66.62  198.99  4.8
RE DISCCART  581180.00  4194420.00  66.12  198.99  4.8
RE DISCCART  581200.00  4194420.00  65.90  198.99  4.8
RE DISCCART  581220.00  4194420.00  65.52  198.99  4.8
RE DISCCART  581240.00  4194420.00  65.01  198.99  4.8
RE DISCCART  581260.00  4194420.00  65.13  198.99  4.8
RE DISCCART  581280.00  4194420.00  64.71  198.99  4.8
RE DISCCART  581300.00  4194420.00  64.40  198.99  4.8
RE DISCCART  581320.00  4194420.00  64.21  198.99  4.8
RE DISCCART  581340.00  4194420.00  63.70  198.99  4.8
RE DISCCART  581360.00  4194420.00  63.54  198.99  4.8
RE DISCCART  581380.00  4194420.00  63.29  198.99  4.8
RE DISCCART  581400.00  4194420.00  63.21  198.99  4.8
RE DISCCART  581420.00  4194420.00  62.97  198.99  4.8
RE DISCCART  581440.00  4194420.00  62.59  198.99  4.8
RE DISCCART  581460.00  4194420.00  62.05  198.99  4.8
RE DISCCART  581480.00  4194420.00  61.40  198.99  4.8
RE DISCCART  580780.00  4194440.00  79.27  198.99  4.8
RE DISCCART  580800.00  4194440.00  78.73  198.99  4.8
RE DISCCART  580820.00  4194440.00  77.75  198.99  4.8
RE DISCCART  580840.00  4194440.00  76.31  198.99  4.8
RE DISCCART  580860.00  4194440.00  75.09  198.99  4.8
RE DISCCART  580880.00  4194440.00  73.97  198.99  4.8
RE DISCCART  580900.00  4194440.00  73.18  198.99  4.8
RE DISCCART  580920.00  4194440.00  72.39  198.99  4.8
RE DISCCART  580940.00  4194440.00  71.76  198.99  4.8
RE DISCCART  580960.00  4194440.00  70.86  198.99  4.8
RE DISCCART  580980.00  4194440.00  70.02  198.99  4.8
RE DISCCART  581000.00  4194440.00  69.69  198.99  4.8
RE DISCCART  581020.00  4194440.00  69.55  198.99  4.8
RE DISCCART  581040.00  4194440.00  69.22  198.99  4.8
RE DISCCART  581060.00  4194440.00  68.77  198.99  4.8
RE DISCCART  581080.00  4194440.00  68.41  198.99  4.8
RE DISCCART  581100.00  4194440.00  67.94  198.99  4.8
```

```
RE DISCCART  581120.00  4194440.00  67.55  198.99  4.8
RE DISCCART  581140.00  4194440.00  67.20  198.99  4.8
RE DISCCART  581160.00  4194440.00  66.80  198.99  4.8
RE DISCCART  581180.00  4194440.00  66.38  198.99  4.8
RE DISCCART  581200.00  4194440.00  66.07  198.99  4.8
RE DISCCART  581220.00  4194440.00  65.56  198.99  4.8
RE DISCCART  581240.00  4194440.00  65.36  198.99  4.8
RE DISCCART  581260.00  4194440.00  65.61  198.99  4.8
RE DISCCART  581280.00  4194440.00  65.68  198.99  4.8
RE DISCCART  581300.00  4194440.00  65.27  198.99  4.8
RE DISCCART  581320.00  4194440.00  64.84  198.99  4.8
RE DISCCART  581340.00  4194440.00  64.43  198.99  4.8
RE DISCCART  581360.00  4194440.00  64.08  198.99  4.8
RE DISCCART  581380.00  4194440.00  63.73  198.99  4.8
RE DISCCART  581400.00  4194440.00  63.46  198.99  4.8
RE DISCCART  581420.00  4194440.00  63.05  198.99  4.8
RE DISCCART  581440.00  4194440.00  62.56  198.99  4.8
RE DISCCART  581460.00  4194440.00  61.90  198.99  4.8
RE DISCCART  581480.00  4194440.00  61.21  198.99  4.8
RE DISCCART  580800.00  4194460.00  79.48  198.99  4.8
RE DISCCART  580820.00  4194460.00  78.12  198.99  4.8
RE DISCCART  580840.00  4194460.00  76.39  198.99  4.8
RE DISCCART  580860.00  4194460.00  75.00  198.99  4.8
RE DISCCART  580880.00  4194460.00  73.80  198.99  4.8
RE DISCCART  580900.00  4194460.00  73.09  198.99  4.8
RE DISCCART  580920.00  4194460.00  72.41  198.99  4.8
RE DISCCART  580940.00  4194460.00  71.64  198.99  4.8
RE DISCCART  580960.00  4194460.00  70.89  198.99  4.8
RE DISCCART  580980.00  4194460.00  70.13  198.99  4.8
RE DISCCART  581000.00  4194460.00  69.80  198.99  4.8
RE DISCCART  581020.00  4194460.00  69.53  198.99  4.8
RE DISCCART  581040.00  4194460.00  69.34  198.99  4.8
RE DISCCART  581060.00  4194460.00  69.09  198.99  4.8
RE DISCCART  581080.00  4194460.00  68.64  198.99  4.8
RE DISCCART  581100.00  4194460.00  68.16  198.99  4.8
RE DISCCART  581120.00  4194460.00  67.77  198.99  4.8
RE DISCCART  581140.00  4194460.00  67.34  198.99  4.8
RE DISCCART  581160.00  4194460.00  66.92  198.99  4.8
RE DISCCART  581180.00  4194460.00  66.54  198.99  4.8
RE DISCCART  581200.00  4194460.00  66.14  198.99  4.8
RE DISCCART  581220.00  4194460.00  66.02  198.99  4.8
RE DISCCART  581240.00  4194460.00  66.06  198.99  4.8
RE DISCCART  581260.00  4194460.00  66.45  198.99  4.8
RE DISCCART  581280.00  4194460.00  66.42  198.99  4.8
RE DISCCART  581300.00  4194460.00  66.03  198.99  4.8
RE DISCCART  581320.00  4194460.00  65.68  198.99  4.8
RE DISCCART  581340.00  4194460.00  65.28  198.99  4.8
RE DISCCART  581360.00  4194460.00  64.69  198.99  4.8
RE DISCCART  581380.00  4194460.00  64.03  198.99  4.8
RE DISCCART  581400.00  4194460.00  63.52  198.99  4.8
RE DISCCART  581420.00  4194460.00  62.97  198.99  4.8
RE DISCCART  581440.00  4194460.00  62.38  198.99  4.8
RE DISCCART  581460.00  4194460.00  61.67  198.99  4.8
RE DISCCART  581480.00  4194460.00  61.07  198.99  4.8
```

```
RE DISCCART  580800.00  4194480.00  79.78  198.99  4.8
RE DISCCART  580820.00  4194480.00  78.34  198.99  4.8
RE DISCCART  580840.00  4194480.00  76.65  198.99  4.8
RE DISCCART  580860.00  4194480.00  75.07  198.99  4.8
RE DISCCART  580880.00  4194480.00  73.75  198.99  4.8
RE DISCCART  580900.00  4194480.00  73.03  198.99  4.8
RE DISCCART  580920.00  4194480.00  72.29  198.99  4.8
RE DISCCART  580940.00  4194480.00  71.63  198.99  4.8
RE DISCCART  580960.00  4194480.00  70.67  198.99  4.8
RE DISCCART  580980.00  4194480.00  69.79  198.99  4.8
RE DISCCART  581000.00  4194480.00  69.35  198.99  4.8
RE DISCCART  581020.00  4194480.00  69.04  198.99  4.8
RE DISCCART  581040.00  4194480.00  68.88  198.99  4.8
RE DISCCART  581060.00  4194480.00  68.72  198.99  4.8
RE DISCCART  581080.00  4194480.00  68.49  198.99  4.8
RE DISCCART  581100.00  4194480.00  68.14  198.99  4.8
RE DISCCART  581120.00  4194480.00  67.78  198.99  4.8
RE DISCCART  581140.00  4194480.00  67.32  198.99  4.8
RE DISCCART  581160.00  4194480.00  66.93  198.99  4.8
RE DISCCART  581180.00  4194480.00  66.59  198.99  4.8
RE DISCCART  581200.00  4194480.00  66.51  198.99  4.8
RE DISCCART  581220.00  4194480.00  66.60  198.99  4.8
RE DISCCART  581240.00  4194480.00  66.94  198.99  4.8
RE DISCCART  581260.00  4194480.00  67.28  198.99  4.8
RE DISCCART  581280.00  4194480.00  67.11  198.99  4.8
RE DISCCART  581300.00  4194480.00  66.85  198.99  4.8
RE DISCCART  581320.00  4194480.00  66.44  198.99  4.8
RE DISCCART  581340.00  4194480.00  66.05  198.99  4.8
RE DISCCART  581360.00  4194480.00  65.41  198.99  4.8
RE DISCCART  581380.00  4194480.00  64.43  198.99  4.8
RE DISCCART  581400.00  4194480.00  63.58  198.99  4.8
RE DISCCART  581420.00  4194480.00  62.88  198.99  4.8
RE DISCCART  581440.00  4194480.00  62.19  198.99  4.8
RE DISCCART  581460.00  4194480.00  61.56  198.99  4.8
RE DISCCART  580800.00  4194500.00  80.26  198.99  4.8
RE DISCCART  580820.00  4194500.00  78.80  198.99  4.8
RE DISCCART  580840.00  4194500.00  77.05  198.99  4.8
RE DISCCART  580860.00  4194500.00  75.16  198.99  4.8
RE DISCCART  580880.00  4194500.00  73.77  198.99  4.8
RE DISCCART  580900.00  4194500.00  73.10  198.99  4.8
RE DISCCART  580920.00  4194500.00  72.38  198.99  4.8
RE DISCCART  580940.00  4194500.00  71.55  198.99  4.8
RE DISCCART  580960.00  4194500.00  70.34  198.99  4.8
RE DISCCART  580980.00  4194500.00  69.23  198.99  4.8
RE DISCCART  581000.00  4194500.00  68.68  198.99  4.8
RE DISCCART  581020.00  4194500.00  68.33  198.99  4.8
RE DISCCART  581040.00  4194500.00  68.11  198.99  4.8
RE DISCCART  581060.00  4194500.00  68.01  198.99  4.8
RE DISCCART  581080.00  4194500.00  67.86  198.99  4.8
RE DISCCART  581100.00  4194500.00  67.84  198.99  4.8
RE DISCCART  581120.00  4194500.00  67.68  198.99  4.8
RE DISCCART  581140.00  4194500.00  67.24  198.99  4.8
RE DISCCART  581160.00  4194500.00  67.01  198.99  4.8
RE DISCCART  581180.00  4194500.00  67.03  198.99  4.8
```

```
RE DISCCART  581200.00  4194500.00  66.99  198.99  4.8
RE DISCCART  581220.00  4194500.00  67.34  198.99  4.8
RE DISCCART  581240.00  4194500.00  67.99  198.99  4.8
RE DISCCART  581260.00  4194500.00  68.01  198.99  4.8
RE DISCCART  581280.00  4194500.00  67.81  198.99  4.8
RE DISCCART  581300.00  4194500.00  67.54  198.99  4.8
RE DISCCART  581320.00  4194500.00  67.20  198.99  4.8
RE DISCCART  581340.00  4194500.00  66.63  198.99  4.8
RE DISCCART  581360.00  4194500.00  65.82  198.99  4.8
RE DISCCART  581380.00  4194500.00  64.85  198.99  4.8
RE DISCCART  581400.00  4194500.00  63.97  198.99  4.8
RE DISCCART  581420.00  4194500.00  63.09  198.99  4.8
RE DISCCART  581440.00  4194500.00  62.21  198.99  4.8
RE DISCCART  581460.00  4194500.00  61.53  198.99  4.8
RE DISCCART  580800.00  4194520.00  82.10  198.99  4.8
RE DISCCART  580820.00  4194520.00  79.49  198.99  4.8
RE DISCCART  580840.00  4194520.00  77.44  198.99  4.8
RE DISCCART  580860.00  4194520.00  75.28  198.99  4.8
RE DISCCART  580880.00  4194520.00  73.73  198.99  4.8
RE DISCCART  580900.00  4194520.00  72.93  198.99  4.8
RE DISCCART  580920.00  4194520.00  72.22  198.99  4.8
RE DISCCART  580940.00  4194520.00  71.56  198.99  4.8
RE DISCCART  580960.00  4194520.00  70.28  198.99  4.8
RE DISCCART  580980.00  4194520.00  68.77  198.99  4.8
RE DISCCART  581000.00  4194520.00  67.94  198.99  4.8
RE DISCCART  581020.00  4194520.00  67.77  198.99  4.8
RE DISCCART  581040.00  4194520.00  67.76  198.99  4.8
RE DISCCART  581060.00  4194520.00  67.75  198.99  4.8
RE DISCCART  581080.00  4194520.00  67.92  198.99  4.8
RE DISCCART  581100.00  4194520.00  67.79  198.99  4.8
RE DISCCART  581120.00  4194520.00  67.63  198.99  4.8
RE DISCCART  581140.00  4194520.00  67.57  198.99  4.8
RE DISCCART  581160.00  4194520.00  67.59  198.99  4.8
RE DISCCART  581180.00  4194520.00  67.49  198.99  4.8
RE DISCCART  581200.00  4194520.00  67.40  198.99  4.8
RE DISCCART  581220.00  4194520.00  67.70  198.99  4.8
RE DISCCART  581240.00  4194520.00  68.29  198.99  4.8
RE DISCCART  581260.00  4194520.00  68.81  198.99  4.8
RE DISCCART  581280.00  4194520.00  68.57  198.99  4.8
RE DISCCART  581300.00  4194520.00  68.35  198.99  4.8
RE DISCCART  581320.00  4194520.00  67.85  198.99  4.8
RE DISCCART  581340.00  4194520.00  67.05  198.99  4.8
RE DISCCART  581360.00  4194520.00  66.15  198.99  4.8
RE DISCCART  581380.00  4194520.00  65.16  198.99  4.8
RE DISCCART  581400.00  4194520.00  64.33  198.99  4.8
RE DISCCART  581420.00  4194520.00  63.45  198.99  4.8
RE DISCCART  581440.00  4194520.00  62.59  198.99  4.8
RE DISCCART  581460.00  4194520.00  61.94  198.99  4.8
RE DISCCART  580800.00  4194540.00  84.73  198.99  4.8
RE DISCCART  580820.00  4194540.00  80.20  198.99  4.8
RE DISCCART  580840.00  4194540.00  77.69  198.99  4.8
RE DISCCART  580860.00  4194540.00  75.40  198.99  4.8
RE DISCCART  580880.00  4194540.00  73.73  198.99  4.8
RE DISCCART  580900.00  4194540.00  72.99  198.99  4.8
```

```
RE DISCCART  580920.00  4194540.00  72.31  198.99  4.8
RE DISCCART  580940.00  4194540.00  71.70  198.99  4.8
RE DISCCART  580960.00  4194540.00  70.48  198.99  4.8
RE DISCCART  580980.00  4194540.00  68.84  198.99  4.8
RE DISCCART  581000.00  4194540.00  68.09  198.99  4.8
RE DISCCART  581020.00  4194540.00  67.73  198.99  4.8
RE DISCCART  581040.00  4194540.00  67.75  198.99  4.8
RE DISCCART  581060.00  4194540.00  68.35  198.99  4.8
RE DISCCART  581080.00  4194540.00  68.69  198.99  4.8
RE DISCCART  581100.00  4194540.00  68.32  198.99  4.8
RE DISCCART  581120.00  4194540.00  68.23  198.99  4.8
RE DISCCART  581140.00  4194540.00  68.31  198.99  4.8
RE DISCCART  581160.00  4194540.00  68.24  198.99  4.8
RE DISCCART  581180.00  4194540.00  67.96  198.99  4.8
RE DISCCART  581200.00  4194540.00  67.95  198.99  4.8
RE DISCCART  581220.00  4194540.00  67.92  198.99  4.8
RE DISCCART  581240.00  4194540.00  68.75  198.99  4.8
RE DISCCART  581260.00  4194540.00  69.61  198.99  4.8
RE DISCCART  581280.00  4194540.00  69.38  198.99  4.8
RE DISCCART  581300.00  4194540.00  69.00  198.99  4.8
RE DISCCART  581320.00  4194540.00  68.11  198.99  4.8
RE DISCCART  581340.00  4194540.00  67.25  198.99  4.8
RE DISCCART  581360.00  4194540.00  66.37  198.99  4.8
RE DISCCART  581380.00  4194540.00  65.56  198.99  4.8
RE DISCCART  581400.00  4194540.00  64.72  198.99  4.8
RE DISCCART  581420.00  4194540.00  63.82  198.99  4.8
RE DISCCART  581440.00  4194540.00  63.12  198.99  4.8
RE DISCCART  581460.00  4194540.00  62.56  198.99  4.8
RE DISCCART  580800.00  4194560.00  86.98  198.99  4.8
RE DISCCART  580820.00  4194560.00  80.61  198.99  4.8
RE DISCCART  580840.00  4194560.00  77.86  198.99  4.8
RE DISCCART  580860.00  4194560.00  75.47  198.99  4.8
RE DISCCART  580880.00  4194560.00  73.79  198.99  4.8
RE DISCCART  580900.00  4194560.00  73.30  198.99  4.8
RE DISCCART  580920.00  4194560.00  72.73  198.99  4.8
RE DISCCART  580940.00  4194560.00  72.05  198.99  4.8
RE DISCCART  580960.00  4194560.00  70.84  198.99  4.8
RE DISCCART  580980.00  4194560.00  69.70  198.99  4.8
RE DISCCART  581000.00  4194560.00  68.98  198.99  4.8
RE DISCCART  581020.00  4194560.00  68.37  198.99  4.8
RE DISCCART  581040.00  4194560.00  68.32  198.99  4.8
RE DISCCART  581060.00  4194560.00  68.99  198.99  4.8
RE DISCCART  581080.00  4194560.00  69.40  198.99  4.8
RE DISCCART  581100.00  4194560.00  69.35  198.99  4.8
RE DISCCART  581120.00  4194560.00  69.33  198.99  4.8
RE DISCCART  581140.00  4194560.00  69.31  198.99  4.8
RE DISCCART  581160.00  4194560.00  69.23  198.99  4.8
RE DISCCART  581180.00  4194560.00  69.13  198.99  4.8
RE DISCCART  581200.00  4194560.00  69.11  198.99  4.8
RE DISCCART  581220.00  4194560.00  69.22  198.99  4.8
RE DISCCART  581240.00  4194560.00  69.60  198.99  4.8
RE DISCCART  581260.00  4194560.00  70.30  198.99  4.8
RE DISCCART  581280.00  4194560.00  69.84  198.99  4.8
RE DISCCART  581300.00  4194560.00  69.13  198.99  4.8
```

```
RE DISCCART  581320.00  4194560.00  68.09  198.99  4.8
RE DISCCART  581340.00  4194560.00  67.17  198.99  4.8
RE DISCCART  581360.00  4194560.00  66.45  198.99  4.8
RE DISCCART  581380.00  4194560.00  65.90  198.99  4.8
RE DISCCART  581400.00  4194560.00  65.17  198.99  4.8
RE DISCCART  581420.00  4194560.00  64.26  198.99  4.8
RE DISCCART  581440.00  4194560.00  63.51  198.99  4.8
RE DISCCART  581460.00  4194560.00  62.47  198.99  4.8
RE DISCCART  580820.00  4194580.00  80.62  198.99  4.8
RE DISCCART  580840.00  4194580.00  77.97  198.99  4.8
RE DISCCART  580860.00  4194580.00  75.53  198.99  4.8
RE DISCCART  580880.00  4194580.00  73.71  198.99  4.8
RE DISCCART  580900.00  4194580.00  73.09  198.99  4.8
RE DISCCART  580920.00  4194580.00  72.75  198.99  4.8
RE DISCCART  580940.00  4194580.00  72.40  198.99  4.8
RE DISCCART  580960.00  4194580.00  71.70  198.99  4.8
RE DISCCART  580980.00  4194580.00  70.74  198.99  4.8
RE DISCCART  581000.00  4194580.00  69.90  198.99  4.8
RE DISCCART  581020.00  4194580.00  69.61  198.99  4.8
RE DISCCART  581040.00  4194580.00  69.62  198.99  4.8
RE DISCCART  581060.00  4194580.00  69.90  198.99  4.8
RE DISCCART  581080.00  4194580.00  70.18  198.99  4.8
RE DISCCART  581100.00  4194580.00  70.29  198.99  4.8
RE DISCCART  581120.00  4194580.00  70.30  198.99  4.8
RE DISCCART  581140.00  4194580.00  70.32  198.99  4.8
RE DISCCART  581160.00  4194580.00  70.40  198.99  4.8
RE DISCCART  581180.00  4194580.00  70.41  198.99  4.8
RE DISCCART  581200.00  4194580.00  70.55  198.99  4.8
RE DISCCART  581220.00  4194580.00  70.80  198.99  4.8
RE DISCCART  581240.00  4194580.00  71.07  198.99  4.8
RE DISCCART  581260.00  4194580.00  71.15  198.99  4.8
RE DISCCART  581280.00  4194580.00  70.66  198.99  4.8
RE DISCCART  581300.00  4194580.00  69.46  198.99  4.8
RE DISCCART  581320.00  4194580.00  68.08  198.99  4.8
RE DISCCART  581340.00  4194580.00  67.27  198.99  4.8
RE DISCCART  581360.00  4194580.00  66.95  198.99  4.8
RE DISCCART  581380.00  4194580.00  66.45  198.99  4.8
RE DISCCART  581400.00  4194580.00  65.80  198.99  4.8
RE DISCCART  581420.00  4194580.00  64.80  198.99  4.8
RE DISCCART  581440.00  4194580.00  63.77  198.99  4.8
RE DISCCART  581460.00  4194580.00  62.67  198.99  4.8
RE DISCCART  580820.00  4194600.00  80.41  198.99  4.8
RE DISCCART  580840.00  4194600.00  77.99  198.99  4.8
RE DISCCART  580860.00  4194600.00  75.72  198.99  4.8
RE DISCCART  580880.00  4194600.00  73.82  198.99  4.8
RE DISCCART  580900.00  4194600.00  73.52  198.99  4.8
RE DISCCART  580920.00  4194600.00  73.29  198.99  4.8
RE DISCCART  580940.00  4194600.00  73.10  198.99  4.8
RE DISCCART  580960.00  4194600.00  72.40  198.99  4.8
RE DISCCART  580980.00  4194600.00  71.76  198.99  4.8
RE DISCCART  581000.00  4194600.00  71.04  198.99  4.8
RE DISCCART  581020.00  4194600.00  70.91  198.99  4.8
RE DISCCART  581040.00  4194600.00  70.91  198.99  4.8
RE DISCCART  581060.00  4194600.00  70.98  198.99  4.8
```

```
RE DISCCART  581080.00  4194600.00  71.09  198.99  4.8
RE DISCCART  581100.00  4194600.00  71.24  198.99  4.8
RE DISCCART  581120.00  4194600.00  71.36  198.99  4.8
RE DISCCART  581140.00  4194600.00  71.48  198.99  4.8
RE DISCCART  581160.00  4194600.00  71.62  198.99  4.8
RE DISCCART  581180.00  4194600.00  71.79  198.99  4.8
RE DISCCART  581200.00  4194600.00  71.99  198.99  4.8
RE DISCCART  581220.00  4194600.00  72.19  198.99  4.8
RE DISCCART  581240.00  4194600.00  72.54  198.99  4.8
RE DISCCART  581260.00  4194600.00  72.59  198.99  4.8
RE DISCCART  581280.00  4194600.00  71.97  198.99  4.8
RE DISCCART  581300.00  4194600.00  70.50  198.99  4.8
RE DISCCART  581320.00  4194600.00  68.50  198.99  4.8
RE DISCCART  581340.00  4194600.00  67.93  198.99  4.8
RE DISCCART  581360.00  4194600.00  67.76  198.99  4.8
RE DISCCART  581380.00  4194600.00  67.12  198.99  4.8
RE DISCCART  581400.00  4194600.00  66.40  198.99  4.8
RE DISCCART  581420.00  4194600.00  65.39  198.99  4.8
RE DISCCART  581440.00  4194600.00  64.02  198.99  4.8
RE DISCCART  580820.00  4194620.00  80.25  198.99  4.8
RE DISCCART  580840.00  4194620.00  78.31  198.99  4.8
RE DISCCART  580860.00  4194620.00  76.29  198.99  4.8
RE DISCCART  580880.00  4194620.00  74.94  198.99  4.8
RE DISCCART  580900.00  4194620.00  74.53  198.99  4.8
RE DISCCART  580920.00  4194620.00  74.32  198.99  4.8
RE DISCCART  580940.00  4194620.00  73.82  198.99  4.8
RE DISCCART  580960.00  4194620.00  72.87  198.99  4.8
RE DISCCART  580980.00  4194620.00  72.46  198.99  4.8
RE DISCCART  581000.00  4194620.00  71.88  198.99  4.8
RE DISCCART  581020.00  4194620.00  71.82  198.99  4.8
RE DISCCART  581040.00  4194620.00  71.92  198.99  4.8
RE DISCCART  581060.00  4194620.00  71.96  198.99  4.8
RE DISCCART  581080.00  4194620.00  72.01  198.99  4.8
RE DISCCART  581100.00  4194620.00  72.14  198.99  4.8
RE DISCCART  581120.00  4194620.00  72.31  198.99  4.8
RE DISCCART  581140.00  4194620.00  72.49  198.99  4.8
RE DISCCART  581160.00  4194620.00  72.71  198.99  4.8
RE DISCCART  581180.00  4194620.00  72.93  198.99  4.8
RE DISCCART  581200.00  4194620.00  73.19  198.99  4.8
RE DISCCART  581220.00  4194620.00  73.45  198.99  4.8
RE DISCCART  581240.00  4194620.00  73.78  198.99  4.8
RE DISCCART  581260.00  4194620.00  73.96  198.99  4.8
RE DISCCART  581280.00  4194620.00  73.15  198.99  4.8
RE DISCCART  581300.00  4194620.00  72.35  198.99  4.8
RE DISCCART  581320.00  4194620.00  70.95  198.99  4.8
RE DISCCART  581340.00  4194620.00  69.87  198.99  4.8
RE DISCCART  581360.00  4194620.00  68.91  198.99  4.8
RE DISCCART  581380.00  4194620.00  67.70  198.99  4.8
RE DISCCART  581400.00  4194620.00  67.12  198.99  4.8
RE DISCCART  581420.00  4194620.00  66.10  198.99  4.8
RE DISCCART  581440.00  4194620.00  64.51  198.99  4.8
RE DISCCART  580840.00  4194640.00  78.80  198.99  4.8
RE DISCCART  580860.00  4194640.00  77.53  198.99  4.8
RE DISCCART  580880.00  4194640.00  76.32  198.99  4.8
```

```
RE DISCCART  580900.00  4194640.00  75.68  198.99  4.8
RE DISCCART  580920.00  4194640.00  75.22  198.99  4.8
RE DISCCART  580940.00  4194640.00  74.05  198.99  4.8
RE DISCCART  580960.00  4194640.00  73.31  198.99  4.8
RE DISCCART  580980.00  4194640.00  72.93  198.99  4.8
RE DISCCART  581000.00  4194640.00  72.75  198.99  4.8
RE DISCCART  581020.00  4194640.00  72.89  198.99  4.8
RE DISCCART  581040.00  4194640.00  72.97  198.99  4.8
RE DISCCART  581060.00  4194640.00  73.06  198.99  4.8
RE DISCCART  581080.00  4194640.00  72.98  198.99  4.8
RE DISCCART  581100.00  4194640.00  72.99  198.99  4.8
RE DISCCART  581120.00  4194640.00  73.23  198.99  4.8
RE DISCCART  581140.00  4194640.00  73.48  198.99  4.8
RE DISCCART  581160.00  4194640.00  73.87  198.99  4.8
RE DISCCART  581180.00  4194640.00  74.21  198.99  4.8
RE DISCCART  581200.00  4194640.00  74.50  198.99  4.8
RE DISCCART  581220.00  4194640.00  74.69  198.99  4.8
RE DISCCART  581240.00  4194640.00  74.96  198.99  4.8
RE DISCCART  581260.00  4194640.00  74.78  198.99  4.8
RE DISCCART  581280.00  4194640.00  74.32  198.99  4.8
RE DISCCART  581300.00  4194640.00  73.99  198.99  4.8
RE DISCCART  581320.00  4194640.00  73.31  198.99  4.8
RE DISCCART  581340.00  4194640.00  72.49  198.99  4.8
RE DISCCART  581360.00  4194640.00  70.25  198.99  4.8
RE DISCCART  581380.00  4194640.00  68.89  198.99  4.8
RE DISCCART  581400.00  4194640.00  67.67  198.99  4.8
RE DISCCART  581420.00  4194640.00  67.15  198.99  4.8
RE DISCCART  580840.00  4194660.00  79.63  198.99  4.8
RE DISCCART  580860.00  4194660.00  78.51  198.99  4.8
RE DISCCART  580880.00  4194660.00  77.49  198.99  4.8
RE DISCCART  580900.00  4194660.00  76.59  198.99  4.8
RE DISCCART  580920.00  4194660.00  75.76  198.99  4.8
RE DISCCART  580940.00  4194660.00  74.75  198.99  4.8
RE DISCCART  580960.00  4194660.00  74.01  198.99  4.8
RE DISCCART  580980.00  4194660.00  73.64  198.99  4.8
RE DISCCART  581000.00  4194660.00  73.86  198.99  4.8
RE DISCCART  581020.00  4194660.00  74.20  198.99  4.8
RE DISCCART  581040.00  4194660.00  74.48  198.99  4.8
RE DISCCART  581060.00  4194660.00  74.56  198.99  4.8
RE DISCCART  581080.00  4194660.00  74.39  198.99  4.8
RE DISCCART  581100.00  4194660.00  74.50  198.99  4.8
RE DISCCART  581120.00  4194660.00  75.45  198.99  4.8
RE DISCCART  581140.00  4194660.00  76.83  198.99  4.8
RE DISCCART  581160.00  4194660.00  77.77  198.99  4.8
RE DISCCART  581180.00  4194660.00  76.46  198.99  4.8
RE DISCCART  581200.00  4194660.00  75.85  198.99  4.8
RE DISCCART  581220.00  4194660.00  75.79  198.99  4.8
RE DISCCART  581240.00  4194660.00  75.81  198.99  4.8
RE DISCCART  581260.00  4194660.00  75.55  198.99  4.8
RE DISCCART  581280.00  4194660.00  75.18  198.99  4.8
RE DISCCART  581300.00  4194660.00  74.66  198.99  4.8
RE DISCCART  581320.00  4194660.00  74.30  198.99  4.8
RE DISCCART  581340.00  4194660.00  73.57  198.99  4.8
RE DISCCART  581360.00  4194660.00  71.52  198.99  4.8
```

```
RE DISCCART  581380.00  4194660.00  69.60  198.99  4.8
RE DISCCART  581400.00  4194660.00  68.68  198.99  4.8
RE DISCCART  581420.00  4194660.00  67.80  198.99  4.8
RE DISCCART  580860.00  4194680.00  79.32  198.99  4.8
RE DISCCART  580880.00  4194680.00  78.13  198.99  4.8
RE DISCCART  580900.00  4194680.00  77.02  198.99  4.8
RE DISCCART  580920.00  4194680.00  76.55  198.99  4.8
RE DISCCART  580940.00  4194680.00  76.06  198.99  4.8
RE DISCCART  580960.00  4194680.00  75.88  198.99  4.8
RE DISCCART  580980.00  4194680.00  75.93  198.99  4.8
RE DISCCART  581000.00  4194680.00  76.24  198.99  4.8
RE DISCCART  581020.00  4194680.00  77.08  198.99  4.8
RE DISCCART  581040.00  4194680.00  77.67  198.99  4.8
RE DISCCART  581060.00  4194680.00  77.79  198.99  4.8
RE DISCCART  581080.00  4194680.00  77.46  198.99  4.8
RE DISCCART  581100.00  4194680.00  78.28  198.99  4.8
RE DISCCART  581120.00  4194680.00  79.43  198.99  4.8
RE DISCCART  581140.00  4194680.00  80.44  198.99  4.8
RE DISCCART  581160.00  4194680.00  80.24  198.99  4.8
RE DISCCART  581180.00  4194680.00  78.67  198.99  4.8
RE DISCCART  581200.00  4194680.00  77.57  198.99  4.8
RE DISCCART  581220.00  4194680.00  76.97  198.99  4.8
RE DISCCART  581240.00  4194680.00  76.66  198.99  4.8
RE DISCCART  581260.00  4194680.00  75.61  198.99  4.8
RE DISCCART  581280.00  4194680.00  74.49  198.99  4.8
RE DISCCART  581300.00  4194680.00  74.30  198.99  4.8
RE DISCCART  581320.00  4194680.00  74.22  198.99  4.8
RE DISCCART  581340.00  4194680.00  73.66  198.99  4.8
RE DISCCART  581360.00  4194680.00  71.98  198.99  4.8
RE DISCCART  581380.00  4194680.00  70.40  198.99  4.8
RE DISCCART  581400.00  4194680.00  69.24  198.99  4.8
RE DISCCART  580880.00  4194700.00  78.40  198.99  4.8
RE DISCCART  580900.00  4194700.00  77.58  198.99  4.8
RE DISCCART  580920.00  4194700.00  77.60  198.99  4.8
RE DISCCART  580940.00  4194700.00  78.06  198.99  4.8
RE DISCCART  580960.00  4194700.00  78.36  198.99  4.8
RE DISCCART  580980.00  4194700.00  78.77  198.99  4.8
RE DISCCART  581000.00  4194700.00  79.29  198.99  4.8
RE DISCCART  581020.00  4194700.00  79.56  198.99  4.8
RE DISCCART  581040.00  4194700.00  80.54  198.99  4.8
RE DISCCART  581060.00  4194700.00  80.35  198.99  4.8
RE DISCCART  581080.00  4194700.00  80.12  198.99  4.8
RE DISCCART  581100.00  4194700.00  80.82  198.99  4.8
RE DISCCART  581120.00  4194700.00  81.37  198.99  4.8
RE DISCCART  581140.00  4194700.00  81.63  198.99  4.8
RE DISCCART  581160.00  4194700.00  80.79  198.99  4.8
RE DISCCART  581180.00  4194700.00  79.39  198.99  4.8
RE DISCCART  581200.00  4194700.00  78.26  198.99  4.8
RE DISCCART  581220.00  4194700.00  77.58  198.99  4.8
RE DISCCART  581240.00  4194700.00  76.57  198.99  4.8
RE DISCCART  581260.00  4194700.00  74.66  198.99  4.8
RE DISCCART  581280.00  4194700.00  73.84  198.99  4.8
RE DISCCART  581300.00  4194700.00  73.80  198.99  4.8
RE DISCCART  581320.00  4194700.00  73.62  198.99  4.8
```

```
RE DISCCART  581340.00  4194700.00  73.04  198.99  4.8
RE DISCCART  581360.00  4194700.00  71.97  198.99  4.8
RE DISCCART  581380.00  4194700.00  70.62  198.99  4.8
RE DISCCART  580900.00  4194720.00  78.38  233.85  4.8
RE DISCCART  580920.00  4194720.00  78.75  198.99  4.8
RE DISCCART  580940.00  4194720.00  79.58  198.99  4.8
RE DISCCART  580960.00  4194720.00  81.32  198.99  4.8
RE DISCCART  580980.00  4194720.00  83.24  198.99  4.8
RE DISCCART  581000.00  4194720.00  82.05  198.99  4.8
RE DISCCART  581020.00  4194720.00  80.08  198.99  4.8
RE DISCCART  581040.00  4194720.00  81.60  198.99  4.8
RE DISCCART  581060.00  4194720.00  82.21  198.99  4.8
RE DISCCART  581080.00  4194720.00  82.26  198.99  4.8
RE DISCCART  581100.00  4194720.00  82.55  198.99  4.8
RE DISCCART  581120.00  4194720.00  82.81  198.99  4.8
RE DISCCART  581140.00  4194720.00  82.80  198.99  4.8
RE DISCCART  581160.00  4194720.00  81.72  198.99  4.8
RE DISCCART  581180.00  4194720.00  79.91  198.99  4.8
RE DISCCART  581200.00  4194720.00  79.01  198.99  4.8
RE DISCCART  581220.00  4194720.00  78.49  198.99  4.8
RE DISCCART  581240.00  4194720.00  77.65  198.99  4.8
RE DISCCART  581260.00  4194720.00  75.75  198.99  4.8
RE DISCCART  581280.00  4194720.00  74.96  198.99  4.8
RE DISCCART  581300.00  4194720.00  74.63  198.99  4.8
RE DISCCART  581320.00  4194720.00  73.60  198.99  4.8
RE DISCCART  581340.00  4194720.00  72.66  198.99  4.8
RE DISCCART  581360.00  4194720.00  72.25  198.99  4.8
RE DISCCART  580920.00  4194740.00  83.27  198.99  4.8
RE DISCCART  580940.00  4194740.00  85.33  198.99  4.8
RE DISCCART  580960.00  4194740.00  86.66  198.99  4.8
RE DISCCART  580980.00  4194740.00  86.75  198.99  4.8
RE DISCCART  581000.00  4194740.00  84.51  198.99  4.8
RE DISCCART  581020.00  4194740.00  82.73  198.99  4.8
RE DISCCART  581040.00  4194740.00  83.20  198.99  4.8
RE DISCCART  581060.00  4194740.00  84.12  198.99  4.8
RE DISCCART  581080.00  4194740.00  84.43  198.99  4.8
RE DISCCART  581100.00  4194740.00  84.32  198.99  4.8
RE DISCCART  581120.00  4194740.00  84.52  198.99  4.8
RE DISCCART  581140.00  4194740.00  84.61  198.99  4.8
RE DISCCART  581160.00  4194740.00  83.96  198.99  4.8
RE DISCCART  581180.00  4194740.00  81.61  198.99  4.8
RE DISCCART  581200.00  4194740.00  80.15  198.99  4.8
RE DISCCART  581220.00  4194740.00  79.55  198.99  4.8
RE DISCCART  581240.00  4194740.00  78.93  198.99  4.8
RE DISCCART  581260.00  4194740.00  78.18  198.99  4.8
RE DISCCART  581280.00  4194740.00  77.65  198.99  4.8
RE DISCCART  581300.00  4194740.00  76.78  198.99  4.8
RE DISCCART  581320.00  4194740.00  74.37  198.99  4.8
RE DISCCART  581340.00  4194740.00  73.75  198.99  4.8
RE DISCCART  580960.00  4194760.00  88.55  198.99  4.8
RE DISCCART  580980.00  4194760.00  88.12  198.99  4.8
RE DISCCART  581000.00  4194760.00  86.03  198.99  4.8
RE DISCCART  581020.00  4194760.00  85.06  198.99  4.8
RE DISCCART  581040.00  4194760.00  85.58  198.99  4.8
```

```
RE DISCCART  581060.00  4194760.00  86.50  198.99  4.8
RE DISCCART  581080.00  4194760.00  86.93  198.99  4.8
RE DISCCART  581100.00  4194760.00  86.21  198.99  4.8
RE DISCCART  581120.00  4194760.00  88.17  198.99  4.8
RE DISCCART  581140.00  4194760.00  88.51  198.99  4.8
RE DISCCART  581160.00  4194760.00  87.88  198.99  4.8
RE DISCCART  581180.00  4194760.00  86.43  198.99  4.8
RE DISCCART  581200.00  4194760.00  83.37  198.99  4.8
RE DISCCART  581220.00  4194760.00  81.83  198.99  4.8
RE DISCCART  581240.00  4194760.00  80.70  198.99  4.8
RE DISCCART  581260.00  4194760.00  79.88  198.99  4.8
RE DISCCART  581280.00  4194760.00  80.24  198.99  4.8
RE DISCCART  581300.00  4194760.00  80.96  198.99  4.8
RE DISCCART  581000.00  4194780.00  89.83  198.99  4.8
RE DISCCART  581020.00  4194780.00  88.51  198.99  4.8
RE DISCCART  581040.00  4194780.00  89.94  198.99  4.8
RE DISCCART  581060.00  4194780.00  92.08  198.99  4.8
RE DISCCART  581080.00  4194780.00  94.95  198.99  4.8
RE DISCCART  581100.00  4194780.00  98.41  198.99  4.8
RE DISCCART  581120.00  4194780.00  97.06  198.99  4.8
RE DISCCART  581140.00  4194780.00  94.64  198.99  4.8
RE DISCCART  581160.00  4194780.00  94.37  198.99  4.8
RE DISCCART  581180.00  4194780.00  91.62  198.99  4.8
RE DISCCART  581200.00  4194780.00  86.19  198.99  4.8
RE DISCCART  581220.00  4194780.00  84.08  198.99  4.8
RE DISCCART  581240.00  4194780.00  83.09  198.99  4.8
RE DISCCART  581260.00  4194780.00  82.90  198.99  4.8
```

Source Files

```
SO EMISFACT SITEA001-SITEA265 HROFDY 7*0.0 10*1.0 7*0.0
SO EMISFACT SITEB001-SITEB243 HROFDY 7*0.0 10*1.0 7*0.0
SO EMISFACT SITEC001-SITEC080 HROFDY 7*0.0 10*1.0 7*0.0
SO EMISFACT ST001-ST283 HROFDY 7*0.0 10*1.0 7*0.0
```

```
SO LOCATION  SITEA001  VOLUME  581104.13  4194395.51  67.46
SO LOCATION  SITEA002  VOLUME  581109.13  4194395.63  67.38
SO LOCATION  SITEA003  VOLUME  581114.13  4194395.75  67.30
SO LOCATION  SITEA004  VOLUME  581099.01  4194400.39  67.59
SO LOCATION  SITEA005  VOLUME  581104.01  4194400.51  67.50
SO LOCATION  SITEA006  VOLUME  581109.01  4194400.63  67.42
SO LOCATION  SITEA007  VOLUME  581114.01  4194400.75  67.32
SO LOCATION  SITEA008  VOLUME  581119.00  4194400.87  67.24
SO LOCATION  SITEA009  VOLUME  581093.89  4194405.27  67.68
SO LOCATION  SITEA010  VOLUME  581098.89  4194405.39  67.61
SO LOCATION  SITEA011  VOLUME  581103.89  4194405.51  67.51
SO LOCATION  SITEA012  VOLUME  581108.89  4194405.62  67.41
SO LOCATION  SITEA013  VOLUME  581113.89  4194405.74  67.31
SO LOCATION  SITEA014  VOLUME  581118.89  4194405.86  67.22
SO LOCATION  SITEA015  VOLUME  581093.77  4194410.26  67.70
SO LOCATION  SITEA016  VOLUME  581098.77  4194410.38  67.64
SO LOCATION  SITEA017  VOLUME  581103.77  4194410.50  67.56
SO LOCATION  SITEA018  VOLUME  581108.77  4194410.62  67.47
SO LOCATION  SITEA019  VOLUME  581113.77  4194410.74  67.39
SO LOCATION  SITEA020  VOLUME  581118.77  4194410.86  67.30
SO LOCATION  SITEA021  VOLUME  581123.76  4194410.98  67.21
SO LOCATION  SITEA022  VOLUME  581093.65  4194415.26  67.72
SO LOCATION  SITEA023  VOLUME  581098.65  4194415.38  67.67
SO LOCATION  SITEA024  VOLUME  581103.65  4194415.50  67.62
SO LOCATION  SITEA025  VOLUME  581108.65  4194415.62  67.56
SO LOCATION  SITEA026  VOLUME  581113.65  4194415.74  67.49
SO LOCATION  SITEA027  VOLUME  581118.65  4194415.86  67.40
SO LOCATION  SITEA028  VOLUME  581123.64  4194415.98  67.31
SO LOCATION  SITEA029  VOLUME  581128.64  4194416.10  67.21
SO LOCATION  SITEA030  VOLUME  581133.64  4194416.22  67.11
SO LOCATION  SITEA031  VOLUME  581138.64  4194416.34  67.01
SO LOCATION  SITEA032  VOLUME  581093.53  4194420.26  67.79
SO LOCATION  SITEA033  VOLUME  581098.53  4194420.38  67.74
SO LOCATION  SITEA034  VOLUME  581103.53  4194420.50  67.69
SO LOCATION  SITEA035  VOLUME  581108.53  4194420.62  67.63
SO LOCATION  SITEA036  VOLUME  581113.53  4194420.74  67.56
SO LOCATION  SITEA037  VOLUME  581118.53  4194420.86  67.47
SO LOCATION  SITEA038  VOLUME  581123.52  4194420.98  67.37
SO LOCATION  SITEA039  VOLUME  581128.52  4194421.10  67.26
SO LOCATION  SITEA040  VOLUME  581133.52  4194421.22  67.15
SO LOCATION  SITEA041  VOLUME  581138.52  4194421.34  67.04
SO LOCATION  SITEA042  VOLUME  581143.52  4194421.46  66.94
SO LOCATION  SITEA043  VOLUME  581148.52  4194421.58  66.84
SO LOCATION  SITEA044  VOLUME  581093.41  4194425.26  67.89
SO LOCATION  SITEA045  VOLUME  581098.41  4194425.38  67.84
SO LOCATION  SITEA046  VOLUME  581103.41  4194425.50  67.78
SO LOCATION  SITEA047  VOLUME  581108.41  4194425.62  67.70
SO LOCATION  SITEA048  VOLUME  581113.41  4194425.74  67.61
SO LOCATION  SITEA049  VOLUME  581118.41  4194425.86  67.51
SO LOCATION  SITEA050  VOLUME  581123.41  4194425.98  67.41
SO LOCATION  SITEA051  VOLUME  581128.40  4194426.10  67.31
SO LOCATION  SITEA052  VOLUME  581133.40  4194426.22  67.19
SO LOCATION  SITEA053  VOLUME  581138.40  4194426.34  67.07
SO LOCATION  SITEA054  VOLUME  581143.40  4194426.46  66.96
```

```
SO LOCATION  SITEA055  VOLUME  581148.40  4194426.58  66.87
SO LOCATION  SITEA056  VOLUME  581153.40  4194426.70  66.81
SO LOCATION  SITEA057  VOLUME  581158.40  4194426.81  66.73
SO LOCATION  SITEA058  VOLUME  581093.29  4194430.26  67.97
SO LOCATION  SITEA059  VOLUME  581098.29  4194430.38  67.90
SO LOCATION  SITEA060  VOLUME  581103.29  4194430.50  67.83
SO LOCATION  SITEA061  VOLUME  581108.29  4194430.62  67.75
SO LOCATION  SITEA062  VOLUME  581113.29  4194430.74  67.65
SO LOCATION  SITEA063  VOLUME  581118.29  4194430.86  67.55
SO LOCATION  SITEA064  VOLUME  581123.29  4194430.98  67.43
SO LOCATION  SITEA065  VOLUME  581128.28  4194431.10  67.33
SO LOCATION  SITEA066  VOLUME  581133.28  4194431.22  67.22
SO LOCATION  SITEA067  VOLUME  581138.28  4194431.34  67.12
SO LOCATION  SITEA068  VOLUME  581143.28  4194431.45  67.03
SO LOCATION  SITEA069  VOLUME  581148.28  4194431.57  66.94
SO LOCATION  SITEA070  VOLUME  581153.28  4194431.69  66.87
SO LOCATION  SITEA071  VOLUME  581158.28  4194431.81  66.78
SO LOCATION  SITEA072  VOLUME  581163.27  4194431.93  66.67
SO LOCATION  SITEA073  VOLUME  581168.27  4194432.05  66.55
SO LOCATION  SITEA074  VOLUME  581093.17  4194435.26  68.02
SO LOCATION  SITEA075  VOLUME  581098.17  4194435.38  67.92
SO LOCATION  SITEA076  VOLUME  581103.17  4194435.50  67.84
SO LOCATION  SITEA077  VOLUME  581108.17  4194435.62  67.77
SO LOCATION  SITEA078  VOLUME  581113.17  4194435.74  67.69
SO LOCATION  SITEA079  VOLUME  581118.17  4194435.86  67.57
SO LOCATION  SITEA080  VOLUME  581123.17  4194435.97  67.44
SO LOCATION  SITEA081  VOLUME  581128.16  4194436.09  67.34
SO LOCATION  SITEA082  VOLUME  581133.16  4194436.21  67.25
SO LOCATION  SITEA083  VOLUME  581138.16  4194436.33  67.18
SO LOCATION  SITEA084  VOLUME  581143.16  4194436.45  67.11
SO LOCATION  SITEA085  VOLUME  581148.16  4194436.57  67.03
SO LOCATION  SITEA086  VOLUME  581153.16  4194436.69  66.93
SO LOCATION  SITEA087  VOLUME  581158.16  4194436.81  66.82
SO LOCATION  SITEA088  VOLUME  581163.15  4194436.93  66.71
SO LOCATION  SITEA089  VOLUME  581168.15  4194437.05  66.57
SO LOCATION  SITEA090  VOLUME  581093.06  4194440.26  68.09
SO LOCATION  SITEA091  VOLUME  581098.05  4194440.38  67.98
SO LOCATION  SITEA092  VOLUME  581103.05  4194440.50  67.88
SO LOCATION  SITEA093  VOLUME  581108.05  4194440.61  67.79
SO LOCATION  SITEA094  VOLUME  581113.05  4194440.73  67.71
SO LOCATION  SITEA095  VOLUME  581118.05  4194440.85  67.60
SO LOCATION  SITEA096  VOLUME  581123.05  4194440.97  67.48
SO LOCATION  SITEA097  VOLUME  581128.05  4194441.09  67.39
SO LOCATION  SITEA098  VOLUME  581133.04  4194441.21  67.31
SO LOCATION  SITEA099  VOLUME  581138.04  4194441.33  67.25
SO LOCATION  SITEA100  VOLUME  581143.04  4194441.45  67.17
SO LOCATION  SITEA101  VOLUME  581148.04  4194441.57  67.08
SO LOCATION  SITEA102  VOLUME  581153.04  4194441.69  66.97
SO LOCATION  SITEA103  VOLUME  581158.04  4194441.81  66.86
SO LOCATION  SITEA104  VOLUME  581163.04  4194441.93  66.73
SO LOCATION  SITEA105  VOLUME  581168.03  4194442.05  66.60
SO LOCATION  SITEA106  VOLUME  581092.94  4194445.25  68.18
SO LOCATION  SITEA107  VOLUME  581097.93  4194445.37  68.06
SO LOCATION  SITEA108  VOLUME  581102.93  4194445.49  67.94
```

```
SO LOCATION  SITEA109  VOLUME  581107.93  4194445.61  67.82
SO LOCATION  SITEA110  VOLUME  581112.93  4194445.73  67.73
SO LOCATION  SITEA111  VOLUME  581117.93  4194445.85  67.63
SO LOCATION  SITEA112  VOLUME  581122.93  4194445.97  67.54
SO LOCATION  SITEA113  VOLUME  581127.93  4194446.09  67.48
SO LOCATION  SITEA114  VOLUME  581132.92  4194446.21  67.40
SO LOCATION  SITEA115  VOLUME  581137.92  4194446.33  67.32
SO LOCATION  SITEA116  VOLUME  581142.92  4194446.45  67.22
SO LOCATION  SITEA117  VOLUME  581147.92  4194446.57  67.12
SO LOCATION  SITEA118  VOLUME  581152.92  4194446.69  67.01
SO LOCATION  SITEA119  VOLUME  581157.92  4194446.81  66.88
SO LOCATION  SITEA120  VOLUME  581162.92  4194446.93  66.75
SO LOCATION  SITEA121  VOLUME  581167.91  4194447.05  66.64
SO LOCATION  SITEA122  VOLUME  581092.82  4194450.25  68.26
SO LOCATION  SITEA123  VOLUME  581097.81  4194450.37  68.13
SO LOCATION  SITEA124  VOLUME  581102.81  4194450.49  67.99
SO LOCATION  SITEA125  VOLUME  581107.81  4194450.61  67.87
SO LOCATION  SITEA126  VOLUME  581112.81  4194450.73  67.77
SO LOCATION  SITEA127  VOLUME  581117.81  4194450.85  67.69
SO LOCATION  SITEA128  VOLUME  581122.81  4194450.97  67.61
SO LOCATION  SITEA129  VOLUME  581127.81  4194451.09  67.55
SO LOCATION  SITEA130  VOLUME  581132.80  4194451.21  67.47
SO LOCATION  SITEA131  VOLUME  581137.80  4194451.33  67.36
SO LOCATION  SITEA132  VOLUME  581142.80  4194451.45  67.25
SO LOCATION  SITEA133  VOLUME  581147.80  4194451.57  67.14
SO LOCATION  SITEA134  VOLUME  581152.80  4194451.69  67.03
SO LOCATION  SITEA135  VOLUME  581157.80  4194451.81  66.91
SO LOCATION  SITEA136  VOLUME  581162.80  4194451.93  66.79
SO LOCATION  SITEA137  VOLUME  581167.79  4194452.05  66.69
SO LOCATION  SITEA138  VOLUME  581092.70  4194455.25  68.31
SO LOCATION  SITEA139  VOLUME  581097.70  4194455.37  68.18
SO LOCATION  SITEA140  VOLUME  581102.69  4194455.49  68.05
SO LOCATION  SITEA141  VOLUME  581107.69  4194455.61  67.92
SO LOCATION  SITEA142  VOLUME  581112.69  4194455.73  67.83
SO LOCATION  SITEA143  VOLUME  581117.69  4194455.85  67.76
SO LOCATION  SITEA144  VOLUME  581122.69  4194455.97  67.69
SO LOCATION  SITEA145  VOLUME  581127.69  4194456.09  67.61
SO LOCATION  SITEA146  VOLUME  581132.69  4194456.21  67.51
SO LOCATION  SITEA147  VOLUME  581137.68  4194456.33  67.39
SO LOCATION  SITEA148  VOLUME  581142.68  4194456.45  67.27
SO LOCATION  SITEA149  VOLUME  581147.68  4194456.57  67.15
SO LOCATION  SITEA150  VOLUME  581152.68  4194456.69  67.04
SO LOCATION  SITEA151  VOLUME  581157.68  4194456.81  66.94
SO LOCATION  SITEA152  VOLUME  581162.68  4194456.93  66.84
SO LOCATION  SITEA153  VOLUME  581167.68  4194457.05  66.74
SO LOCATION  SITEA154  VOLUME  581092.58  4194460.25  68.36
SO LOCATION  SITEA155  VOLUME  581097.58  4194460.37  68.23
SO LOCATION  SITEA156  VOLUME  581102.57  4194460.49  68.09
SO LOCATION  SITEA157  VOLUME  581107.57  4194460.61  67.97
SO LOCATION  SITEA158  VOLUME  581112.57  4194460.73  67.88
SO LOCATION  SITEA159  VOLUME  581117.57  4194460.85  67.80
SO LOCATION  SITEA160  VOLUME  581122.57  4194460.97  67.73
SO LOCATION  SITEA161  VOLUME  581127.57  4194461.09  67.64
SO LOCATION  SITEA162  VOLUME  581132.57  4194461.21  67.53
```

```
SO LOCATION  SITEA163  VOLUME  581137.56  4194461.33  67.41
SO LOCATION  SITEA164  VOLUME  581142.56  4194461.45  67.29
SO LOCATION  SITEA165  VOLUME  581147.56  4194461.57  67.17
SO LOCATION  SITEA166  VOLUME  581152.56  4194461.69  67.08
SO LOCATION  SITEA167  VOLUME  581157.56  4194461.80  66.98
SO LOCATION  SITEA168  VOLUME  581162.56  4194461.92  66.89
SO LOCATION  SITEA169  VOLUME  581167.56  4194462.04  66.78
SO LOCATION  SITEA170  VOLUME  581092.46  4194465.25  68.39
SO LOCATION  SITEA171  VOLUME  581097.46  4194465.37  68.27
SO LOCATION  SITEA172  VOLUME  581102.45  4194465.49  68.14
SO LOCATION  SITEA173  VOLUME  581107.45  4194465.61  68.01
SO LOCATION  SITEA174  VOLUME  581112.45  4194465.73  67.92
SO LOCATION  SITEA175  VOLUME  581117.45  4194465.85  67.82
SO LOCATION  SITEA176  VOLUME  581122.45  4194465.97  67.73
SO LOCATION  SITEA177  VOLUME  581127.45  4194466.09  67.64
SO LOCATION  SITEA178  VOLUME  581132.45  4194466.21  67.53
SO LOCATION  SITEA179  VOLUME  581137.44  4194466.33  67.42
SO LOCATION  SITEA180  VOLUME  581142.44  4194466.44  67.31
SO LOCATION  SITEA181  VOLUME  581147.44  4194466.56  67.21
SO LOCATION  SITEA182  VOLUME  581152.44  4194466.68  67.12
SO LOCATION  SITEA183  VOLUME  581157.44  4194466.80  67.02
SO LOCATION  SITEA184  VOLUME  581162.44  4194466.92  66.93
SO LOCATION  SITEA185  VOLUME  581167.44  4194467.04  66.82
SO LOCATION  SITEA186  VOLUME  581092.34  4194470.25  68.40
SO LOCATION  SITEA187  VOLUME  581097.34  4194470.37  68.28
SO LOCATION  SITEA188  VOLUME  581102.33  4194470.49  68.15
SO LOCATION  SITEA189  VOLUME  581107.33  4194470.61  68.04
SO LOCATION  SITEA190  VOLUME  581112.33  4194470.73  67.94
SO LOCATION  SITEA191  VOLUME  581117.33  4194470.85  67.84
SO LOCATION  SITEA192  VOLUME  581122.33  4194470.96  67.74
SO LOCATION  SITEA193  VOLUME  581127.33  4194471.08  67.64
SO LOCATION  SITEA194  VOLUME  581132.33  4194471.20  67.53
SO LOCATION  SITEA195  VOLUME  581137.32  4194471.32  67.41
SO LOCATION  SITEA196  VOLUME  581142.32  4194471.44  67.31
SO LOCATION  SITEA197  VOLUME  581147.32  4194471.56  67.21
SO LOCATION  SITEA198  VOLUME  581152.32  4194471.68  67.13
SO LOCATION  SITEA199  VOLUME  581157.32  4194471.80  67.04
SO LOCATION  SITEA200  VOLUME  581162.32  4194471.92  66.93
SO LOCATION  SITEA201  VOLUME  581167.32  4194472.04  66.81
SO LOCATION  SITEA202  VOLUME  581092.22  4194475.25  68.34
SO LOCATION  SITEA203  VOLUME  581097.22  4194475.37  68.24
SO LOCATION  SITEA204  VOLUME  581102.22  4194475.49  68.13
SO LOCATION  SITEA205  VOLUME  581107.21  4194475.60  68.03
SO LOCATION  SITEA206  VOLUME  581112.21  4194475.72  67.94
SO LOCATION  SITEA207  VOLUME  581117.21  4194475.84  67.84
SO LOCATION  SITEA208  VOLUME  581122.21  4194475.96  67.74
SO LOCATION  SITEA209  VOLUME  581127.21  4194476.08  67.64
SO LOCATION  SITEA210  VOLUME  581132.21  4194476.20  67.53
SO LOCATION  SITEA211  VOLUME  581137.21  4194476.32  67.40
SO LOCATION  SITEA212  VOLUME  581142.20  4194476.44  67.29
SO LOCATION  SITEA213  VOLUME  581147.20  4194476.56  67.19
SO LOCATION  SITEA214  VOLUME  581152.20  4194476.68  67.12
SO LOCATION  SITEA215  VOLUME  581157.20  4194476.80  67.02
SO LOCATION  SITEA216  VOLUME  581162.20  4194476.92  66.90
```

```
SO LOCATION  SITEA217  VOLUME  581167.20  4194477.04  66.78
SO LOCATION  SITEA218  VOLUME  581092.10  4194480.24  68.28
SO LOCATION  SITEA219  VOLUME  581097.10  4194480.36  68.19
SO LOCATION  SITEA220  VOLUME  581102.10  4194480.48  68.10
SO LOCATION  SITEA221  VOLUME  581107.09  4194480.60  68.01
SO LOCATION  SITEA222  VOLUME  581112.09  4194480.72  67.93
SO LOCATION  SITEA223  VOLUME  581117.09  4194480.84  67.84
SO LOCATION  SITEA224  VOLUME  581122.09  4194480.96  67.74
SO LOCATION  SITEA225  VOLUME  581127.09  4194481.08  67.64
SO LOCATION  SITEA226  VOLUME  581132.09  4194481.20  67.53
SO LOCATION  SITEA227  VOLUME  581137.09  4194481.32  67.39
SO LOCATION  SITEA228  VOLUME  581142.08  4194481.44  67.27
SO LOCATION  SITEA229  VOLUME  581147.08  4194481.56  67.16
SO LOCATION  SITEA230  VOLUME  581152.08  4194481.68  67.09
SO LOCATION  SITEA231  VOLUME  581157.08  4194481.80  66.99
SO LOCATION  SITEA232  VOLUME  581162.08  4194481.92  66.87
SO LOCATION  SITEA233  VOLUME  581167.08  4194482.04  66.77
SO LOCATION  SITEA234  VOLUME  581091.98  4194485.24  68.19
SO LOCATION  SITEA235  VOLUME  581096.98  4194485.36  68.12
SO LOCATION  SITEA236  VOLUME  581101.98  4194485.48  68.05
SO LOCATION  SITEA237  VOLUME  581106.97  4194485.60  67.97
SO LOCATION  SITEA238  VOLUME  581111.97  4194485.72  67.91
SO LOCATION  SITEA239  VOLUME  581116.97  4194485.84  67.83
SO LOCATION  SITEA240  VOLUME  581121.97  4194485.96  67.75
SO LOCATION  SITEA241  VOLUME  581126.97  4194486.08  67.64
SO LOCATION  SITEA242  VOLUME  581131.97  4194486.20  67.52
SO LOCATION  SITEA243  VOLUME  581136.97  4194486.32  67.39
SO LOCATION  SITEA244  VOLUME  581141.96  4194486.44  67.27
SO LOCATION  SITEA245  VOLUME  581146.96  4194486.56  67.15
SO LOCATION  SITEA246  VOLUME  581151.96  4194486.68  67.05
SO LOCATION  SITEA247  VOLUME  581156.96  4194486.80  66.95
SO LOCATION  SITEA248  VOLUME  581161.96  4194486.92  66.84
SO LOCATION  SITEA249  VOLUME  581166.96  4194487.04  66.79
SO LOCATION  SITEA250  VOLUME  581091.86  4194490.24  68.09
SO LOCATION  SITEA251  VOLUME  581096.86  4194490.36  68.04
SO LOCATION  SITEA252  VOLUME  581101.86  4194490.48  67.99
SO LOCATION  SITEA253  VOLUME  581106.86  4194490.60  67.93
SO LOCATION  SITEA254  VOLUME  581111.85  4194490.72  67.88
SO LOCATION  SITEA255  VOLUME  581116.85  4194490.84  67.81
SO LOCATION  SITEA256  VOLUME  581121.85  4194490.96  67.73
SO LOCATION  SITEA257  VOLUME  581126.85  4194491.08  67.63
SO LOCATION  SITEA258  VOLUME  581131.85  4194491.20  67.51
SO LOCATION  SITEA259  VOLUME  581136.85  4194491.32  67.38
SO LOCATION  SITEA260  VOLUME  581141.85  4194491.44  67.25
SO LOCATION  SITEA261  VOLUME  581146.84  4194491.56  67.12
SO LOCATION  SITEA262  VOLUME  581151.84  4194491.68  67.01
SO LOCATION  SITEA263  VOLUME  581156.84  4194491.80  66.93
SO LOCATION  SITEA264  VOLUME  581161.84  4194491.92  66.87
SO LOCATION  SITEA265  VOLUME  581166.84  4194492.04  66.87
SO LOCATION  SITEB001  VOLUME  581167.10  4194271.98  68.56
SO LOCATION  SITEB002  VOLUME  581172.10  4194272.10  68.56
SO LOCATION  SITEB003  VOLUME  581177.10  4194272.22  68.53
SO LOCATION  SITEB004  VOLUME  581182.10  4194272.34  68.50
SO LOCATION  SITEB005  VOLUME  581166.98  4194276.98  68.49
```

```
SO LOCATION  SITEB006  VOLUME  581171.98  4194277.10  68.50
SO LOCATION  SITEB007  VOLUME  581176.98  4194277.22  68.50
SO LOCATION  SITEB008  VOLUME  581181.98  4194277.34  68.48
SO LOCATION  SITEB009  VOLUME  581166.86  4194281.98  68.41
SO LOCATION  SITEB010  VOLUME  581171.86  4194282.10  68.45
SO LOCATION  SITEB011  VOLUME  581176.86  4194282.22  68.45
SO LOCATION  SITEB012  VOLUME  581181.86  4194282.33  68.45
SO LOCATION  SITEB013  VOLUME  581166.74  4194286.97  68.32
SO LOCATION  SITEB014  VOLUME  581171.74  4194287.09  68.37
SO LOCATION  SITEB015  VOLUME  581176.74  4194287.21  68.39
SO LOCATION  SITEB016  VOLUME  581181.74  4194287.33  68.40
SO LOCATION  SITEB017  VOLUME  581166.62  4194291.97  68.22
SO LOCATION  SITEB018  VOLUME  581171.62  4194292.09  68.27
SO LOCATION  SITEB019  VOLUME  581176.62  4194292.21  68.31
SO LOCATION  SITEB020  VOLUME  581181.62  4194292.33  68.34
SO LOCATION  SITEB021  VOLUME  581166.50  4194296.97  68.13
SO LOCATION  SITEB022  VOLUME  581171.50  4194297.09  68.18
SO LOCATION  SITEB023  VOLUME  581176.50  4194297.21  68.22
SO LOCATION  SITEB024  VOLUME  581181.50  4194297.33  68.26
SO LOCATION  SITEB025  VOLUME  581166.38  4194301.97  68.06
SO LOCATION  SITEB026  VOLUME  581171.38  4194302.09  68.08
SO LOCATION  SITEB027  VOLUME  581176.38  4194302.21  68.12
SO LOCATION  SITEB028  VOLUME  581181.38  4194302.33  68.16
SO LOCATION  SITEB029  VOLUME  581166.26  4194306.97  68.00
SO LOCATION  SITEB030  VOLUME  581171.26  4194307.09  68.01
SO LOCATION  SITEB031  VOLUME  581176.26  4194307.21  68.03
SO LOCATION  SITEB032  VOLUME  581181.26  4194307.33  68.06
SO LOCATION  SITEB033  VOLUME  581166.14  4194311.97  67.95
SO LOCATION  SITEB034  VOLUME  581171.14  4194312.09  67.95
SO LOCATION  SITEB035  VOLUME  581176.14  4194312.21  67.96
SO LOCATION  SITEB036  VOLUME  581181.14  4194312.33  67.97
SO LOCATION  SITEB037  VOLUME  581166.02  4194316.97  67.90
SO LOCATION  SITEB038  VOLUME  581171.02  4194317.09  67.90
SO LOCATION  SITEB039  VOLUME  581176.02  4194317.21  67.90
SO LOCATION  SITEB040  VOLUME  581181.02  4194317.32  67.90
SO LOCATION  SITEB041  VOLUME  581105.92  4194320.53  67.76
SO LOCATION  SITEB042  VOLUME  581110.92  4194320.65  67.70
SO LOCATION  SITEB043  VOLUME  581165.90  4194321.96  67.86
SO LOCATION  SITEB044  VOLUME  581170.90  4194322.08  67.85
SO LOCATION  SITEB045  VOLUME  581175.90  4194322.20  67.85
SO LOCATION  SITEB046  VOLUME  581180.90  4194322.32  67.84
SO LOCATION  SITEB047  VOLUME  581105.80  4194325.53  67.69
SO LOCATION  SITEB048  VOLUME  581110.80  4194325.65  67.63
SO LOCATION  SITEB049  VOLUME  581115.80  4194325.77  67.57
SO LOCATION  SITEB050  VOLUME  581165.79  4194326.96  67.78
SO LOCATION  SITEB051  VOLUME  581170.78  4194327.08  67.78
SO LOCATION  SITEB052  VOLUME  581175.78  4194327.20  67.78
SO LOCATION  SITEB053  VOLUME  581180.78  4194327.32  67.79
SO LOCATION  SITEB054  VOLUME  581090.69  4194330.17  67.49
SO LOCATION  SITEB055  VOLUME  581095.69  4194330.29  67.46
SO LOCATION  SITEB056  VOLUME  581100.68  4194330.41  67.41
SO LOCATION  SITEB057  VOLUME  581105.68  4194330.53  67.36
SO LOCATION  SITEB058  VOLUME  581110.68  4194330.65  67.33
SO LOCATION  SITEB059  VOLUME  581115.68  4194330.77  67.30
```

```
SO LOCATION  SITEB060  VOLUME  581120.68  4194330.89  67.31
SO LOCATION  SITEB061  VOLUME  581125.68  4194331.00  67.32
SO LOCATION  SITEB062  VOLUME  581130.68  4194331.12  67.34
SO LOCATION  SITEB063  VOLUME  581135.67  4194331.24  67.36
SO LOCATION  SITEB064  VOLUME  581140.67  4194331.36  67.38
SO LOCATION  SITEB065  VOLUME  581145.67  4194331.48  67.42
SO LOCATION  SITEB066  VOLUME  581150.67  4194331.60  67.48
SO LOCATION  SITEB067  VOLUME  581155.67  4194331.72  67.54
SO LOCATION  SITEB068  VOLUME  581160.67  4194331.84  67.60
SO LOCATION  SITEB069  VOLUME  581165.67  4194331.96  67.64
SO LOCATION  SITEB070  VOLUME  581170.66  4194332.08  67.67
SO LOCATION  SITEB071  VOLUME  581175.66  4194332.20  67.70
SO LOCATION  SITEB072  VOLUME  581180.66  4194332.32  67.73
SO LOCATION  SITEB073  VOLUME  581090.57  4194335.17  67.19
SO LOCATION  SITEB074  VOLUME  581095.57  4194335.29  67.14
SO LOCATION  SITEB075  VOLUME  581100.56  4194335.41  67.09
SO LOCATION  SITEB076  VOLUME  581105.56  4194335.53  67.05
SO LOCATION  SITEB077  VOLUME  581110.56  4194335.64  67.04
SO LOCATION  SITEB078  VOLUME  581115.56  4194335.76  67.05
SO LOCATION  SITEB079  VOLUME  581120.56  4194335.88  67.09
SO LOCATION  SITEB080  VOLUME  581125.56  4194336.00  67.13
SO LOCATION  SITEB081  VOLUME  581130.56  4194336.12  67.17
SO LOCATION  SITEB082  VOLUME  581135.55  4194336.24  67.19
SO LOCATION  SITEB083  VOLUME  581140.55  4194336.36  67.20
SO LOCATION  SITEB084  VOLUME  581145.55  4194336.48  67.22
SO LOCATION  SITEB085  VOLUME  581150.55  4194336.60  67.26
SO LOCATION  SITEB086  VOLUME  581155.55  4194336.72  67.33
SO LOCATION  SITEB087  VOLUME  581160.55  4194336.84  67.41
SO LOCATION  SITEB088  VOLUME  581165.55  4194336.96  67.48
SO LOCATION  SITEB089  VOLUME  581170.54  4194337.08  67.52
SO LOCATION  SITEB090  VOLUME  581175.54  4194337.20  67.57
SO LOCATION  SITEB091  VOLUME  581180.54  4194337.32  67.61
SO LOCATION  SITEB092  VOLUME  581090.45  4194340.17  67.07
SO LOCATION  SITEB093  VOLUME  581095.45  4194340.28  67.02
SO LOCATION  SITEB094  VOLUME  581100.45  4194340.40  66.97
SO LOCATION  SITEB095  VOLUME  581105.44  4194340.52  66.92
SO LOCATION  SITEB096  VOLUME  581110.44  4194340.64  66.89
SO LOCATION  SITEB097  VOLUME  581115.44  4194340.76  66.88
SO LOCATION  SITEB098  VOLUME  581120.44  4194340.88  66.90
SO LOCATION  SITEB099  VOLUME  581125.44  4194341.00  66.92
SO LOCATION  SITEB100  VOLUME  581130.44  4194341.12  66.93
SO LOCATION  SITEB101  VOLUME  581135.44  4194341.24  66.95
SO LOCATION  SITEB102  VOLUME  581140.43  4194341.36  66.97
SO LOCATION  SITEB103  VOLUME  581145.43  4194341.48  67.03
SO LOCATION  SITEB104  VOLUME  581150.43  4194341.60  67.09
SO LOCATION  SITEB105  VOLUME  581155.43  4194341.72  67.15
SO LOCATION  SITEB106  VOLUME  581160.43  4194341.84  67.19
SO LOCATION  SITEB107  VOLUME  581165.43  4194341.96  67.23
SO LOCATION  SITEB108  VOLUME  581170.43  4194342.08  67.27
SO LOCATION  SITEB109  VOLUME  581175.42  4194342.20  67.32
SO LOCATION  SITEB110  VOLUME  581180.42  4194342.32  67.36
SO LOCATION  SITEB111  VOLUME  581090.33  4194345.16  66.95
SO LOCATION  SITEB112  VOLUME  581095.33  4194345.28  66.90
SO LOCATION  SITEB113  VOLUME  581100.33  4194345.40  66.85
```

```
SO LOCATION  SITEB114  VOLUME  581105.32  4194345.52  66.80
SO LOCATION  SITEB115  VOLUME  581110.32  4194345.64  66.75
SO LOCATION  SITEB116  VOLUME  581115.32  4194345.76  66.72
SO LOCATION  SITEB117  VOLUME  581120.32  4194345.88  66.71
SO LOCATION  SITEB118  VOLUME  581125.32  4194346.00  66.71
SO LOCATION  SITEB119  VOLUME  581130.32  4194346.12  66.71
SO LOCATION  SITEB120  VOLUME  581135.32  4194346.24  66.73
SO LOCATION  SITEB121  VOLUME  581140.31  4194346.36  66.76
SO LOCATION  SITEB122  VOLUME  581145.31  4194346.48  66.84
SO LOCATION  SITEB123  VOLUME  581150.31  4194346.60  66.91
SO LOCATION  SITEB124  VOLUME  581155.31  4194346.72  66.97
SO LOCATION  SITEB125  VOLUME  581160.31  4194346.84  66.99
SO LOCATION  SITEB126  VOLUME  581165.31  4194346.96  67.00
SO LOCATION  SITEB127  VOLUME  581170.31  4194347.08  67.04
SO LOCATION  SITEB128  VOLUME  581175.30  4194347.20  67.08
SO LOCATION  SITEB129  VOLUME  581180.30  4194347.32  67.12
SO LOCATION  SITEB130  VOLUME  581100.21  4194350.40  66.85
SO LOCATION  SITEB131  VOLUME  581105.20  4194350.52  66.78
SO LOCATION  SITEB132  VOLUME  581110.20  4194350.64  66.72
SO LOCATION  SITEB133  VOLUME  581115.20  4194350.76  66.65
SO LOCATION  SITEB134  VOLUME  581120.20  4194350.88  66.63
SO LOCATION  SITEB135  VOLUME  581125.20  4194351.00  66.61
SO LOCATION  SITEB136  VOLUME  581130.20  4194351.12  66.60
SO LOCATION  SITEB137  VOLUME  581135.20  4194351.24  66.61
SO LOCATION  SITEB138  VOLUME  581140.19  4194351.36  66.63
SO LOCATION  SITEB139  VOLUME  581145.19  4194351.48  66.68
SO LOCATION  SITEB140  VOLUME  581150.19  4194351.60  66.73
SO LOCATION  SITEB141  VOLUME  581155.19  4194351.72  66.79
SO LOCATION  SITEB142  VOLUME  581160.19  4194351.84  66.81
SO LOCATION  SITEB143  VOLUME  581165.19  4194351.96  66.84
SO LOCATION  SITEB144  VOLUME  581170.19  4194352.08  66.85
SO LOCATION  SITEB145  VOLUME  581175.18  4194352.20  66.88
SO LOCATION  SITEB146  VOLUME  581180.18  4194352.31  66.92
SO LOCATION  SITEB147  VOLUME  581110.08  4194355.64  66.68
SO LOCATION  SITEB148  VOLUME  581115.08  4194355.76  66.59
SO LOCATION  SITEB149  VOLUME  581120.08  4194355.88  66.54
SO LOCATION  SITEB150  VOLUME  581125.08  4194356.00  66.51
SO LOCATION  SITEB151  VOLUME  581130.08  4194356.12  66.50
SO LOCATION  SITEB152  VOLUME  581135.08  4194356.24  66.50
SO LOCATION  SITEB153  VOLUME  581140.08  4194356.36  66.50
SO LOCATION  SITEB154  VOLUME  581145.07  4194356.48  66.53
SO LOCATION  SITEB155  VOLUME  581150.07  4194356.60  66.57
SO LOCATION  SITEB156  VOLUME  581155.07  4194356.72  66.62
SO LOCATION  SITEB157  VOLUME  581160.07  4194356.83  66.65
SO LOCATION  SITEB158  VOLUME  581165.07  4194356.95  66.68
SO LOCATION  SITEB159  VOLUME  581170.07  4194357.07  66.69
SO LOCATION  SITEB160  VOLUME  581175.07  4194357.19  66.71
SO LOCATION  SITEB161  VOLUME  581180.06  4194357.31  66.73
SO LOCATION  SITEB162  VOLUME  581114.96  4194360.76  66.63
SO LOCATION  SITEB163  VOLUME  581119.96  4194360.88  66.56
SO LOCATION  SITEB164  VOLUME  581124.96  4194361.00  66.52
SO LOCATION  SITEB165  VOLUME  581129.96  4194361.12  66.50
SO LOCATION  SITEB166  VOLUME  581134.96  4194361.24  66.50
SO LOCATION  SITEB167  VOLUME  581139.96  4194361.36  66.51
```

```
SO LOCATION  SITEB168  VOLUME  581144.95  4194361.47  66.52
SO LOCATION  SITEB169  VOLUME  581149.95  4194361.59  66.53
SO LOCATION  SITEB170  VOLUME  581154.95  4194361.71  66.56
SO LOCATION  SITEB171  VOLUME  581159.95  4194361.83  66.58
SO LOCATION  SITEB172  VOLUME  581164.95  4194361.95  66.60
SO LOCATION  SITEB173  VOLUME  581169.95  4194362.07  66.62
SO LOCATION  SITEB174  VOLUME  581174.95  4194362.19  66.62
SO LOCATION  SITEB175  VOLUME  581179.94  4194362.31  66.59
SO LOCATION  SITEB176  VOLUME  581119.84  4194365.88  66.59
SO LOCATION  SITEB177  VOLUME  581124.84  4194365.99  66.52
SO LOCATION  SITEB178  VOLUME  581129.84  4194366.11  66.50
SO LOCATION  SITEB179  VOLUME  581134.84  4194366.23  66.50
SO LOCATION  SITEB180  VOLUME  581139.84  4194366.35  66.51
SO LOCATION  SITEB181  VOLUME  581144.83  4194366.47  66.51
SO LOCATION  SITEB182  VOLUME  581149.83  4194366.59  66.51
SO LOCATION  SITEB183  VOLUME  581154.83  4194366.71  66.50
SO LOCATION  SITEB184  VOLUME  581159.83  4194366.83  66.51
SO LOCATION  SITEB185  VOLUME  581164.83  4194366.95  66.52
SO LOCATION  SITEB186  VOLUME  581169.83  4194367.07  66.55
SO LOCATION  SITEB187  VOLUME  581174.83  4194367.19  66.52
SO LOCATION  SITEB188  VOLUME  581179.82  4194367.31  66.46
SO LOCATION  SITEB189  VOLUME  581124.72  4194370.99  66.57
SO LOCATION  SITEB190  VOLUME  581129.72  4194371.11  66.56
SO LOCATION  SITEB191  VOLUME  581134.72  4194371.23  66.56
SO LOCATION  SITEB192  VOLUME  581139.72  4194371.35  66.56
SO LOCATION  SITEB193  VOLUME  581144.71  4194371.47  66.57
SO LOCATION  SITEB194  VOLUME  581149.71  4194371.59  66.56
SO LOCATION  SITEB195  VOLUME  581154.71  4194371.71  66.54
SO LOCATION  SITEB196  VOLUME  581159.71  4194371.83  66.50
SO LOCATION  SITEB197  VOLUME  581164.71  4194371.95  66.46
SO LOCATION  SITEB198  VOLUME  581169.71  4194372.07  66.44
SO LOCATION  SITEB199  VOLUME  581174.71  4194372.19  66.40
SO LOCATION  SITEB200  VOLUME  581179.70  4194372.31  66.34
SO LOCATION  SITEB201  VOLUME  581129.60  4194376.11  66.61
SO LOCATION  SITEB202  VOLUME  581134.60  4194376.23  66.61
SO LOCATION  SITEB203  VOLUME  581139.60  4194376.35  66.62
SO LOCATION  SITEB204  VOLUME  581144.60  4194376.47  66.62
SO LOCATION  SITEB205  VOLUME  581149.59  4194376.59  66.61
SO LOCATION  SITEB206  VOLUME  581154.59  4194376.71  66.57
SO LOCATION  SITEB207  VOLUME  581159.59  4194376.83  66.49
SO LOCATION  SITEB208  VOLUME  581164.59  4194376.95  66.40
SO LOCATION  SITEB209  VOLUME  581169.59  4194377.07  66.33
SO LOCATION  SITEB210  VOLUME  581174.59  4194377.19  66.27
SO LOCATION  SITEB211  VOLUME  581179.59  4194377.31  66.23
SO LOCATION  SITEB212  VOLUME  581134.48  4194381.23  66.71
SO LOCATION  SITEB213  VOLUME  581139.48  4194381.35  66.69
SO LOCATION  SITEB214  VOLUME  581144.48  4194381.47  66.65
SO LOCATION  SITEB215  VOLUME  581149.47  4194381.59  66.61
SO LOCATION  SITEB216  VOLUME  581154.47  4194381.71  66.54
SO LOCATION  SITEB217  VOLUME  581159.47  4194381.83  66.47
SO LOCATION  SITEB218  VOLUME  581164.47  4194381.95  66.39
SO LOCATION  SITEB219  VOLUME  581169.47  4194382.07  66.31
SO LOCATION  SITEB220  VOLUME  581174.47  4194382.19  66.24
SO LOCATION  SITEB221  VOLUME  581179.47  4194382.31  66.18
```

```
SO LOCATION  SITEB222  VOLUME  581144.36  4194386.47  66.68
SO LOCATION  SITEB223  VOLUME  581149.35  4194386.59  66.60
SO LOCATION  SITEB224  VOLUME  581154.35  4194386.71  66.52
SO LOCATION  SITEB225  VOLUME  581159.35  4194386.83  66.45
SO LOCATION  SITEB226  VOLUME  581164.35  4194386.95  66.38
SO LOCATION  SITEB227  VOLUME  581169.35  4194387.07  66.29
SO LOCATION  SITEB228  VOLUME  581174.35  4194387.19  66.21
SO LOCATION  SITEB229  VOLUME  581179.35  4194387.30  66.15
SO LOCATION  SITEB230  VOLUME  581149.24  4194391.59  66.63
SO LOCATION  SITEB231  VOLUME  581154.23  4194391.71  66.55
SO LOCATION  SITEB232  VOLUME  581159.23  4194391.82  66.47
SO LOCATION  SITEB233  VOLUME  581164.23  4194391.94  66.40
SO LOCATION  SITEB234  VOLUME  581169.23  4194392.06  66.32
SO LOCATION  SITEB235  VOLUME  581174.23  4194392.18  66.26
SO LOCATION  SITEB236  VOLUME  581179.23  4194392.30  66.20
SO LOCATION  SITEB237  VOLUME  581159.11  4194396.82  66.50
SO LOCATION  SITEB238  VOLUME  581164.11  4194396.94  66.41
SO LOCATION  SITEB239  VOLUME  581169.11  4194397.06  66.36
SO LOCATION  SITEB240  VOLUME  581174.11  4194397.18  66.30
SO LOCATION  SITEB241  VOLUME  581179.11  4194397.30  66.25
SO LOCATION  SITEB242  VOLUME  581173.99  4194402.18  66.28
SO LOCATION  SITEB243  VOLUME  581178.99  4194402.30  66.20
SO LOCATION  SITEC001  VOLUME  581072.37  4194259.71  68.39
SO LOCATION  SITEC002  VOLUME  581077.37  4194259.83  68.50
SO LOCATION  SITEC003  VOLUME  581082.36  4194259.95  68.52
SO LOCATION  SITEC004  VOLUME  581087.36  4194260.07  68.46
SO LOCATION  SITEC005  VOLUME  581067.25  4194264.59  68.10
SO LOCATION  SITEC006  VOLUME  581072.25  4194264.71  68.26
SO LOCATION  SITEC007  VOLUME  581077.25  4194264.83  68.37
SO LOCATION  SITEC008  VOLUME  581082.24  4194264.95  68.40
SO LOCATION  SITEC009  VOLUME  581087.24  4194265.07  68.34
SO LOCATION  SITEC010  VOLUME  581062.13  4194269.47  67.94
SO LOCATION  SITEC011  VOLUME  581067.13  4194269.59  67.99
SO LOCATION  SITEC012  VOLUME  581072.13  4194269.71  68.11
SO LOCATION  SITEC013  VOLUME  581077.13  4194269.83  68.21
SO LOCATION  SITEC014  VOLUME  581082.13  4194269.95  68.29
SO LOCATION  SITEC015  VOLUME  581087.12  4194270.07  68.28
SO LOCATION  SITEC016  VOLUME  581052.01  4194274.23  67.91
SO LOCATION  SITEC017  VOLUME  581057.01  4194274.35  67.90
SO LOCATION  SITEC018  VOLUME  581062.01  4194274.47  67.90
SO LOCATION  SITEC019  VOLUME  581067.01  4194274.59  67.92
SO LOCATION  SITEC020  VOLUME  581072.01  4194274.71  67.99
SO LOCATION  SITEC021  VOLUME  581077.01  4194274.82  68.08
SO LOCATION  SITEC022  VOLUME  581082.01  4194274.94  68.18
SO LOCATION  SITEC023  VOLUME  581087.00  4194275.06  68.21
SO LOCATION  SITEC024  VOLUME  581046.90  4194279.11  67.91
SO LOCATION  SITEC025  VOLUME  581051.89  4194279.23  67.91
SO LOCATION  SITEC026  VOLUME  581056.89  4194279.35  67.91
SO LOCATION  SITEC027  VOLUME  581061.89  4194279.46  67.90
SO LOCATION  SITEC028  VOLUME  581066.89  4194279.58  67.90
SO LOCATION  SITEC029  VOLUME  581071.89  4194279.70  67.95
SO LOCATION  SITEC030  VOLUME  581076.89  4194279.82  68.01
SO LOCATION  SITEC031  VOLUME  581081.89  4194279.94  68.09
SO LOCATION  SITEC032  VOLUME  581086.88  4194280.06  68.12
```

```
SO LOCATION  SITEC033  VOLUME  581051.77  4194284.22  67.91
SO LOCATION  SITEC034  VOLUME  581056.77  4194284.34  67.91
SO LOCATION  SITEC035  VOLUME  581061.77  4194284.46  67.91
SO LOCATION  SITEC036  VOLUME  581066.77  4194284.58  67.90
SO LOCATION  SITEC037  VOLUME  581071.77  4194284.70  67.92
SO LOCATION  SITEC038  VOLUME  581076.77  4194284.82  67.95
SO LOCATION  SITEC039  VOLUME  581081.77  4194284.94  68.01
SO LOCATION  SITEC040  VOLUME  581086.76  4194285.06  68.04
SO LOCATION  SITEC041  VOLUME  581056.65  4194289.34  67.92
SO LOCATION  SITEC042  VOLUME  581061.65  4194289.46  67.92
SO LOCATION  SITEC043  VOLUME  581066.65  4194289.58  67.91
SO LOCATION  SITEC044  VOLUME  581071.65  4194289.70  67.91
SO LOCATION  SITEC045  VOLUME  581076.65  4194289.82  67.93
SO LOCATION  SITEC046  VOLUME  581081.65  4194289.94  67.96
SO LOCATION  SITEC047  VOLUME  581086.65  4194290.06  67.99
SO LOCATION  SITEC048  VOLUME  581061.53  4194294.46  67.91
SO LOCATION  SITEC049  VOLUME  581066.53  4194294.58  67.91
SO LOCATION  SITEC050  VOLUME  581071.53  4194294.70  67.91
SO LOCATION  SITEC051  VOLUME  581076.53  4194294.82  67.91
SO LOCATION  SITEC052  VOLUME  581081.53  4194294.94  67.93
SO LOCATION  SITEC053  VOLUME  581086.53  4194295.06  67.95
SO LOCATION  SITEC054  VOLUME  581061.41  4194299.46  67.83
SO LOCATION  SITEC055  VOLUME  581066.41  4194299.58  67.85
SO LOCATION  SITEC056  VOLUME  581071.41  4194299.70  67.88
SO LOCATION  SITEC057  VOLUME  581076.41  4194299.82  67.91
SO LOCATION  SITEC058  VOLUME  581081.41  4194299.94  67.92
SO LOCATION  SITEC059  VOLUME  581086.41  4194300.06  67.94
SO LOCATION  SITEC060  VOLUME  581066.29  4194304.58  67.80
SO LOCATION  SITEC061  VOLUME  581071.29  4194304.70  67.86
SO LOCATION  SITEC062  VOLUME  581076.29  4194304.82  67.91
SO LOCATION  SITEC063  VOLUME  581081.29  4194304.94  67.92
SO LOCATION  SITEC064  VOLUME  581086.29  4194305.06  67.92
SO LOCATION  SITEC065  VOLUME  581071.17  4194309.70  67.81
SO LOCATION  SITEC066  VOLUME  581076.17  4194309.81  67.87
SO LOCATION  SITEC067  VOLUME  581081.17  4194309.93  67.88
SO LOCATION  SITEC068  VOLUME  581086.17  4194310.05  67.89
SO LOCATION  SITEC069  VOLUME  581071.05  4194314.69  67.75
SO LOCATION  SITEC070  VOLUME  581076.05  4194314.81  67.82
SO LOCATION  SITEC071  VOLUME  581081.05  4194314.93  67.83
SO LOCATION  SITEC072  VOLUME  581086.05  4194315.05  67.86
SO LOCATION  SITEC073  VOLUME  581075.93  4194319.81  67.74
SO LOCATION  SITEC074  VOLUME  581080.93  4194319.93  67.78
SO LOCATION  SITEC075  VOLUME  581085.93  4194320.05  67.82
SO LOCATION  SITEC076  VOLUME  581080.81  4194324.93  67.71
SO LOCATION  SITEC077  VOLUME  581085.81  4194325.05  67.76
SO LOCATION  SITEC078  VOLUME  581080.69  4194329.93  67.49
SO LOCATION  SITEC079  VOLUME  581085.69  4194330.05  67.49
SO LOCATION  SITEC080  VOLUME  581085.57  4194335.05  67.24
SO LOCATION  ST001  VOLUME  581041.78  4194283.99  68.63
SO LOCATION  ST002  VOLUME  581046.78  4194284.10  68.43
SO LOCATION  ST003  VOLUME  581041.66  4194288.98  68.68
SO LOCATION  ST004  VOLUME  581046.66  4194289.10  68.48
SO LOCATION  ST005  VOLUME  581051.66  4194289.22  68.27
SO LOCATION  ST006  VOLUME  581046.54  4194294.10  68.49
```

```
SO LOCATION  ST007  VOLUME  581051.54  4194294.22  68.29
SO LOCATION  ST008  VOLUME  581056.53  4194294.34  68.10
SO LOCATION  ST009  VOLUME  581051.42  4194299.22  68.30
SO LOCATION  ST010  VOLUME  581056.41  4194299.34  68.12
SO LOCATION  ST011  VOLUME  581051.30  4194304.22  68.31
SO LOCATION  ST012  VOLUME  581056.30  4194304.34  68.12
SO LOCATION  ST013  VOLUME  581061.29  4194304.46  67.96
SO LOCATION  ST014  VOLUME  581056.18  4194309.34  68.11
SO LOCATION  ST015  VOLUME  581061.17  4194309.46  67.96
SO LOCATION  ST016  VOLUME  581066.17  4194309.58  67.85
SO LOCATION  ST017  VOLUME  581061.05  4194314.45  67.93
SO LOCATION  ST018  VOLUME  581066.05  4194314.57  67.85
SO LOCATION  ST019  VOLUME  581060.94  4194319.45  67.89
SO LOCATION  ST020  VOLUME  581065.93  4194319.57  67.82
SO LOCATION  ST021  VOLUME  581070.93  4194319.69  67.77
SO LOCATION  ST022  VOLUME  581065.81  4194324.57  67.78
SO LOCATION  ST023  VOLUME  581070.81  4194324.69  67.71
SO LOCATION  ST024  VOLUME  581075.81  4194324.81  67.65
SO LOCATION  ST025  VOLUME  581070.69  4194329.69  67.66
SO LOCATION  ST026  VOLUME  581075.69  4194329.81  67.58
SO LOCATION  ST027  VOLUME  581070.57  4194334.69  67.62
SO LOCATION  ST028  VOLUME  581075.57  4194334.81  67.53
SO LOCATION  ST029  VOLUME  581080.57  4194334.93  67.45
SO LOCATION  ST030  VOLUME  581065.46  4194339.57  67.64
SO LOCATION  ST031  VOLUME  581075.45  4194339.81  67.49
SO LOCATION  ST032  VOLUME  581080.45  4194339.93  67.41
SO LOCATION  ST033  VOLUME  581085.45  4194340.05  67.34
SO LOCATION  ST034  VOLUME  581080.33  4194344.92  67.39
SO LOCATION  ST035  VOLUME  581085.33  4194345.04  67.31
SO LOCATION  ST036  VOLUME  581070.21  4194349.68  67.50
SO LOCATION  ST037  VOLUME  581075.21  4194349.80  67.45
SO LOCATION  ST038  VOLUME  581080.21  4194349.92  67.38
SO LOCATION  ST039  VOLUME  581085.21  4194350.04  67.30
SO LOCATION  ST040  VOLUME  581090.21  4194350.16  67.22
SO LOCATION  ST041  VOLUME  581095.21  4194350.28  67.16
SO LOCATION  ST042  VOLUME  581075.09  4194354.80  67.44
SO LOCATION  ST043  VOLUME  581080.09  4194354.92  67.40
SO LOCATION  ST044  VOLUME  581085.09  4194355.04  67.35
SO LOCATION  ST045  VOLUME  581090.09  4194355.16  67.29
SO LOCATION  ST046  VOLUME  581095.09  4194355.28  67.23
SO LOCATION  ST047  VOLUME  581100.09  4194355.40  67.15
SO LOCATION  ST048  VOLUME  581105.09  4194355.52  67.10
SO LOCATION  ST049  VOLUME  581079.97  4194359.92  67.44
SO LOCATION  ST050  VOLUME  581084.97  4194360.04  67.42
SO LOCATION  ST051  VOLUME  581089.97  4194360.16  67.39
SO LOCATION  ST052  VOLUME  581094.97  4194360.28  67.32
SO LOCATION  ST053  VOLUME  581099.97  4194360.40  67.24
SO LOCATION  ST054  VOLUME  581104.97  4194360.52  67.18
SO LOCATION  ST055  VOLUME  581109.96  4194360.64  67.13
SO LOCATION  ST056  VOLUME  581079.85  4194364.92  67.58
SO LOCATION  ST057  VOLUME  581084.85  4194365.04  67.57
SO LOCATION  ST058  VOLUME  581089.85  4194365.16  67.55
SO LOCATION  ST059  VOLUME  581094.85  4194365.28  67.50
SO LOCATION  ST060  VOLUME  581099.85  4194365.40  67.43
```

```
SO LOCATION  ST061  VOLUME  581104.85  4194365.52  67.35
SO LOCATION  ST062  VOLUME  581109.84  4194365.64  67.26
SO LOCATION  ST063  VOLUME  581114.84  4194365.76  67.16
SO LOCATION  ST064  VOLUME  581084.73  4194370.04  67.72
SO LOCATION  ST065  VOLUME  581089.73  4194370.16  67.70
SO LOCATION  ST066  VOLUME  581094.73  4194370.28  67.67
SO LOCATION  ST067  VOLUME  581099.73  4194370.40  67.61
SO LOCATION  ST068  VOLUME  581104.73  4194370.52  67.52
SO LOCATION  ST069  VOLUME  581109.72  4194370.63  67.41
SO LOCATION  ST070  VOLUME  581114.72  4194370.75  67.27
SO LOCATION  ST071  VOLUME  581119.72  4194370.87  67.14
SO LOCATION  ST072  VOLUME  581089.61  4194375.16  67.80
SO LOCATION  ST073  VOLUME  581094.61  4194375.27  67.77
SO LOCATION  ST074  VOLUME  581099.61  4194375.39  67.72
SO LOCATION  ST075  VOLUME  581104.61  4194375.51  67.65
SO LOCATION  ST076  VOLUME  581109.61  4194375.63  67.56
SO LOCATION  ST077  VOLUME  581114.60  4194375.75  67.42
SO LOCATION  ST078  VOLUME  581119.60  4194375.87  67.28
SO LOCATION  ST079  VOLUME  581124.60  4194375.99  67.14
SO LOCATION  ST080  VOLUME  581084.49  4194380.03  67.92
SO LOCATION  ST081  VOLUME  581089.49  4194380.15  67.90
SO LOCATION  ST082  VOLUME  581094.49  4194380.27  67.87
SO LOCATION  ST083  VOLUME  581099.49  4194380.39  67.82
SO LOCATION  ST084  VOLUME  581104.49  4194380.51  67.76
SO LOCATION  ST085  VOLUME  581109.49  4194380.63  67.68
SO LOCATION  ST086  VOLUME  581114.48  4194380.75  67.56
SO LOCATION  ST087  VOLUME  581119.48  4194380.87  67.42
SO LOCATION  ST088  VOLUME  581124.48  4194380.99  67.28
SO LOCATION  ST089  VOLUME  581129.48  4194381.11  67.18
SO LOCATION  ST090  VOLUME  581084.37  4194385.03  68.00
SO LOCATION  ST091  VOLUME  581089.37  4194385.15  67.96
SO LOCATION  ST092  VOLUME  581094.37  4194385.27  67.91
SO LOCATION  ST093  VOLUME  581099.37  4194385.39  67.86
SO LOCATION  ST094  VOLUME  581104.37  4194385.51  67.78
SO LOCATION  ST095  VOLUME  581109.37  4194385.63  67.70
SO LOCATION  ST096  VOLUME  581114.36  4194385.75  67.61
SO LOCATION  ST097  VOLUME  581119.36  4194385.87  67.53
SO LOCATION  ST098  VOLUME  581124.36  4194385.99  67.44
SO LOCATION  ST099  VOLUME  581129.36  4194386.11  67.35
SO LOCATION  ST100  VOLUME  581134.36  4194386.23  67.28
SO LOCATION  ST101  VOLUME  581139.36  4194386.35  67.21
SO LOCATION  ST102  VOLUME  581084.25  4194390.03  68.08
SO LOCATION  ST103  VOLUME  581089.25  4194390.15  68.02
SO LOCATION  ST104  VOLUME  581094.25  4194390.27  67.96
SO LOCATION  ST105  VOLUME  581099.25  4194390.39  67.89
SO LOCATION  ST106  VOLUME  581104.25  4194390.51  67.80
SO LOCATION  ST107  VOLUME  581109.25  4194390.63  67.72
SO LOCATION  ST108  VOLUME  581114.25  4194390.75  67.67
SO LOCATION  ST109  VOLUME  581119.24  4194390.87  67.62
SO LOCATION  ST110  VOLUME  581124.24  4194390.99  67.58
SO LOCATION  ST111  VOLUME  581129.24  4194391.11  67.50
SO LOCATION  ST112  VOLUME  581134.24  4194391.23  67.42
SO LOCATION  ST113  VOLUME  581139.24  4194391.35  67.33
SO LOCATION  ST114  VOLUME  581144.24  4194391.47  67.26
```

```
SO LOCATION  ST115  VOLUME  581084.13  4194395.03  68.20
SO LOCATION  ST116  VOLUME  581089.13  4194395.15  68.11
SO LOCATION  ST117  VOLUME  581094.13  4194395.27  68.01
SO LOCATION  ST118  VOLUME  581099.13  4194395.39  67.91
SO LOCATION  ST119  VOLUME  581119.12  4194395.87  67.66
SO LOCATION  ST120  VOLUME  581124.12  4194395.99  67.60
SO LOCATION  ST121  VOLUME  581129.12  4194396.11  67.51
SO LOCATION  ST122  VOLUME  581134.12  4194396.23  67.42
SO LOCATION  ST123  VOLUME  581139.12  4194396.35  67.32
SO LOCATION  ST124  VOLUME  581144.12  4194396.46  67.24
SO LOCATION  ST125  VOLUME  581149.12  4194396.58  67.15
SO LOCATION  ST126  VOLUME  581154.11  4194396.70  67.07
SO LOCATION  ST127  VOLUME  581084.01  4194400.03  68.33
SO LOCATION  ST128  VOLUME  581089.01  4194400.15  68.20
SO LOCATION  ST129  VOLUME  581094.01  4194400.27  68.06
SO LOCATION  ST130  VOLUME  581124.00  4194400.98  67.62
SO LOCATION  ST131  VOLUME  581129.00  4194401.10  67.52
SO LOCATION  ST132  VOLUME  581134.00  4194401.22  67.43
SO LOCATION  ST133  VOLUME  581139.00  4194401.34  67.33
SO LOCATION  ST134  VOLUME  581144.00  4194401.46  67.23
SO LOCATION  ST135  VOLUME  581149.00  4194401.58  67.15
SO LOCATION  ST136  VOLUME  581153.99  4194401.70  67.09
SO LOCATION  ST137  VOLUME  581158.99  4194401.82  67.02
SO LOCATION  ST138  VOLUME  581163.99  4194401.94  66.94
SO LOCATION  ST139  VOLUME  581168.99  4194402.06  66.84
SO LOCATION  ST140  VOLUME  581083.90  4194405.03  68.38
SO LOCATION  ST141  VOLUME  581088.89  4194405.15  68.25
SO LOCATION  ST142  VOLUME  581123.88  4194405.98  67.65
SO LOCATION  ST143  VOLUME  581128.88  4194406.10  67.58
SO LOCATION  ST144  VOLUME  581133.88  4194406.22  67.51
SO LOCATION  ST145  VOLUME  581138.88  4194406.34  67.43
SO LOCATION  ST146  VOLUME  581143.88  4194406.46  67.34
SO LOCATION  ST147  VOLUME  581148.88  4194406.58  67.25
SO LOCATION  ST148  VOLUME  581153.88  4194406.70  67.16
SO LOCATION  ST149  VOLUME  581158.87  4194406.82  67.08
SO LOCATION  ST150  VOLUME  581163.87  4194406.94  66.98
SO LOCATION  ST151  VOLUME  581168.87  4194407.06  66.88
SO LOCATION  ST152  VOLUME  581173.87  4194407.18  66.78
SO LOCATION  ST153  VOLUME  581178.87  4194407.30  66.69
SO LOCATION  ST154  VOLUME  581083.78  4194410.03  68.42
SO LOCATION  ST155  VOLUME  581088.77  4194410.15  68.30
SO LOCATION  ST156  VOLUME  581128.76  4194411.10  67.64
SO LOCATION  ST157  VOLUME  581133.76  4194411.22  67.59
SO LOCATION  ST158  VOLUME  581138.76  4194411.34  67.53
SO LOCATION  ST159  VOLUME  581143.76  4194411.46  67.44
SO LOCATION  ST160  VOLUME  581148.76  4194411.58  67.34
SO LOCATION  ST161  VOLUME  581153.76  4194411.70  67.24
SO LOCATION  ST162  VOLUME  581158.75  4194411.82  67.13
SO LOCATION  ST163  VOLUME  581163.75  4194411.94  67.02
SO LOCATION  ST164  VOLUME  581168.75  4194412.06  66.92
SO LOCATION  ST165  VOLUME  581173.75  4194412.18  66.83
SO LOCATION  ST166  VOLUME  581178.75  4194412.30  66.74
SO LOCATION  ST167  VOLUME  581183.75  4194412.42  66.64
SO LOCATION  ST168  VOLUME  581188.75  4194412.54  66.54
```

```
SO LOCATION  ST169  VOLUME  581083.66  4194415.02  68.48
SO LOCATION  ST170  VOLUME  581088.65  4194415.14  68.33
SO LOCATION  ST171  VOLUME  581143.64  4194416.46  67.49
SO LOCATION  ST172  VOLUME  581148.64  4194416.58  67.39
SO LOCATION  ST173  VOLUME  581153.64  4194416.70  67.28
SO LOCATION  ST174  VOLUME  581158.63  4194416.82  67.17
SO LOCATION  ST175  VOLUME  581163.63  4194416.94  67.05
SO LOCATION  ST176  VOLUME  581168.63  4194417.06  66.95
SO LOCATION  ST177  VOLUME  581173.63  4194417.18  66.86
SO LOCATION  ST178  VOLUME  581178.63  4194417.30  66.79
SO LOCATION  ST179  VOLUME  581183.63  4194417.42  66.70
SO LOCATION  ST180  VOLUME  581188.63  4194417.54  66.60
SO LOCATION  ST181  VOLUME  581193.62  4194417.65  66.48
SO LOCATION  ST182  VOLUME  581198.62  4194417.77  66.35
SO LOCATION  ST183  VOLUME  581088.53  4194420.14  68.37
SO LOCATION  ST184  VOLUME  581153.52  4194421.70  67.32
SO LOCATION  ST185  VOLUME  581158.51  4194421.82  67.21
SO LOCATION  ST186  VOLUME  581163.51  4194421.94  67.08
SO LOCATION  ST187  VOLUME  581168.51  4194422.06  66.98
SO LOCATION  ST188  VOLUME  581173.51  4194422.18  66.89
SO LOCATION  ST189  VOLUME  581178.51  4194422.29  66.83
SO LOCATION  ST190  VOLUME  581183.51  4194422.41  66.75
SO LOCATION  ST191  VOLUME  581188.51  4194422.53  66.65
SO LOCATION  ST192  VOLUME  581193.50  4194422.65  66.54
SO LOCATION  ST193  VOLUME  581198.50  4194422.77  66.43
SO LOCATION  ST194  VOLUME  581203.50  4194422.89  66.30
SO LOCATION  ST195  VOLUME  581208.50  4194423.01  66.20
SO LOCATION  ST196  VOLUME  581213.50  4194423.13  66.12
SO LOCATION  ST197  VOLUME  581088.42  4194425.14  68.50
SO LOCATION  ST198  VOLUME  581163.39  4194426.93  67.14
SO LOCATION  ST199  VOLUME  581168.39  4194427.05  67.06
SO LOCATION  ST200  VOLUME  581173.39  4194427.17  66.98
SO LOCATION  ST201  VOLUME  581178.39  4194427.29  66.90
SO LOCATION  ST202  VOLUME  581183.39  4194427.41  66.80
SO LOCATION  ST203  VOLUME  581188.39  4194427.53  66.69
SO LOCATION  ST204  VOLUME  581193.39  4194427.65  66.56
SO LOCATION  ST205  VOLUME  581198.38  4194427.77  66.45
SO LOCATION  ST206  VOLUME  581203.38  4194427.89  66.35
SO LOCATION  ST207  VOLUME  581208.38  4194428.01  66.28
SO LOCATION  ST208  VOLUME  581213.38  4194428.13  66.22
SO LOCATION  ST209  VOLUME  581218.38  4194428.25  66.16
SO LOCATION  ST210  VOLUME  581223.38  4194428.37  66.08
SO LOCATION  ST211  VOLUME  581088.30  4194430.14  68.65
SO LOCATION  ST212  VOLUME  581178.27  4194432.29  66.96
SO LOCATION  ST213  VOLUME  581183.27  4194432.41  66.84
SO LOCATION  ST214  VOLUME  581188.27  4194432.53  66.72
SO LOCATION  ST215  VOLUME  581193.27  4194432.65  66.59
SO LOCATION  ST216  VOLUME  581198.26  4194432.77  66.47
SO LOCATION  ST217  VOLUME  581203.26  4194432.89  66.40
SO LOCATION  ST218  VOLUME  581208.26  4194433.01  66.35
SO LOCATION  ST219  VOLUME  581213.26  4194433.13  66.31
SO LOCATION  ST220  VOLUME  581218.26  4194433.25  66.23
SO LOCATION  ST221  VOLUME  581223.26  4194433.37  66.12
SO LOCATION  ST222  VOLUME  581228.26  4194433.49  65.99
```

```
SO LOCATION  ST223  VOLUME  581233.25  4194433.61  65.84
SO LOCATION  ST224  VOLUME  581088.18  4194435.14  68.76
SO LOCATION  ST225  VOLUME  581188.15  4194437.53  66.74
SO LOCATION  ST226  VOLUME  581193.15  4194437.65  66.62
SO LOCATION  ST227  VOLUME  581198.14  4194437.77  66.52
SO LOCATION  ST228  VOLUME  581203.14  4194437.89  66.46
SO LOCATION  ST229  VOLUME  581208.14  4194438.01  66.40
SO LOCATION  ST230  VOLUME  581213.14  4194438.13  66.33
SO LOCATION  ST231  VOLUME  581218.14  4194438.25  66.22
SO LOCATION  ST232  VOLUME  581223.14  4194438.37  66.10
SO LOCATION  ST233  VOLUME  581228.14  4194438.49  65.97
SO LOCATION  ST234  VOLUME  581233.13  4194438.61  65.87
SO LOCATION  ST235  VOLUME  581238.13  4194438.73  65.78
SO LOCATION  ST236  VOLUME  581243.13  4194438.84  65.73
SO LOCATION  ST237  VOLUME  581088.06  4194440.14  68.86
SO LOCATION  ST238  VOLUME  581198.03  4194442.77  66.56
SO LOCATION  ST239  VOLUME  581203.02  4194442.89  66.51
SO LOCATION  ST240  VOLUME  581208.02  4194443.01  66.44
SO LOCATION  ST241  VOLUME  581213.02  4194443.13  66.36
SO LOCATION  ST242  VOLUME  581218.02  4194443.25  66.22
SO LOCATION  ST243  VOLUME  581223.02  4194443.37  66.09
SO LOCATION  ST244  VOLUME  581228.02  4194443.48  65.97
SO LOCATION  ST245  VOLUME  581233.02  4194443.60  65.90
SO LOCATION  ST246  VOLUME  581238.01  4194443.72  65.86
SO LOCATION  ST247  VOLUME  581243.01  4194443.84  65.84
SO LOCATION  ST248  VOLUME  581248.01  4194443.96  65.81
SO LOCATION  ST249  VOLUME  581253.01  4194444.08  65.79
SO LOCATION  ST250  VOLUME  581087.94  4194445.14  68.94
SO LOCATION  ST251  VOLUME  581212.90  4194448.12  66.37
SO LOCATION  ST252  VOLUME  581217.90  4194448.24  66.25
SO LOCATION  ST253  VOLUME  581222.90  4194448.36  66.13
SO LOCATION  ST254  VOLUME  581227.90  4194448.48  66.03
SO LOCATION  ST255  VOLUME  581232.90  4194448.60  65.98
SO LOCATION  ST256  VOLUME  581237.89  4194448.72  65.94
SO LOCATION  ST257  VOLUME  581242.89  4194448.84  65.93
SO LOCATION  ST258  VOLUME  581247.89  4194448.96  65.92
SO LOCATION  ST259  VOLUME  581252.89  4194449.08  65.91
SO LOCATION  ST260  VOLUME  581257.89  4194449.20  65.90
SO LOCATION  ST261  VOLUME  581087.82  4194450.13  69.03
SO LOCATION  ST262  VOLUME  581222.78  4194453.36  66.17
SO LOCATION  ST263  VOLUME  581227.78  4194453.48  66.10
SO LOCATION  ST264  VOLUME  581232.78  4194453.60  66.06
SO LOCATION  ST265  VOLUME  581237.77  4194453.72  66.03
SO LOCATION  ST266  VOLUME  581242.77  4194453.84  66.03
SO LOCATION  ST267  VOLUME  581247.77  4194453.96  66.04
SO LOCATION  ST268  VOLUME  581252.77  4194454.08  66.04
SO LOCATION  ST269  VOLUME  581087.70  4194455.13  69.04
SO LOCATION  ST270  VOLUME  581232.66  4194458.60  66.18
SO LOCATION  ST271  VOLUME  581237.65  4194458.72  66.16
SO LOCATION  ST272  VOLUME  581242.65  4194458.84  66.17
SO LOCATION  ST273  VOLUME  581247.65  4194458.96  66.19
SO LOCATION  ST274  VOLUME  581252.65  4194459.08  66.21
SO LOCATION  ST275  VOLUME  581087.58  4194460.13  69.01
SO LOCATION  ST276  VOLUME  581242.53  4194463.84  66.32
```

```
SO LOCATION  ST277  VOLUME  581247.53  4194463.96  66.34
SO LOCATION  ST278  VOLUME  581087.46  4194465.13  68.92
SO LOCATION  ST279  VOLUME  581087.34  4194470.13  68.80
SO LOCATION  ST280  VOLUME  581087.22  4194475.13  68.65
SO LOCATION  ST281  VOLUME  581087.10  4194480.13  68.49
SO LOCATION  ST282  VOLUME  581086.98  4194485.12  68.31
SO LOCATION  ST283  VOLUME  581086.86  4194490.12  68.12
SO SRCPARAM  SITEA001  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA002  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA003  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA004  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA005  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA006  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA007  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA008  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA009  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA010  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA011  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA012  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA013  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA014  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA015  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA016  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA017  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA018  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA019  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA020  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA021  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA022  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA023  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA024  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA025  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA026  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA027  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA028  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA029  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA030  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA031  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA032  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA033  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA034  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA035  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA036  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA037  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA038  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA039  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA040  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA041  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA042  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA043  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA044  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA045  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA046  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA047  3.773585E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEA048  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA049  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA050  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA051  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA052  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA053  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA054  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA055  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA056  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA057  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA058  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA059  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA060  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA061  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA062  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA063  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA064  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA065  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA066  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA067  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA068  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA069  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA070  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA071  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA072  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA073  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA074  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA075  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA076  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA077  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA078  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA079  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA080  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA081  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA082  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA083  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA084  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA085  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA086  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA087  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA088  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA089  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA090  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA091  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA092  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA093  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA094  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA095  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA096  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA097  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA098  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA099  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA100  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA101  3.773585E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEA102  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA103  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA104  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA105  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA106  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA107  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA108  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA109  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA110  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA111  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA112  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA113  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA114  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA115  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA116  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA117  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA118  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA119  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA120  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA121  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA122  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA123  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA124  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA125  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA126  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA127  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA128  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA129  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA130  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA131  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA132  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA133  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA134  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA135  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA136  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA137  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA138  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA139  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA140  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA141  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA142  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA143  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA144  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA145  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA146  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA147  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA148  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA149  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA150  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA151  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA152  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA153  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA154  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA155  3.773585E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEA156  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA157  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA158  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA159  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA160  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA161  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA162  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA163  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA164  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA165  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA166  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA167  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA168  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA169  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA170  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA171  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA172  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA173  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA174  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA175  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA176  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA177  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA178  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA179  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA180  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA181  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA182  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA183  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA184  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA185  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA186  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA187  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA188  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA189  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA190  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA191  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA192  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA193  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA194  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA195  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA196  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA197  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA198  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA199  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA200  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA201  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA202  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA203  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA204  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA205  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA206  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA207  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA208  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA209  3.773585E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEA210  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA211  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA212  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA213  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA214  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA215  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA216  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA217  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA218  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA219  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA220  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA221  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA222  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA223  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA224  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA225  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA226  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA227  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA228  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA229  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA230  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA231  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA232  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA233  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA234  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA235  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA236  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA237  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA238  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA239  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA240  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA241  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA242  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA243  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA244  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA245  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA246  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA247  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA248  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA249  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA250  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA251  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA252  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA253  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA254  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA255  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA256  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA257  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA258  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA259  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA260  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA261  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA262  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA263  3.773585E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEA264  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEA265  3.773585E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB001  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB002  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB003  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB004  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB005  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB006  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB007  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB008  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB009  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB010  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB011  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB012  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB013  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB014  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB015  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB016  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB017  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB018  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB019  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB020  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB021  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB022  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB023  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB024  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB025  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB026  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB027  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB028  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB029  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB030  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB031  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB032  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB033  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB034  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB035  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB036  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB037  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB038  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB039  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB040  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB041  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB042  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB043  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB044  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB045  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB046  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB047  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB048  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB049  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB050  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB051  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB052  4.115226E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEB053  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB054  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB055  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB056  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB057  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB058  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB059  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB060  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB061  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB062  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB063  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB064  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB065  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB066  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB067  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB068  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB069  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB070  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB071  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB072  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB073  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB074  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB075  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB076  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB077  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB078  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB079  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB080  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB081  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB082  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB083  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB084  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB085  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB086  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB087  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB088  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB089  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB090  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB091  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB092  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB093  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB094  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB095  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB096  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB097  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB098  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB099  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB100  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB101  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB102  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB103  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB104  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB105  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB106  4.115226E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEB107  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB108  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB109  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB110  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB111  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB112  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB113  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB114  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB115  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB116  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB117  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB118  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB119  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB120  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB121  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB122  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB123  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB124  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB125  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB126  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB127  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB128  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB129  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB130  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB131  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB132  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB133  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB134  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB135  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB136  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB137  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB138  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB139  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB140  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB141  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB142  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB143  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB144  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB145  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB146  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB147  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB148  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB149  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB150  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB151  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB152  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB153  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB154  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB155  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB156  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB157  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB158  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB159  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB160  4.115226E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEB161  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB162  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB163  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB164  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB165  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB166  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB167  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB168  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB169  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB170  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB171  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB172  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB173  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB174  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB175  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB176  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB177  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB178  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB179  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB180  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB181  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB182  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB183  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB184  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB185  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB186  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB187  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB188  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB189  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB190  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB191  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB192  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB193  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB194  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB195  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB196  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB197  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB198  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB199  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB200  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB201  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB202  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB203  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB204  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB205  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB206  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB207  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB208  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB209  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB210  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB211  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB212  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB213  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB214  4.115226E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEB215  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB216  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB217  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB218  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB219  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB220  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB221  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB222  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB223  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB224  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB225  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB226  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB227  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB228  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB229  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB230  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB231  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB232  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB233  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB234  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB235  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB236  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB237  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB238  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB239  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB240  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB241  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB242  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEB243  4.115226E-03  5.0  2.33  1.40
SO SRCPARAM  SITEC001  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC002  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC003  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC004  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC005  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC006  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC007  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC008  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC009  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC010  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC011  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC012  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC013  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC014  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC015  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC016  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC017  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC018  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC019  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC020  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC021  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC022  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC023  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC024  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC025  1.250000E-02  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEC026  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC027  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC028  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC029  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC030  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC031  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC032  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC033  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC034  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC035  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC036  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC037  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC038  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC039  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC040  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC041  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC042  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC043  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC044  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC045  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC046  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC047  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC048  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC049  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC050  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC051  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC052  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC053  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC054  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC055  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC056  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC057  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC058  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC059  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC060  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC061  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC062  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC063  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC064  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC065  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC066  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC067  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC068  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC069  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC070  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC071  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC072  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC073  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC074  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC075  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC076  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC077  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC078  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  SITEC079  1.250000E-02  5.0  2.33  1.40
```

```
SO SRCPARAM  SITEC080  1.250000E-02  5.0  2.33  1.40
SO SRCPARAM  ST001  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST002  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST003  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST004  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST005  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST006  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST007  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST008  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST009  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST010  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST011  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST012  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST013  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST014  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST015  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST016  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST017  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST018  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST019  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST020  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST021  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST022  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST023  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST024  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST025  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST026  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST027  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST028  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST029  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST030  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST031  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST032  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST033  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST034  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST035  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST036  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST037  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST038  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST039  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST040  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST041  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST042  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST043  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST044  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST045  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST046  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST047  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST048  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST049  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST050  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST051  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST052  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST053  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  ST054  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST055  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST056  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST057  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST058  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST059  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST060  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST061  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST062  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST063  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST064  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST065  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST066  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST067  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST068  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST069  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST070  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST071  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST072  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST073  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST074  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST075  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST076  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST077  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST078  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST079  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST080  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST081  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST082  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST083  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST084  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST085  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST086  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST087  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST088  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST089  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST090  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST091  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST092  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST093  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST094  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST095  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST096  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST097  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST098  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST099  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST100  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST101  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST102  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST103  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST104  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST105  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST106  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST107  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  ST108  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST109  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST110  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST111  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST112  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST113  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST114  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST115  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST116  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST117  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST118  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST119  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST120  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST121  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST122  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST123  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST124  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST125  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST126  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST127  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST128  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST129  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST130  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST131  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST132  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST133  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST134  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST135  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST136  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST137  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST138  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST139  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST140  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST141  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST142  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST143  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST144  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST145  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST146  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST147  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST148  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST149  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST150  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST151  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST152  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST153  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST154  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST155  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST156  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST157  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST158  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST159  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST160  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST161  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  ST162  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST163  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST164  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST165  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST166  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST167  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST168  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST169  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST170  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST171  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST172  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST173  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST174  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST175  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST176  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST177  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST178  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST179  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST180  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST181  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST182  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST183  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST184  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST185  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST186  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST187  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST188  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST189  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST190  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST191  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST192  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST193  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST194  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST195  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST196  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST197  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST198  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST199  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST200  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST201  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST202  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST203  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST204  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST205  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST206  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST207  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST208  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST209  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST210  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST211  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST212  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST213  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST214  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST215  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  ST216  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST217  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST218  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST219  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST220  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST221  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST222  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST223  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST224  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST225  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST226  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST227  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST228  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST229  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST230  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST231  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST232  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST233  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST234  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST235  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST236  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST237  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST238  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST239  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST240  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST241  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST242  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST243  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST244  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST245  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST246  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST247  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST248  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST249  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST250  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST251  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST252  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST253  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST254  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST255  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST256  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST257  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST258  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST259  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST260  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST261  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST262  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST263  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST264  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST265  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST266  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST267  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST268  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST269  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCPARAM  ST270  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST271  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST272  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST273  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST274  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST275  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST276  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST277  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST278  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST279  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST280  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST281  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST282  3.533569E-03  5.0  2.33  1.40
SO SRCPARAM  ST283  3.533569E-03  5.0  2.33  1.40
```

```
SO SRCGROUP  SITEA    SITEA001-SITEA265
SO SRCGROUP  SITEB    SITEB001-SITEB243
SO SRCGROUP  SITEC    SITEC001-SITEC080
SO SRCGROUP  STREETS  ST001-ST283
```

APPENDIX C
STATIONARY SOURCE IMPACT EVALUATION

Appendix C
Stationary Source Impact Evaluation
Hall Saranap
Walnut Creek, California

Pollutant	Emissions from Hull's Walnut Creek Chapel		Dispersion Factor		Concentration	Cancer Potency Factor	Chronic REL	Cancer Risk	Chronic Hazard Index
	(lb/day)	(g/s)	1-Hour	Annual	($\mu g/m^3$)	$(mg/kg\text{-}day)^{-1}$	($\mu g/m^3$)	(in a million)	
2,3,7,8-Tetrachlorodibenzo-P-Dioxin	1.3E-09	6.9E-12	161.6	12.928	9.0E-11	130000	0.00004	9.4E-03	2.2E-06
Acetaldehyde	1.2E-04	6.5E-07			8.3E-06	0.01	140	6.7E-05	6.0E-08
Arsenic And Compounds (Inorganic)	2.8E-05	1.5E-07			1.9E-06	12	0.015	1.9E-02	1.3E-04
Benzene	3.0E-05	1.6E-07			2.0E-06	0.1	3	1.6E-04	6.8E-07
Beryllium And Compounds	1.3E-06	6.9E-09			9.0E-08	8.4	0.007	6.0E-04	1.3E-05
Cadmium And Compounds	1.0E-05	5.5E-08			7.1E-07	15	0.02	8.5E-03	3.5E-05
Chromium 6	1.3E-05	6.9E-08			9.0E-07	510	0.2	3.7E-01	4.5E-06
Formaldehyde	3.8E-04	2.0E-06			2.6E-05	0.021	9	4.4E-04	2.9E-06
Hydrochloric Acid (Hydrogen Chloride)	6.8E-02	3.6E-04			4.6E-03	--	9	--	5.1E-04
Hydrogen Fluoride (Hydrofluoric Acid)	6.2E-04	3.3E-06			4.2E-05	--	14	--	3.0E-06
Lead And Compounds (Inorganic)	6.2E-05	3.3E-07			4.2E-06	0.042	--	1.4E-04	--
Mercury And Compounds (Inorganic)	3.2E-03	1.7E-05			2.2E-04	--	0.03	--	7.3E-03
Nickel And Compounds	3.6E-05	1.9E-07			2.4E-06	0.91	0.014	1.8E-03	1.7E-04
Polycyclic Aromatic Hydrocarbon (Pah) (As B(A)P-Equiv)	4.6E-08	2.4E-10			3.1E-09	3.9	--	9.9E-06	--
Selenium And Compounds	4.2E-05	2.2E-07			2.8E-06	--	20	--	1.4E-07
Sulfur Dioxide	2.7E-03	1.4E-05			1.8E-04	--	--	--	--
Toluene	1.6E-05	8.3E-08			1.1E-06	--	300	--	3.6E-09
$PM_{2.5}$	1.4E-02	7.5E-05			9.7E-04	--	--	--	--
							Total	**0.41**	**0.008**

Notes:
1. Impact from the Hull's Walnut Creek Chapel estimated using SCREEN3 and emissions obtained from BAAQMD.
2. Daily emissions obtained from BAAQMD and converted to g/s.
3. 1-hour dispersion factor found using SCREEN3. Source parameters for a crematory with afternburner was used (B&L). The SCREEN3 output is shown in the subsequent page. Annual dispersion factor assumes the annual concentration is 8% of the 1 hour concentration, consistent with EPA guidance (USEPA 1992).
4. Concentration is the product of the emission rate and dispersion factor.
5. All toxicity values from Cal/EPA (2015).
6. Cancer risk and chronic HI is calculated consistent with the methods described in the report. Cancer risk assumes an intake factor of 0.804 m3/kg-day, which assumes a 30 year exposure, breathing rates consistent with 2015 OEHHA guidance, and age sensitivity factors.

References:
B&L Cremation Systems, Inc. N-20 Human Crematory. Available at: http://www.blcremationsystems.com/N20.html
California Environmental Protection Agency (Cal/EPA). 2015. OEHHA/ARB Consolidated Table of Approved Risk Assessment Health Values. May. http://www.arb.ca.gov/toxics/healthval/contable.pdf
Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February.
United States Environmental Protection Agency (USEPA). 1992.Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised. EPA-454/R-92-019. October. Available at: http://www.epa.gov/oppt/exposure/presentations/efast/usepa_1992b_sp_for_estim_aqi_of_ss.pdf.

```
                                                                    04/06/15
                                                                    10:07:58
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

Risk Screening - Hull's Walnut Creek Chapel

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     1.000000
   STACK HEIGHT (M)       =       5.4900
   STK INSIDE DIAM (M)    =       0.6096
   STK EXIT VELOCITY (M/S)=       4.0425
   STK GAS EXIT TEMP (K)  =    1088.7061
   AMBIENT AIR TEMP (K)   =     293.0000
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        URBAN
   BUILDING HEIGHT (M)    =       0.0000
   MIN HORIZ BLDG DIM (M) =       0.0000
   MAX HORIZ BLDG DIM (M) =       0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   2500.0000     (ACFM)

BUOY. FLUX =    2.692 M**4/S**3;  MOM. FLUX =    0.409 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   119.    161.6        4     3.5    3.5  1120.0   17.93   18.94   16.76    NO
   200.    109.6        4     2.0    2.0   640.0   28.00   31.46   27.95    NO
   300.    88.04        6     1.0    1.0 10000.0   39.80   32.69   22.21    NO
   400.    95.22        6     1.0    1.0 10000.0   39.80   42.01   27.13    NO
   500.    89.39        6     1.0    1.0 10000.0   39.80   51.16   31.79    NO
   600.    79.97        6     1.0    1.0 10000.0   39.80   60.07   36.18    NO
   700.    70.54        6     1.0    1.0 10000.0   39.80   68.76   40.32    NO
   800.    62.17        6     1.0    1.0 10000.0   39.80   77.22   44.25    NO
   900.    55.03        6     1.0    1.0 10000.0   39.80   85.46   47.98    NO
  1000.    49.03        6     1.0    1.0 10000.0   39.80   93.48   51.54    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND   119. M:
   119.    161.6        4     3.5    3.5  1120.0   17.93   18.94   16.76    NO
```

```
 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ***************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ***************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   ---------   -------
SIMPLE TERRAIN       161.6          119.        0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

APPENDIX D
CAL3QHCR MODELING FILES

CAL3QHCR Model Files Guide

- CAL3QHCR only accepts 60 Receptors. Thus, for each roadway and pollutant, multiple models were run where the only change is the receptors.
- This appendix contains the input file for each roadway and pollutant and for a representative receptor set. And all the receptors modeled are presented. More models were run than shown in this appendix, but the only difference the receptors.

Eastbound 24 to Northbound 680

```
'EB24toNB680, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_46                                ' 'AG' 581361.08 4194663.74 581411.95 4194675.15
-5.00   18.50
    2 1
'Link_47                                ' 'AG' 581324.41 4194660.38 581361.08 4194663.74
-2.12   18.50
    3 1
'Link_48                                ' 'AG' 581283.27 4194661.32 581324.41 4194660.38
-0.34   17.00
    4 1
'Link_49                                ' 'AG' 581244.77 4194665.30 581283.27 4194661.32
0.54   17.00
    5 1
'Link_50                                ' 'AG' 581213.31 4194671.04 581244.77 4194665.30
1.24   17.00
    6 1
'Link_51                                ' 'AG' 581184.20 4194677.86 581213.31 4194671.04
2.38   17.00
    7 1
'Link_52                                ' 'AG' 581118.32 4194699.55 581184.20 4194677.86
4.78   17.00
    8 1
'Link_53                                ' 'AG' 581082.80 4194711.67 581118.32 4194699.55
6.37   17.00
    9 1
'Link_54                                ' 'AG' 581040.32 4194725.88 581082.80 4194711.67
6.62   17.00
    10 1
'Link_55                                ' 'AG' 581011.67 4194735.37 581040.32 4194725.88
7.20   17.00
    11 1
'Link_56                                ' 'AG' 580978.40 4194747.59 581011.67 4194735.37
9.90   17.00
    12 1
'Link_57                                ' 'AG' 580948.01 4194757.48 580978.40 4194747.59
10.00   17.00
 1     0.00
      1   627.41 75.13
      2   627.41 75.13
      3   627.41 75.13
      4   627.41 75.13
```

```
     5   627.41 75.13
     6   627.41 75.13
     7   627.41 75.13
     8   627.41 75.13
     9   627.41 75.13
    10   627.41 75.13
    11   627.41 75.13
    12   627.41 75.13
2     0.00
     1   203.32 76.69
     2   203.32 76.69
     3   203.32 76.69
     4   203.32 76.69
     5   203.32 76.69
     6   203.32 76.69
     7   203.32 76.69
     8   203.32 76.69
     9   203.32 76.69
    10   203.32 76.69
    11   203.32 76.69
    12   203.32 76.69
3     0.00
     1   199.78 112.31
     2   199.78 112.31
     3   199.78 112.31
     4   199.78 112.31
     5   199.78 112.31
     6   199.78 112.31
     7   199.78 112.31
     8   199.78 112.31
     9   199.78 112.31
    10   199.78 112.31
    11   199.78 112.31
    12   199.78 112.31
4     0.00
     1    93.37 83.28
     2    93.37 83.28
     3    93.37 83.28
     4    93.37 83.28
     5    93.37 83.28
     6    93.37 83.28
     7    93.37 83.28
     8    93.37 83.28
     9    93.37 83.28
    10    93.37 83.28
    11    93.37 83.28
    12    93.37 83.28
5     0.00
     1   264.15 81.29
     2   264.15 81.29
     3   264.15 81.29
     4   264.15 81.29
     5   264.15 81.29
     6   264.15 81.29
```

```
      7   264.15 81.29
      8   264.15 81.29
      9   264.15 81.29
     10   264.15 81.29
     11   264.15 81.29
     12   264.15 81.29
 6     0.00
      1   487.73 81.93
      2   487.73 81.93
      3   487.73 81.93
      4   487.73 81.93
      5   487.73 81.93
      6   487.73 81.93
      7   487.73 81.93
      8   487.73 81.93
      9   487.73 81.93
     10   487.73 81.93
     11   487.73 81.93
     12   487.73 81.93
 7     0.00
      1  2214.03 74.71
      2  2214.03 74.71
      3  2214.03 74.71
      4  2214.03 74.71
      5  2214.03 74.71
      6  2214.03 74.71
      7  2214.03 74.71
      8  2214.03 74.71
      9  2214.03 74.71
     10  2214.03 74.71
     11  2214.03 74.71
     12  2214.03 74.71
 8     0.00
      1  4699.68 74.64
      2  4699.68 74.64
      3  4699.68 74.64
      4  4699.68 74.64
      5  4699.68 74.64
      6  4699.68 74.64
      7  4699.68 74.64
      8  4699.68 74.64
      9  4699.68 74.64
     10  4699.68 74.64
     11  4699.68 74.64
     12  4699.68 74.64
 9     0.00
      1  4253.31 77.22
      2  4253.31 77.22
      3  4253.31 77.22
      4  4253.31 77.22
      5  4253.31 77.22
      6  4253.31 77.22
      7  4253.31 77.22
      8  4253.31 77.22
```

```
     9  4253.31 77.22
    10  4253.31 77.22
    11  4253.31 77.22
    12  4253.31 77.22
10     0.00
     1  2552.00 78.00
     2  2552.00 78.00
     3  2552.00 78.00
     4  2552.00 78.00
     5  2552.00 78.00
     6  2552.00 78.00
     7  2552.00 78.00
     8  2552.00 78.00
     9  2552.00 78.00
    10  2552.00 78.00
    11  2552.00 78.00
    12  2552.00 78.00
11     0.00
     1  2751.75 77.64
     2  2751.75 77.64
     3  2751.75 77.64
     4  2751.75 77.64
     5  2751.75 77.64
     6  2751.75 77.64
     7  2751.75 77.64
     8  2751.75 77.64
     9  2751.75 77.64
    10  2751.75 77.64
    11  2751.75 77.64
    12  2751.75 77.64
12     0.00
     1  3487.15 76.53
     2  3487.15 76.53
     3  3487.15 76.53
     4  3487.15 76.53
     5  3487.15 76.53
     6  3487.15 76.53
     7  3487.15 76.53
     8  3487.15 76.53
     9  3487.15 76.53
    10  3487.15 76.53
    11  3487.15 76.53
    12  3487.15 76.53
13     0.00
     1  3670.00 75.64
     2  3670.00 75.64
     3  3670.00 75.64
     4  3670.00 75.64
     5  3670.00 75.64
     6  3670.00 75.64
     7  3670.00 75.64
     8  3670.00 75.64
     9  3670.00 75.64
    10  3670.00 75.64
```

```
    11  3670.00 75.64
    12  3670.00 75.64
14     0.00
     1  3600.83 76.37
     2  3600.83 76.37
     3  3600.83 76.37
     4  3600.83 76.37
     5  3600.83 76.37
     6  3600.83 76.37
     7  3600.83 76.37
     8  3600.83 76.37
     9  3600.83 76.37
    10  3600.83 76.37
    11  3600.83 76.37
    12  3600.83 76.37
15     0.00
     1  4220.26 75.42
     2  4220.26 75.42
     3  4220.26 75.42
     4  4220.26 75.42
     5  4220.26 75.42
     6  4220.26 75.42
     7  4220.26 75.42
     8  4220.26 75.42
     9  4220.26 75.42
    10  4220.26 75.42
    11  4220.26 75.42
    12  4220.26 75.42
16     0.00
     1  4331.74 76.07
     2  4331.74 76.07
     3  4331.74 76.07
     4  4331.74 76.07
     5  4331.74 76.07
     6  4331.74 76.07
     7  4331.74 76.07
     8  4331.74 76.07
     9  4331.74 76.07
    10  4331.74 76.07
    11  4331.74 76.07
    12  4331.74 76.07
17     0.00
     1  4462.91 78.19
     2  4462.91 78.19
     3  4462.91 78.19
     4  4462.91 78.19
     5  4462.91 78.19
     6  4462.91 78.19
     7  4462.91 78.19
     8  4462.91 78.19
     9  4462.91 78.19
    10  4462.91 78.19
    11  4462.91 78.19
    12  4462.91 78.19
```

```
18     0.00
     1  4978.66 75.97
     2  4978.66 75.97
     3  4978.66 75.97
     4  4978.66 75.97
     5  4978.66 75.97
     6  4978.66 75.97
     7  4978.66 75.97
     8  4978.66 75.97
     9  4978.66 75.97
    10  4978.66 75.97
    11  4978.66 75.97
    12  4978.66 75.97
19     0.00
     1  3466.07 75.10
     2  3466.07 75.10
     3  3466.07 75.10
     4  3466.07 75.10
     5  3466.07 75.10
     6  3466.07 75.10
     7  3466.07 75.10
     8  3466.07 75.10
     9  3466.07 75.10
    10  3466.07 75.10
    11  3466.07 75.10
    12  3466.07 75.10
20     0.00
     1  2615.41 75.14
     2  2615.41 75.14
     3  2615.41 75.14
     4  2615.41 75.14
     5  2615.41 75.14
     6  2615.41 75.14
     7  2615.41 75.14
     8  2615.41 75.14
     9  2615.41 75.14
    10  2615.41 75.14
    11  2615.41 75.14
    12  2615.41 75.14
21     0.00
     1  1946.52 74.67
     2  1946.52 74.67
     3  1946.52 74.67
     4  1946.52 74.67
     5  1946.52 74.67
     6  1946.52 74.67
     7  1946.52 74.67
     8  1946.52 74.67
     9  1946.52 74.67
    10  1946.52 74.67
    11  1946.52 74.67
    12  1946.52 74.67
22     0.00
     1  1950.14 74.52
```

```
     2  1950.14 74.52
     3  1950.14 74.52
     4  1950.14 74.52
     5  1950.14 74.52
     6  1950.14 74.52
     7  1950.14 74.52
     8  1950.14 74.52
     9  1950.14 74.52
    10  1950.14 74.52
    11  1950.14 74.52
    12  1950.14 74.52
23     0.00
     1  1466.15 75.06
     2  1466.15 75.06
     3  1466.15 75.06
     4  1466.15 75.06
     5  1466.15 75.06
     6  1466.15 75.06
     7  1466.15 75.06
     8  1466.15 75.06
     9  1466.15 75.06
    10  1466.15 75.06
    11  1466.15 75.06
    12  1466.15 75.06
24     0.00
     1  1135.76 76.00
     2  1135.76 76.00
     3  1135.76 76.00
     4  1135.76 76.00
     5  1135.76 76.00
     6  1135.76 76.00
     7  1135.76 76.00
     8  1135.76 76.00
     9  1135.76 76.00
    10  1135.76 76.00
    11  1135.76 76.00
    12  1135.76 76.00
```

```
'EB24toNB680, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_46                                ' 'AG' 581361.08 4194663.74 581411.95 4194675.15
-5.00   18.50
    2 1
'Link_47                                ' 'AG' 581324.41 4194660.38 581361.08 4194663.74
-2.12   18.50
    3 1
'Link_48                                ' 'AG' 581283.27 4194661.32 581324.41 4194660.38
-0.34   17.00
    4 1
'Link_49                                ' 'AG' 581244.77 4194665.30 581283.27 4194661.32
0.54   17.00
    5 1
'Link_50                                ' 'AG' 581213.31 4194671.04 581244.77 4194665.30
1.24   17.00
    6 1
'Link_51                                ' 'AG' 581184.20 4194677.86 581213.31 4194671.04
2.38   17.00
    7 1
'Link_52                                ' 'AG' 581118.32 4194699.55 581184.20 4194677.86
4.78   17.00
    8 1
'Link_53                                ' 'AG' 581082.80 4194711.67 581118.32 4194699.55
6.37   17.00
    9 1
'Link_54                                ' 'AG' 581040.32 4194725.88 581082.80 4194711.67
6.62   17.00
    10 1
'Link_55                                ' 'AG' 581011.67 4194735.37 581040.32 4194725.88
7.20   17.00
    11 1
'Link_56                                ' 'AG' 580978.40 4194747.59 581011.67 4194735.37
9.90   17.00
    12 1
'Link_57                                ' 'AG' 580948.01 4194757.48 580978.40 4194747.59
10.00   17.00
 1     0.00
      1   627.41 72.44
      2   627.41 72.44
      3   627.41 72.44
      4   627.41 72.44
```

```
     5   627.41 72.44
     6   627.41 72.44
     7   627.41 72.44
     8   627.41 72.44
     9   627.41 72.44
    10   627.41 72.44
    11   627.41 72.44
    12   627.41 72.44
2     0.00
     1   203.32 74.29
     2   203.32 74.29
     3   203.32 74.29
     4   203.32 74.29
     5   203.32 74.29
     6   203.32 74.29
     7   203.32 74.29
     8   203.32 74.29
     9   203.32 74.29
    10   203.32 74.29
    11   203.32 74.29
    12   203.32 74.29
3     0.00
     1   199.78 100.15
     2   199.78 100.15
     3   199.78 100.15
     4   199.78 100.15
     5   199.78 100.15
     6   199.78 100.15
     7   199.78 100.15
     8   199.78 100.15
     9   199.78 100.15
    10   199.78 100.15
    11   199.78 100.15
    12   199.78 100.15
4     0.00
     1    93.37 79.63
     2    93.37 79.63
     3    93.37 79.63
     4    93.37 79.63
     5    93.37 79.63
     6    93.37 79.63
     7    93.37 79.63
     8    93.37 79.63
     9    93.37 79.63
    10    93.37 79.63
    11    93.37 79.63
    12    93.37 79.63
5     0.00
     1   264.15 77.16
     2   264.15 77.16
     3   264.15 77.16
     4   264.15 77.16
     5   264.15 77.16
     6   264.15 77.16
```

```
      7   264.15 77.16
      8   264.15 77.16
      9   264.15 77.16
     10   264.15 77.16
     11   264.15 77.16
     12   264.15 77.16
 6     0.00
      1   487.73 79.84
      2   487.73 79.84
      3   487.73 79.84
      4   487.73 79.84
      5   487.73 79.84
      6   487.73 79.84
      7   487.73 79.84
      8   487.73 79.84
      9   487.73 79.84
     10   487.73 79.84
     11   487.73 79.84
     12   487.73 79.84
 7     0.00
      1  2214.03 72.46
      2  2214.03 72.46
      3  2214.03 72.46
      4  2214.03 72.46
      5  2214.03 72.46
      6  2214.03 72.46
      7  2214.03 72.46
      8  2214.03 72.46
      9  2214.03 72.46
     10  2214.03 72.46
     11  2214.03 72.46
     12  2214.03 72.46
 8     0.00
      1  4699.68 71.95
      2  4699.68 71.95
      3  4699.68 71.95
      4  4699.68 71.95
      5  4699.68 71.95
      6  4699.68 71.95
      7  4699.68 71.95
      8  4699.68 71.95
      9  4699.68 71.95
     10  4699.68 71.95
     11  4699.68 71.95
     12  4699.68 71.95
 9     0.00
      1  4253.31 74.88
      2  4253.31 74.88
      3  4253.31 74.88
      4  4253.31 74.88
      5  4253.31 74.88
      6  4253.31 74.88
      7  4253.31 74.88
      8  4253.31 74.88
```

```
     9  4253.31 74.88
    10  4253.31 74.88
    11  4253.31 74.88
    12  4253.31 74.88
10     0.00
     1  2552.00 75.60
     2  2552.00 75.60
     3  2552.00 75.60
     4  2552.00 75.60
     5  2552.00 75.60
     6  2552.00 75.60
     7  2552.00 75.60
     8  2552.00 75.60
     9  2552.00 75.60
    10  2552.00 75.60
    11  2552.00 75.60
    12  2552.00 75.60
11     0.00
     1  2751.75 74.54
     2  2751.75 74.54
     3  2751.75 74.54
     4  2751.75 74.54
     5  2751.75 74.54
     6  2751.75 74.54
     7  2751.75 74.54
     8  2751.75 74.54
     9  2751.75 74.54
    10  2751.75 74.54
    11  2751.75 74.54
    12  2751.75 74.54
12     0.00
     1  3487.15 74.05
     2  3487.15 74.05
     3  3487.15 74.05
     4  3487.15 74.05
     5  3487.15 74.05
     6  3487.15 74.05
     7  3487.15 74.05
     8  3487.15 74.05
     9  3487.15 74.05
    10  3487.15 74.05
    11  3487.15 74.05
    12  3487.15 74.05
13     0.00
     1  3670.00 72.78
     2  3670.00 72.78
     3  3670.00 72.78
     4  3670.00 72.78
     5  3670.00 72.78
     6  3670.00 72.78
     7  3670.00 72.78
     8  3670.00 72.78
     9  3670.00 72.78
    10  3670.00 72.78
```

```
    11  3670.00 72.78
    12  3670.00 72.78
14     0.00
     1  3600.83 73.52
     2  3600.83 73.52
     3  3600.83 73.52
     4  3600.83 73.52
     5  3600.83 73.52
     6  3600.83 73.52
     7  3600.83 73.52
     8  3600.83 73.52
     9  3600.83 73.52
    10  3600.83 73.52
    11  3600.83 73.52
    12  3600.83 73.52
15     0.00
     1  4220.26 72.77
     2  4220.26 72.77
     3  4220.26 72.77
     4  4220.26 72.77
     5  4220.26 72.77
     6  4220.26 72.77
     7  4220.26 72.77
     8  4220.26 72.77
     9  4220.26 72.77
    10  4220.26 72.77
    11  4220.26 72.77
    12  4220.26 72.77
16     0.00
     1  4331.74 73.39
     2  4331.74 73.39
     3  4331.74 73.39
     4  4331.74 73.39
     5  4331.74 73.39
     6  4331.74 73.39
     7  4331.74 73.39
     8  4331.74 73.39
     9  4331.74 73.39
    10  4331.74 73.39
    11  4331.74 73.39
    12  4331.74 73.39
17     0.00
     1  4462.91 74.73
     2  4462.91 74.73
     3  4462.91 74.73
     4  4462.91 74.73
     5  4462.91 74.73
     6  4462.91 74.73
     7  4462.91 74.73
     8  4462.91 74.73
     9  4462.91 74.73
    10  4462.91 74.73
    11  4462.91 74.73
    12  4462.91 74.73
```

```
18     0.00
     1  4978.66 73.52
     2  4978.66 73.52
     3  4978.66 73.52
     4  4978.66 73.52
     5  4978.66 73.52
     6  4978.66 73.52
     7  4978.66 73.52
     8  4978.66 73.52
     9  4978.66 73.52
    10  4978.66 73.52
    11  4978.66 73.52
    12  4978.66 73.52
19     0.00
     1  3466.07 72.57
     2  3466.07 72.57
     3  3466.07 72.57
     4  3466.07 72.57
     5  3466.07 72.57
     6  3466.07 72.57
     7  3466.07 72.57
     8  3466.07 72.57
     9  3466.07 72.57
    10  3466.07 72.57
    11  3466.07 72.57
    12  3466.07 72.57
20     0.00
     1  2615.41 72.73
     2  2615.41 72.73
     3  2615.41 72.73
     4  2615.41 72.73
     5  2615.41 72.73
     6  2615.41 72.73
     7  2615.41 72.73
     8  2615.41 72.73
     9  2615.41 72.73
    10  2615.41 72.73
    11  2615.41 72.73
    12  2615.41 72.73
21     0.00
     1  1946.52 71.91
     2  1946.52 71.91
     3  1946.52 71.91
     4  1946.52 71.91
     5  1946.52 71.91
     6  1946.52 71.91
     7  1946.52 71.91
     8  1946.52 71.91
     9  1946.52 71.91
    10  1946.52 71.91
    11  1946.52 71.91
    12  1946.52 71.91
22     0.00
     1  1950.14 71.74
```

```
     2  1950.14 71.74
     3  1950.14 71.74
     4  1950.14 71.74
     5  1950.14 71.74
     6  1950.14 71.74
     7  1950.14 71.74
     8  1950.14 71.74
     9  1950.14 71.74
    10  1950.14 71.74
    11  1950.14 71.74
    12  1950.14 71.74
23     0.00
     1  1466.15 72.22
     2  1466.15 72.22
     3  1466.15 72.22
     4  1466.15 72.22
     5  1466.15 72.22
     6  1466.15 72.22
     7  1466.15 72.22
     8  1466.15 72.22
     9  1466.15 72.22
    10  1466.15 72.22
    11  1466.15 72.22
    12  1466.15 72.22
24     0.00
     1  1135.76 72.95
     2  1135.76 72.95
     3  1135.76 72.95
     4  1135.76 72.95
     5  1135.76 72.95
     6  1135.76 72.95
     7  1135.76 72.95
     8  1135.76 72.95
     9  1135.76 72.95
    10  1135.76 72.95
    11  1135.76 72.95
    12  1135.76 72.95
```

```
'EB24toNB680PM, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_46                                ' 'AG' 581361.08 4194663.74 581411.95 4194675.15
-5.00   18.50
    2 1
'Link_47                                ' 'AG' 581324.41 4194660.38 581361.08 4194663.74
-2.12   18.50
    3 1
'Link_48                                ' 'AG' 581283.27 4194661.32 581324.41 4194660.38
-0.34   17.00
    4 1
'Link_49                                ' 'AG' 581244.77 4194665.30 581283.27 4194661.32
0.54   17.00
    5 1
'Link_50                                ' 'AG' 581213.31 4194671.04 581244.77 4194665.30
1.24   17.00
    6 1
'Link_51                                ' 'AG' 581184.20 4194677.86 581213.31 4194671.04
2.38   17.00
    7 1
'Link_52                                ' 'AG' 581118.32 4194699.55 581184.20 4194677.86
4.78   17.00
    8 1
'Link_53                                ' 'AG' 581082.80 4194711.67 581118.32 4194699.55
6.37   17.00
    9 1
'Link_54                                ' 'AG' 581040.32 4194725.88 581082.80 4194711.67
6.62   17.00
    10 1
'Link_55                                ' 'AG' 581011.67 4194735.37 581040.32 4194725.88
7.20   17.00
    11 1
'Link_56                                ' 'AG' 580978.40 4194747.59 581011.67 4194735.37
9.90   17.00
    12 1
'Link_57                                ' 'AG' 580948.01 4194757.48 580978.40 4194747.59
10.00   17.00
 1     0.00
      1   692.28 20.16
      2   692.28 20.16
      3   692.28 20.16
      4   692.28 20.16
```

```
     5   692.28 20.16
     6   692.28 20.16
     7   692.28 20.16
     8   692.28 20.16
     9   692.28 20.16
    10   692.28 20.16
    11   692.28 20.16
    12   692.28 20.16
2     0.00
     1   257.84 23.07
     2   257.84 23.07
     3   257.84 23.07
     4   257.84 23.07
     5   257.84 23.07
     6   257.84 23.07
     7   257.84 23.07
     8   257.84 23.07
     9   257.84 23.07
    10   257.84 23.07
    11   257.84 23.07
    12   257.84 23.07
3     0.00
     1   271.27 23.30
     2   271.27 23.30
     3   271.27 23.30
     4   271.27 23.30
     5   271.27 23.30
     6   271.27 23.30
     7   271.27 23.30
     8   271.27 23.30
     9   271.27 23.30
    10   271.27 23.30
    11   271.27 23.30
    12   271.27 23.30
4     0.00
     1   145.06 25.05
     2   145.06 25.05
     3   145.06 25.05
     4   145.06 25.05
     5   145.06 25.05
     6   145.06 25.05
     7   145.06 25.05
     8   145.06 25.05
     9   145.06 25.05
    10   145.06 25.05
    11   145.06 25.05
    12   145.06 25.05
5     0.00
     1   304.68 20.91
     2   304.68 20.91
     3   304.68 20.91
     4   304.68 20.91
     5   304.68 20.91
     6   304.68 20.91
```

```
      7   304.68 20.91
      8   304.68 20.91
      9   304.68 20.91
     10   304.68 20.91
     11   304.68 20.91
     12   304.68 20.91
 6     0.00
      1   531.18 20.02
      2   531.18 20.02
      3   531.18 20.02
      4   531.18 20.02
      5   531.18 20.02
      6   531.18 20.02
      7   531.18 20.02
      8   531.18 20.02
      9   531.18 20.02
     10   531.18 20.02
     11   531.18 20.02
     12   531.18 20.02
 7     0.00
      1  2287.28 18.76
      2  2287.28 18.76
      3  2287.28 18.76
      4  2287.28 18.76
      5  2287.28 18.76
      6  2287.28 18.76
      7  2287.28 18.76
      8  2287.28 18.76
      9  2287.28 18.76
     10  2287.28 18.76
     11  2287.28 18.76
     12  2287.28 18.76
 8     0.00
      1  4771.20 18.29
      2  4771.20 18.29
      3  4771.20 18.29
      4  4771.20 18.29
      5  4771.20 18.29
      6  4771.20 18.29
      7  4771.20 18.29
      8  4771.20 18.29
      9  4771.20 18.29
     10  4771.20 18.29
     11  4771.20 18.29
     12  4771.20 18.29
 9     0.00
      1  4349.58 18.50
      2  4349.58 18.50
      3  4349.58 18.50
      4  4349.58 18.50
      5  4349.58 18.50
      6  4349.58 18.50
      7  4349.58 18.50
      8  4349.58 18.50
```

```
     9  4349.58 18.50
    10  4349.58 18.50
    11  4349.58 18.50
    12  4349.58 18.50
10     0.00
     1  2655.07 19.04
     2  2655.07 19.04
     3  2655.07 19.04
     4  2655.07 19.04
     5  2655.07 19.04
     6  2655.07 19.04
     7  2655.07 19.04
     8  2655.07 19.04
     9  2655.07 19.04
    10  2655.07 19.04
    11  2655.07 19.04
    12  2655.07 19.04
11     0.00
     1  2847.53 18.88
     2  2847.53 18.88
     3  2847.53 18.88
     4  2847.53 18.88
     5  2847.53 18.88
     6  2847.53 18.88
     7  2847.53 18.88
     8  2847.53 18.88
     9  2847.53 18.88
    10  2847.53 18.88
    11  2847.53 18.88
    12  2847.53 18.88
12     0.00
     1  3589.32 18.75
     2  3589.32 18.75
     3  3589.32 18.75
     4  3589.32 18.75
     5  3589.32 18.75
     6  3589.32 18.75
     7  3589.32 18.75
     8  3589.32 18.75
     9  3589.32 18.75
    10  3589.32 18.75
    11  3589.32 18.75
    12  3589.32 18.75
13     0.00
     1  3759.31 18.67
     2  3759.31 18.67
     3  3759.31 18.67
     4  3759.31 18.67
     5  3759.31 18.67
     6  3759.31 18.67
     7  3759.31 18.67
     8  3759.31 18.67
     9  3759.31 18.67
    10  3759.31 18.67
```

```
    11  3759.31 18.67
    12  3759.31 18.67
14     0.00
     1  3691.88 18.69
     2  3691.88 18.69
     3  3691.88 18.69
     4  3691.88 18.69
     5  3691.88 18.69
     6  3691.88 18.69
     7  3691.88 18.69
     8  3691.88 18.69
     9  3691.88 18.69
    10  3691.88 18.69
    11  3691.88 18.69
    12  3691.88 18.69
15     0.00
     1  4295.27 18.51
     2  4295.27 18.51
     3  4295.27 18.51
     4  4295.27 18.51
     5  4295.27 18.51
     6  4295.27 18.51
     7  4295.27 18.51
     8  4295.27 18.51
     9  4295.27 18.51
    10  4295.27 18.51
    11  4295.27 18.51
    12  4295.27 18.51
16     0.00
     1  4390.04 18.37
     2  4390.04 18.37
     3  4390.04 18.37
     4  4390.04 18.37
     5  4390.04 18.37
     6  4390.04 18.37
     7  4390.04 18.37
     8  4390.04 18.37
     9  4390.04 18.37
    10  4390.04 18.37
    11  4390.04 18.37
    12  4390.04 18.37
17     0.00
     1  4538.01 18.48
     2  4538.01 18.48
     3  4538.01 18.48
     4  4538.01 18.48
     5  4538.01 18.48
     6  4538.01 18.48
     7  4538.01 18.48
     8  4538.01 18.48
     9  4538.01 18.48
    10  4538.01 18.48
    11  4538.01 18.48
    12  4538.01 18.48
```

```
18     0.00
     1  5044.72 18.32
     2  5044.72 18.32
     3  5044.72 18.32
     4  5044.72 18.32
     5  5044.72 18.32
     6  5044.72 18.32
     7  5044.72 18.32
     8  5044.72 18.32
     9  5044.72 18.32
    10  5044.72 18.32
    11  5044.72 18.32
    12  5044.72 18.32
19     0.00
     1  3518.83 18.39
     2  3518.83 18.39
     3  3518.83 18.39
     4  3518.83 18.39
     5  3518.83 18.39
     6  3518.83 18.39
     7  3518.83 18.39
     8  3518.83 18.39
     9  3518.83 18.39
    10  3518.83 18.39
    11  3518.83 18.39
    12  3518.83 18.39
20     0.00
     1  2639.91 18.26
     2  2639.91 18.26
     3  2639.91 18.26
     4  2639.91 18.26
     5  2639.91 18.26
     6  2639.91 18.26
     7  2639.91 18.26
     8  2639.91 18.26
     9  2639.91 18.26
    10  2639.91 18.26
    11  2639.91 18.26
    12  2639.91 18.26
21     0.00
     1  1998.91 18.64
     2  1998.91 18.64
     3  1998.91 18.64
     4  1998.91 18.64
     5  1998.91 18.64
     6  1998.91 18.64
     7  1998.91 18.64
     8  1998.91 18.64
     9  1998.91 18.64
    10  1998.91 18.64
    11  1998.91 18.64
    12  1998.91 18.64
22     0.00
     1  2006.26 18.78
```

```
     2  2006.26 18.78
     3  2006.26 18.78
     4  2006.26 18.78
     5  2006.26 18.78
     6  2006.26 18.78
     7  2006.26 18.78
     8  2006.26 18.78
     9  2006.26 18.78
    10  2006.26 18.78
    11  2006.26 18.78
    12  2006.26 18.78
23     0.00
     1  1507.92 18.80
     2  1507.92 18.80
     3  1507.92 18.80
     4  1507.92 18.80
     5  1507.92 18.80
     6  1507.92 18.80
     7  1507.92 18.80
     8  1507.92 18.80
     9  1507.92 18.80
    10  1507.92 18.80
    11  1507.92 18.80
    12  1507.92 18.80
24     0.00
     1  1156.64 18.51
     2  1156.64 18.51
     3  1156.64 18.51
     4  1156.64 18.51
     5  1156.64 18.51
     6  1156.64 18.51
     7  1156.64 18.51
     8  1156.64 18.51
     9  1156.64 18.51
    10  1156.64 18.51
    11  1156.64 18.51
    12  1156.64 18.51
```

```
'EB24toNB680PM, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_46                                ' 'AG' 581361.08 4194663.74 581411.95 4194675.15
-5.00   18.50
    2 1
'Link_47                                ' 'AG' 581324.41 4194660.38 581361.08 4194663.74
-2.12   18.50
    3 1
'Link_48                                ' 'AG' 581283.27 4194661.32 581324.41 4194660.38
-0.34   17.00
    4 1
'Link_49                                ' 'AG' 581244.77 4194665.30 581283.27 4194661.32
0.54   17.00
    5 1
'Link_50                                ' 'AG' 581213.31 4194671.04 581244.77 4194665.30
1.24   17.00
    6 1
'Link_51                                ' 'AG' 581184.20 4194677.86 581213.31 4194671.04
2.38   17.00
    7 1
'Link_52                                ' 'AG' 581118.32 4194699.55 581184.20 4194677.86
4.78   17.00
    8 1
'Link_53                                ' 'AG' 581082.80 4194711.67 581118.32 4194699.55
6.37   17.00
    9 1
'Link_54                                ' 'AG' 581040.32 4194725.88 581082.80 4194711.67
6.62   17.00
    10 1
'Link_55                                ' 'AG' 581011.67 4194735.37 581040.32 4194725.88
7.20   17.00
    11 1
'Link_56                                ' 'AG' 580978.40 4194747.59 581011.67 4194735.37
9.90   17.00
    12 1
'Link_57                                ' 'AG' 580948.01 4194757.48 580978.40 4194747.59
10.00   17.00
 1     0.00
      1   692.28 7.66
      2   692.28 7.66
      3   692.28 7.66
      4   692.28 7.66
```

```
     5   692.28 7.66
     6   692.28 7.66
     7   692.28 7.66
     8   692.28 7.66
     9   692.28 7.66
    10   692.28 7.66
    11   692.28 7.66
    12   692.28 7.66
2     0.00
     1   257.84 13.49
     2   257.84 13.49
     3   257.84 13.49
     4   257.84 13.49
     5   257.84 13.49
     6   257.84 13.49
     7   257.84 13.49
     8   257.84 13.49
     9   257.84 13.49
    10   257.84 13.49
    11   257.84 13.49
    12   257.84 13.49
3     0.00
     1   271.27 15.54
     2   271.27 15.54
     3   271.27 15.54
     4   271.27 15.54
     5   271.27 15.54
     6   271.27 15.54
     7   271.27 15.54
     8   271.27 15.54
     9   271.27 15.54
    10   271.27 15.54
    11   271.27 15.54
    12   271.27 15.54
4     0.00
     1   145.06 26.12
     2   145.06 26.12
     3   145.06 26.12
     4   145.06 26.12
     5   145.06 26.12
     6   145.06 26.12
     7   145.06 26.12
     8   145.06 26.12
     9   145.06 26.12
    10   145.06 26.12
    11   145.06 26.12
    12   145.06 26.12
5     0.00
     1   304.68 10.09
     2   304.68 10.09
     3   304.68 10.09
     4   304.68 10.09
     5   304.68 10.09
     6   304.68 10.09
```

```
      7   304.68 10.09
      8   304.68 10.09
      9   304.68 10.09
     10   304.68 10.09
     11   304.68 10.09
     12   304.68 10.09
 6     0.00
      1   531.18 7.97
      2   531.18 7.97
      3   531.18 7.97
      4   531.18 7.97
      5   531.18 7.97
      6   531.18 7.97
      7   531.18 7.97
      8   531.18 7.97
      9   531.18 7.97
     10   531.18 7.97
     11   531.18 7.97
     12   531.18 7.97
 7     0.00
      1  2287.28 4.19
      2  2287.28 4.19
      3  2287.28 4.19
      4  2287.28 4.19
      5  2287.28 4.19
      6  2287.28 4.19
      7  2287.28 4.19
      8  2287.28 4.19
      9  2287.28 4.19
     10  2287.28 4.19
     11  2287.28 4.19
     12  2287.28 4.19
 8     0.00
      1  4771.20 2.83
      2  4771.20 2.83
      3  4771.20 2.83
      4  4771.20 2.83
      5  4771.20 2.83
      6  4771.20 2.83
      7  4771.20 2.83
      8  4771.20 2.83
      9  4771.20 2.83
     10  4771.20 2.83
     11  4771.20 2.83
     12  4771.20 2.83
 9     0.00
      1  4349.58 3.27
      2  4349.58 3.27
      3  4349.58 3.27
      4  4349.58 3.27
      5  4349.58 3.27
      6  4349.58 3.27
      7  4349.58 3.27
      8  4349.58 3.27
```

```
     9  4349.58 3.27
    10  4349.58 3.27
    11  4349.58 3.27
    12  4349.58 3.27
10     0.00
     1  2655.07 4.52
     2  2655.07 4.52
     3  2655.07 4.52
     4  2655.07 4.52
     5  2655.07 4.52
     6  2655.07 4.52
     7  2655.07 4.52
     8  2655.07 4.52
     9  2655.07 4.52
    10  2655.07 4.52
    11  2655.07 4.52
    12  2655.07 4.52
11     0.00
     1  2847.53 4.13
     2  2847.53 4.13
     3  2847.53 4.13
     4  2847.53 4.13
     5  2847.53 4.13
     6  2847.53 4.13
     7  2847.53 4.13
     8  2847.53 4.13
     9  2847.53 4.13
    10  2847.53 4.13
    11  2847.53 4.13
    12  2847.53 4.13
12     0.00
     1  3589.32 3.79
     2  3589.32 3.79
     3  3589.32 3.79
     4  3589.32 3.79
     5  3589.32 3.79
     6  3589.32 3.79
     7  3589.32 3.79
     8  3589.32 3.79
     9  3589.32 3.79
    10  3589.32 3.79
    11  3589.32 3.79
    12  3589.32 3.79
13     0.00
     1  3759.31 3.52
     2  3759.31 3.52
     3  3759.31 3.52
     4  3759.31 3.52
     5  3759.31 3.52
     6  3759.31 3.52
     7  3759.31 3.52
     8  3759.31 3.52
     9  3759.31 3.52
    10  3759.31 3.52
```

```
    11  3759.31 3.52
    12  3759.31 3.52
14     0.00
     1  3691.88 3.57
     2  3691.88 3.57
     3  3691.88 3.57
     4  3691.88 3.57
     5  3691.88 3.57
     6  3691.88 3.57
     7  3691.88 3.57
     8  3691.88 3.57
     9  3691.88 3.57
    10  3691.88 3.57
    11  3691.88 3.57
    12  3691.88 3.57
15     0.00
     1  4295.27 3.09
     2  4295.27 3.09
     3  4295.27 3.09
     4  4295.27 3.09
     5  4295.27 3.09
     6  4295.27 3.09
     7  4295.27 3.09
     8  4295.27 3.09
     9  4295.27 3.09
    10  4295.27 3.09
    11  4295.27 3.09
    12  4295.27 3.09
16     0.00
     1  4390.04 2.75
     2  4390.04 2.75
     3  4390.04 2.75
     4  4390.04 2.75
     5  4390.04 2.75
     6  4390.04 2.75
     7  4390.04 2.75
     8  4390.04 2.75
     9  4390.04 2.75
    10  4390.04 2.75
    11  4390.04 2.75
    12  4390.04 2.75
17     0.00
     1  4538.01 3.03
     2  4538.01 3.03
     3  4538.01 3.03
     4  4538.01 3.03
     5  4538.01 3.03
     6  4538.01 3.03
     7  4538.01 3.03
     8  4538.01 3.03
     9  4538.01 3.03
    10  4538.01 3.03
    11  4538.01 3.03
    12  4538.01 3.03
```

```
18     0.00
     1  5044.72 2.62
     2  5044.72 2.62
     3  5044.72 2.62
     4  5044.72 2.62
     5  5044.72 2.62
     6  5044.72 2.62
     7  5044.72 2.62
     8  5044.72 2.62
     9  5044.72 2.62
    10  5044.72 2.62
    11  5044.72 2.62
    12  5044.72 2.62
19     0.00
     1  3518.83 2.77
     2  3518.83 2.77
     3  3518.83 2.77
     4  3518.83 2.77
     5  3518.83 2.77
     6  3518.83 2.77
     7  3518.83 2.77
     8  3518.83 2.77
     9  3518.83 2.77
    10  3518.83 2.77
    11  3518.83 2.77
    12  3518.83 2.77
20     0.00
     1  2639.91 2.45
     2  2639.91 2.45
     3  2639.91 2.45
     4  2639.91 2.45
     5  2639.91 2.45
     6  2639.91 2.45
     7  2639.91 2.45
     8  2639.91 2.45
     9  2639.91 2.45
    10  2639.91 2.45
    11  2639.91 2.45
    12  2639.91 2.45
21     0.00
     1  1998.91 3.53
     2  1998.91 3.53
     3  1998.91 3.53
     4  1998.91 3.53
     5  1998.91 3.53
     6  1998.91 3.53
     7  1998.91 3.53
     8  1998.91 3.53
     9  1998.91 3.53
    10  1998.91 3.53
    11  1998.91 3.53
    12  1998.91 3.53
22     0.00
     1  2006.26 3.81
```

```
     2  2006.26 3.81
     3  2006.26 3.81
     4  2006.26 3.81
     5  2006.26 3.81
     6  2006.26 3.81
     7  2006.26 3.81
     8  2006.26 3.81
     9  2006.26 3.81
    10  2006.26 3.81
    11  2006.26 3.81
    12  2006.26 3.81
23     0.00
     1  1507.92 3.64
     2  1507.92 3.64
     3  1507.92 3.64
     4  1507.92 3.64
     5  1507.92 3.64
     6  1507.92 3.64
     7  1507.92 3.64
     8  1507.92 3.64
     9  1507.92 3.64
    10  1507.92 3.64
    11  1507.92 3.64
    12  1507.92 3.64
24     0.00
     1  1156.64 3.02
     2  1156.64 3.02
     3  1156.64 3.02
     4  1156.64 3.02
     5  1156.64 3.02
     6  1156.64 3.02
     7  1156.64 3.02
     8  1156.64 3.02
     9  1156.64 3.02
    10  1156.64 3.02
    11  1156.64 3.02
    12  1156.64 3.02
```

```
'EB24toNB680, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_46                                ' 'AG' 581361.08 4194663.74 581411.95 4194675.15
-5.00   18.50
    2 1
'Link_47                                ' 'AG' 581324.41 4194660.38 581361.08 4194663.74
-2.12   18.50
    3 1
'Link_48                                ' 'AG' 581283.27 4194661.32 581324.41 4194660.38
-0.34   17.00
    4 1
'Link_49                                ' 'AG' 581244.77 4194665.30 581283.27 4194661.32
0.54   17.00
    5 1
'Link_50                                ' 'AG' 581213.31 4194671.04 581244.77 4194665.30
1.24   17.00
    6 1
'Link_51                                ' 'AG' 581184.20 4194677.86 581213.31 4194671.04
2.38   17.00
    7 1
'Link_52                                ' 'AG' 581118.32 4194699.55 581184.20 4194677.86
4.78   17.00
    8 1
'Link_53                                ' 'AG' 581082.80 4194711.67 581118.32 4194699.55
6.37   17.00
    9 1
'Link_54                                ' 'AG' 581040.32 4194725.88 581082.80 4194711.67
6.62   17.00
    10 1
'Link_55                                ' 'AG' 581011.67 4194735.37 581040.32 4194725.88
7.20   17.00
    11 1
'Link_56                                ' 'AG' 580978.40 4194747.59 581011.67 4194735.37
9.90   17.00
    12 1
'Link_57                                ' 'AG' 580948.01 4194757.48 580978.40 4194747.59
10.00   17.00
 1     0.00
      1    64.88 70.39
      2    64.88 70.39
      3    64.88 70.39
      4    64.88 70.39
```

```
      5    64.88 70.39
      6    64.88 70.39
      7    64.88 70.39
      8    64.88 70.39
      9    64.88 70.39
     10    64.88 70.39
     11    64.88 70.39
     12    64.88 70.39
2     0.00
      1    54.52 62.19
      2    54.52 62.19
      3    54.52 62.19
      4    54.52 62.19
      5    54.52 62.19
      6    54.52 62.19
      7    54.52 62.19
      8    54.52 62.19
      9    54.52 62.19
     10    54.52 62.19
     11    54.52 62.19
     12    54.52 62.19
3     0.00
      1    71.49 58.32
      2    71.49 58.32
      3    71.49 58.32
      4    71.49 58.32
      5    71.49 58.32
      6    71.49 58.32
      7    71.49 58.32
      8    71.49 58.32
      9    71.49 58.32
     10    71.49 58.32
     11    71.49 58.32
     12    71.49 58.32
4     0.00
      1    51.70 76.15
      2    51.70 76.15
      3    51.70 76.15
      4    51.70 76.15
      5    51.70 76.15
      6    51.70 76.15
      7    51.70 76.15
      8    51.70 76.15
      9    51.70 76.15
     10    51.70 76.15
     11    51.70 76.15
     12    51.70 76.15
5     0.00
      1    40.53 69.86
      2    40.53 69.86
      3    40.53 69.86
      4    40.53 69.86
      5    40.53 69.86
      6    40.53 69.86
```

```
      7    40.53 69.86
      8    40.53 69.86
      9    40.53 69.86
     10    40.53 69.86
     11    40.53 69.86
     12    40.53 69.86
6     0.00
      1    43.45 84.31
      2    43.45 84.31
      3    43.45 84.31
      4    43.45 84.31
      5    43.45 84.31
      6    43.45 84.31
      7    43.45 84.31
      8    43.45 84.31
      9    43.45 84.31
     10    43.45 84.31
     11    43.45 84.31
     12    43.45 84.31
7     0.00
      1    73.25 84.70
      2    73.25 84.70
      3    73.25 84.70
      4    73.25 84.70
      5    73.25 84.70
      6    73.25 84.70
      7    73.25 84.70
      8    73.25 84.70
      9    73.25 84.70
     10    73.25 84.70
     11    73.25 84.70
     12    73.25 84.70
8     0.00
      1    71.52 79.73
      2    71.52 79.73
      3    71.52 79.73
      4    71.52 79.73
      5    71.52 79.73
      6    71.52 79.73
      7    71.52 79.73
      8    71.52 79.73
      9    71.52 79.73
     10    71.52 79.73
     11    71.52 79.73
     12    71.52 79.73
9     0.00
      1    96.27 75.90
      2    96.27 75.90
      3    96.27 75.90
      4    96.27 75.90
      5    96.27 75.90
      6    96.27 75.90
      7    96.27 75.90
      8    96.27 75.90
```

```
     9    96.27 75.90
    10    96.27 75.90
    11    96.27 75.90
    12    96.27 75.90
10     0.00
     1   103.07 79.07
     2   103.07 79.07
     3   103.07 79.07
     4   103.07 79.07
     5   103.07 79.07
     6   103.07 79.07
     7   103.07 79.07
     8   103.07 79.07
     9   103.07 79.07
    10   103.07 79.07
    11   103.07 79.07
    12   103.07 79.07
11     0.00
     1    95.78 78.46
     2    95.78 78.46
     3    95.78 78.46
     4    95.78 78.46
     5    95.78 78.46
     6    95.78 78.46
     7    95.78 78.46
     8    95.78 78.46
     9    95.78 78.46
    10    95.78 78.46
    11    95.78 78.46
    12    95.78 78.46
12     0.00
     1   102.17 79.38
     2   102.17 79.38
     3   102.17 79.38
     4   102.17 79.38
     5   102.17 79.38
     6   102.17 79.38
     7   102.17 79.38
     8   102.17 79.38
     9   102.17 79.38
    10   102.17 79.38
    11   102.17 79.38
    12   102.17 79.38
13     0.00
     1    89.31 82.55
     2    89.31 82.55
     3    89.31 82.55
     4    89.31 82.55
     5    89.31 82.55
     6    89.31 82.55
     7    89.31 82.55
     8    89.31 82.55
     9    89.31 82.55
    10    89.31 82.55
```

```
    11    89.31 82.55
    12    89.31 82.55
14     0.00
     1    91.05 81.56
     2    91.05 81.56
     3    91.05 81.56
     4    91.05 81.56
     5    91.05 81.56
     6    91.05 81.56
     7    91.05 81.56
     8    91.05 81.56
     9    91.05 81.56
    10    91.05 81.56
    11    91.05 81.56
    12    91.05 81.56
15     0.00
     1    75.02 84.91
     2    75.02 84.91
     3    75.02 84.91
     4    75.02 84.91
     5    75.02 84.91
     6    75.02 84.91
     7    75.02 84.91
     8    75.02 84.91
     9    75.02 84.91
    10    75.02 84.91
    11    75.02 84.91
    12    75.02 84.91
16     0.00
     1    58.30 82.97
     2    58.30 82.97
     3    58.30 82.97
     4    58.30 82.97
     5    58.30 82.97
     6    58.30 82.97
     7    58.30 82.97
     8    58.30 82.97
     9    58.30 82.97
    10    58.30 82.97
    11    58.30 82.97
    12    58.30 82.97
17     0.00
     1    75.10 85.04
     2    75.10 85.04
     3    75.10 85.04
     4    75.10 85.04
     5    75.10 85.04
     6    75.10 85.04
     7    75.10 85.04
     8    75.10 85.04
     9    75.10 85.04
    10    75.10 85.04
    11    75.10 85.04
    12    75.10 85.04
```

```
18     0.00
     1    66.05 73.36
     2    66.05 73.36
     3    66.05 73.36
     4    66.05 73.36
     5    66.05 73.36
     6    66.05 73.36
     7    66.05 73.36
     8    66.05 73.36
     9    66.05 73.36
    10    66.05 73.36
    11    66.05 73.36
    12    66.05 73.36
19     0.00
     1    52.76 75.88
     2    52.76 75.88
     3    52.76 75.88
     4    52.76 75.88
     5    52.76 75.88
     6    52.76 75.88
     7    52.76 75.88
     8    52.76 75.88
     9    52.76 75.88
    10    52.76 75.88
    11    52.76 75.88
    12    52.76 75.88
20     0.00
     1    24.50 83.24
     2    24.50 83.24
     3    24.50 83.24
     4    24.50 83.24
     5    24.50 83.24
     6    24.50 83.24
     7    24.50 83.24
     8    24.50 83.24
     9    24.50 83.24
    10    24.50 83.24
    11    24.50 83.24
    12    24.50 83.24
21     0.00
     1    52.39 75.67
     2    52.39 75.67
     3    52.39 75.67
     4    52.39 75.67
     5    52.39 75.67
     6    52.39 75.67
     7    52.39 75.67
     8    52.39 75.67
     9    52.39 75.67
    10    52.39 75.67
    11    52.39 75.67
    12    52.39 75.67
22     0.00
     1    56.13 81.67
```

```
     2    56.13 81.67
     3    56.13 81.67
     4    56.13 81.67
     5    56.13 81.67
     6    56.13 81.67
     7    56.13 81.67
     8    56.13 81.67
     9    56.13 81.67
    10    56.13 81.67
    11    56.13 81.67
    12    56.13 81.67
23     0.00
     1    41.77 75.82
     2    41.77 75.82
     3    41.77 75.82
     4    41.77 75.82
     5    41.77 75.82
     6    41.77 75.82
     7    41.77 75.82
     8    41.77 75.82
     9    41.77 75.82
    10    41.77 75.82
    11    41.77 75.82
    12    41.77 75.82
24     0.00
     1    20.88 77.61
     2    20.88 77.61
     3    20.88 77.61
     4    20.88 77.61
     5    20.88 77.61
     6    20.88 77.61
     7    20.88 77.61
     8    20.88 77.61
     9    20.88 77.61
    10    20.88 77.61
    11    20.88 77.61
    12    20.88 77.61
```

Eastbound 24 to Southbound 680

```
'EB24toSB680, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_74                                ' 'AG' 581420.19 4194612.96 581451.94 4194611.78
-10.00   16.90
    2 1
'Link_75                                ' 'AG' 581379.63 4194612.64 581420.19 4194612.96
-8.38   16.90
    3 1
'Link_76                                ' 'AG' 581342.01 4194613.34 581379.63 4194612.64
-6.79   16.90
    4 1
'Link_77                                ' 'AG' 581313.62 4194615.13 581342.01 4194613.34
-5.11   16.90
    5 1
'Link_78                                ' 'AG' 581293.14 4194616.95 581313.62 4194615.13
-3.42   16.90
    6 1
'Link_79                                ' 'AG' 581268.84 4194620.17 581293.14 4194616.95
-1.95   16.90
    7 1
'Link_80                                ' 'AG' 581248.96 4194624.37 581268.84 4194620.17
-1.06   16.90
    8 1
'Link_81                                ' 'AG' 581231.02 4194630.51 581248.96 4194624.37
-0.78   16.90
    9 1
'Link_82                                ' 'AG' 581212.70 4194635.17 581231.02 4194630.51
-0.70   16.90
    10 1
'Link_83                                ' 'AG' 581186.74 4194645.00 581212.70 4194635.17
-0.49   16.90
    11 1
'Link_84                                ' 'AG' 581168.05 4194653.42 581186.74 4194645.00
0.20   16.90
    12 1
'Link_85                                ' 'AG' 581128.97 4194668.73 581168.05 4194653.42
1.85   16.90
    13 1
'Link_86                                ' 'AG' 581090.56 4194683.48 581128.97 4194668.73
3.20   16.90
    14 1
'Link_87                                ' 'AG' 581069.26 4194693.64 581090.56 4194683.48
```

```
3.88   16.90
    15 1
'Link_88                                ' 'AG' 581030.16 4194708.27 581069.26 4194693.64
4.96   16.90
    16 1
'Link_89                                ' 'AG' 581005.78 4194717.84 581030.16 4194708.27
5.92   16.90
    17 1
'Link_90                                ' 'AG' 580974.93 4194730.58 581005.78 4194717.84
8.54   16.90
    18 1
'Link_91                                ' 'AG' 580930.77 4194748.21 580974.93 4194730.58
10.00   16.90
 1     0.00
      1   223.31 75.13
      2   223.31 75.13
      3   223.31 75.13
      4   223.31 75.13
      5   223.31 75.13
      6   223.31 75.13
      7   223.31 75.13
      8   223.31 75.13
      9   223.31 75.13
     10   223.31 75.13
     11   223.31 75.13
     12   223.31 75.13
     13   223.31 75.13
     14   327.79 75.13
     15   327.79 75.13
     16   327.79 75.13
     17   327.79 75.13
     18   327.79 75.13
 2     0.00
      1    72.37 76.69
      2    72.37 76.69
      3    72.37 76.69
      4    72.37 76.69
      5    72.37 76.69
      6    72.37 76.69
      7    72.37 76.69
      8    72.37 76.69
      9    72.37 76.69
     10    72.37 76.69
     11    72.37 76.69
     12    72.37 76.69
     13    72.37 76.69
     14   106.23 76.69
     15   106.23 76.69
     16   106.23 76.69
     17   106.23 76.69
     18   106.23 76.69
 3     0.00
      1    71.11 112.31
      2    71.11 112.31
```

```
      3    71.11 112.31
      4    71.11 112.31
      5    71.11 112.31
      6    71.11 112.31
      7    71.11 112.31
      8    71.11 112.31
      9    71.11 112.31
     10    71.11 112.31
     11    71.11 112.31
     12    71.11 112.31
     13    71.11 112.31
     14   104.37 112.31
     15   104.37 112.31
     16   104.37 112.31
     17   104.37 112.31
     18   104.37 112.31
4     0.00
      1    33.23 83.28
      2    33.23 83.28
      3    33.23 83.28
      4    33.23 83.28
      5    33.23 83.28
      6    33.23 83.28
      7    33.23 83.28
      8    33.23 83.28
      9    33.23 83.28
     10    33.23 83.28
     11    33.23 83.28
     12    33.23 83.28
     13    33.23 83.28
     14    48.78 83.28
     15    48.78 83.28
     16    48.78 83.28
     17    48.78 83.28
     18    48.78 83.28
5     0.00
      1    94.02 81.29
      2    94.02 81.29
      3    94.02 81.29
      4    94.02 81.29
      5    94.02 81.29
      6    94.02 81.29
      7    94.02 81.29
      8    94.02 81.29
      9    94.02 81.29
     10    94.02 81.29
     11    94.02 81.29
     12    94.02 81.29
     13    94.02 81.29
     14   138.00 81.29
     15   138.00 81.29
     16   138.00 81.29
     17   138.00 81.29
     18   138.00 81.29
```

```
6     0.00
     1   173.59 81.93
     2   173.59 81.93
     3   173.59 81.93
     4   173.59 81.93
     5   173.59 81.93
     6   173.59 81.93
     7   173.59 81.93
     8   173.59 81.93
     9   173.59 81.93
    10   173.59 81.93
    11   173.59 81.93
    12   173.59 81.93
    13   173.59 81.93
    14   254.82 81.93
    15   254.82 81.93
    16   254.82 81.93
    17   254.82 81.93
    18   254.82 81.93
7     0.00
     1   788.01 74.71
     2   788.01 74.71
     3   788.01 74.71
     4   788.01 74.71
     5   788.01 74.71
     6   788.01 74.71
     7   788.01 74.71
     8   788.01 74.71
     9   788.01 74.71
    10   788.01 74.71
    11   788.01 74.71
    12   788.01 74.71
    13   788.01 74.71
    14  1156.72 74.71
    15  1156.72 74.71
    16  1156.72 74.71
    17  1156.72 74.71
    18  1156.72 74.71
8     0.00
     1  1672.70 74.64
     2  1672.70 74.64
     3  1672.70 74.64
     4  1672.70 74.64
     5  1672.70 74.64
     6  1672.70 74.64
     7  1672.70 74.64
     8  1672.70 74.64
     9  1672.70 74.64
    10  1672.70 74.64
    11  1672.70 74.64
    12  1672.70 74.64
    13  1672.70 74.64
    14  2455.34 74.64
    15  2455.34 74.64
```

```
    16  2455.34 74.64
    17  2455.34 74.64
    18  2455.34 74.64
9     0.00
     1  1513.83 77.22
     2  1513.83 77.22
     3  1513.83 77.22
     4  1513.83 77.22
     5  1513.83 77.22
     6  1513.83 77.22
     7  1513.83 77.22
     8  1513.83 77.22
     9  1513.83 77.22
    10  1513.83 77.22
    11  1513.83 77.22
    12  1513.83 77.22
    13  1513.83 77.22
    14  2222.14 77.22
    15  2222.14 77.22
    16  2222.14 77.22
    17  2222.14 77.22
    18  2222.14 77.22
10     0.00
     1   908.30 78.00
     2   908.30 78.00
     3   908.30 78.00
     4   908.30 78.00
     5   908.30 78.00
     6   908.30 78.00
     7   908.30 78.00
     8   908.30 78.00
     9   908.30 78.00
    10   908.30 78.00
    11   908.30 78.00
    12   908.30 78.00
    13   908.30 78.00
    14  1333.29 78.00
    15  1333.29 78.00
    16  1333.29 78.00
    17  1333.29 78.00
    18  1333.29 78.00
11     0.00
     1   979.40 77.64
     2   979.40 77.64
     3   979.40 77.64
     4   979.40 77.64
     5   979.40 77.64
     6   979.40 77.64
     7   979.40 77.64
     8   979.40 77.64
     9   979.40 77.64
    10   979.40 77.64
    11   979.40 77.64
    12   979.40 77.64
```

```
    13   979.40 77.64
    14  1437.65 77.64
    15  1437.65 77.64
    16  1437.65 77.64
    17  1437.65 77.64
    18  1437.65 77.64
12     0.00
     1  1241.14 76.53
     2  1241.14 76.53
     3  1241.14 76.53
     4  1241.14 76.53
     5  1241.14 76.53
     6  1241.14 76.53
     7  1241.14 76.53
     8  1241.14 76.53
     9  1241.14 76.53
    10  1241.14 76.53
    11  1241.14 76.53
    12  1241.14 76.53
    13  1241.14 76.53
    14  1821.86 76.53
    15  1821.86 76.53
    16  1821.86 76.53
    17  1821.86 76.53
    18  1821.86 76.53
13     0.00
     1  1306.22 75.64
     2  1306.22 75.64
     3  1306.22 75.64
     4  1306.22 75.64
     5  1306.22 75.64
     6  1306.22 75.64
     7  1306.22 75.64
     8  1306.22 75.64
     9  1306.22 75.64
    10  1306.22 75.64
    11  1306.22 75.64
    12  1306.22 75.64
    13  1306.22 75.64
    14  1917.39 75.64
    15  1917.39 75.64
    16  1917.39 75.64
    17  1917.39 75.64
    18  1917.39 75.64
14     0.00
     1  1281.60 76.37
     2  1281.60 76.37
     3  1281.60 76.37
     4  1281.60 76.37
     5  1281.60 76.37
     6  1281.60 76.37
     7  1281.60 76.37
     8  1281.60 76.37
     9  1281.60 76.37
```

```
    10  1281.60 76.37
    11  1281.60 76.37
    12  1281.60 76.37
    13  1281.60 76.37
    14  1881.25 76.37
    15  1881.25 76.37
    16  1881.25 76.37
    17  1881.25 76.37
    18  1881.25 76.37
15     0.00
     1  1502.07 75.42
     2  1502.07 75.42
     3  1502.07 75.42
     4  1502.07 75.42
     5  1502.07 75.42
     6  1502.07 75.42
     7  1502.07 75.42
     8  1502.07 75.42
     9  1502.07 75.42
    10  1502.07 75.42
    11  1502.07 75.42
    12  1502.07 75.42
    13  1502.07 75.42
    14  2204.87 75.42
    15  2204.87 75.42
    16  2204.87 75.42
    17  2204.87 75.42
    18  2204.87 75.42
16     0.00
     1  1541.75 76.07
     2  1541.75 76.07
     3  1541.75 76.07
     4  1541.75 76.07
     5  1541.75 76.07
     6  1541.75 76.07
     7  1541.75 76.07
     8  1541.75 76.07
     9  1541.75 76.07
    10  1541.75 76.07
    11  1541.75 76.07
    12  1541.75 76.07
    13  1541.75 76.07
    14  2263.11 76.07
    15  2263.11 76.07
    16  2263.11 76.07
    17  2263.11 76.07
    18  2263.11 76.07
17     0.00
     1  1588.43 78.19
     2  1588.43 78.19
     3  1588.43 78.19
     4  1588.43 78.19
     5  1588.43 78.19
     6  1588.43 78.19
```

```
      7  1588.43 78.19
      8  1588.43 78.19
      9  1588.43 78.19
     10  1588.43 78.19
     11  1588.43 78.19
     12  1588.43 78.19
     13  1588.43 78.19
     14  2331.64 78.19
     15  2331.64 78.19
     16  2331.64 78.19
     17  2331.64 78.19
     18  2331.64 78.19
 18     0.00
      1  1772.00 75.97
      2  1772.00 75.97
      3  1772.00 75.97
      4  1772.00 75.97
      5  1772.00 75.97
      6  1772.00 75.97
      7  1772.00 75.97
      8  1772.00 75.97
      9  1772.00 75.97
     10  1772.00 75.97
     11  1772.00 75.97
     12  1772.00 75.97
     13  1772.00 75.97
     14  2601.10 75.97
     15  2601.10 75.97
     16  2601.10 75.97
     17  2601.10 75.97
     18  2601.10 75.97
 19     0.00
      1  1233.64 75.10
      2  1233.64 75.10
      3  1233.64 75.10
      4  1233.64 75.10
      5  1233.64 75.10
      6  1233.64 75.10
      7  1233.64 75.10
      8  1233.64 75.10
      9  1233.64 75.10
     10  1233.64 75.10
     11  1233.64 75.10
     12  1233.64 75.10
     13  1233.64 75.10
     14  1810.85 75.10
     15  1810.85 75.10
     16  1810.85 75.10
     17  1810.85 75.10
     18  1810.85 75.10
 20     0.00
      1   930.87 75.14
      2   930.87 75.14
      3   930.87 75.14
```

```
     4   930.87 75.14
     5   930.87 75.14
     6   930.87 75.14
     7   930.87 75.14
     8   930.87 75.14
     9   930.87 75.14
    10   930.87 75.14
    11   930.87 75.14
    12   930.87 75.14
    13   930.87 75.14
    14  1366.42 75.14
    15  1366.42 75.14
    16  1366.42 75.14
    17  1366.42 75.14
    18  1366.42 75.14
21     0.00
     1   692.80 74.67
     2   692.80 74.67
     3   692.80 74.67
     4   692.80 74.67
     5   692.80 74.67
     6   692.80 74.67
     7   692.80 74.67
     8   692.80 74.67
     9   692.80 74.67
    10   692.80 74.67
    11   692.80 74.67
    12   692.80 74.67
    13   692.80 74.67
    14  1016.96 74.67
    15  1016.96 74.67
    16  1016.96 74.67
    17  1016.96 74.67
    18  1016.96 74.67
22     0.00
     1   694.09 74.52
     2   694.09 74.52
     3   694.09 74.52
     4   694.09 74.52
     5   694.09 74.52
     6   694.09 74.52
     7   694.09 74.52
     8   694.09 74.52
     9   694.09 74.52
    10   694.09 74.52
    11   694.09 74.52
    12   694.09 74.52
    13   694.09 74.52
    14  1018.85 74.52
    15  1018.85 74.52
    16  1018.85 74.52
    17  1018.85 74.52
    18  1018.85 74.52
23     0.00
```

```
      1   521.83 75.06
      2   521.83 75.06
      3   521.83 75.06
      4   521.83 75.06
      5   521.83 75.06
      6   521.83 75.06
      7   521.83 75.06
      8   521.83 75.06
      9   521.83 75.06
     10   521.83 75.06
     11   521.83 75.06
     12   521.83 75.06
     13   521.83 75.06
     14   765.99 75.06
     15   765.99 75.06
     16   765.99 75.06
     17   765.99 75.06
     18   765.99 75.06
24     0.00
      1   404.24 76.00
      2   404.24 76.00
      3   404.24 76.00
      4   404.24 76.00
      5   404.24 76.00
      6   404.24 76.00
      7   404.24 76.00
      8   404.24 76.00
      9   404.24 76.00
     10   404.24 76.00
     11   404.24 76.00
     12   404.24 76.00
     13   404.24 76.00
     14   593.38 76.00
     15   593.38 76.00
     16   593.38 76.00
     17   593.38 76.00
     18   593.38 76.00
```

```
'EB24toSB680, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_74                                ' 'AG' 581420.19 4194612.96 581451.94 4194611.78
-10.00   16.90
    2 1
'Link_75                                ' 'AG' 581379.63 4194612.64 581420.19 4194612.96
-8.38   16.90
    3 1
'Link_76                                ' 'AG' 581342.01 4194613.34 581379.63 4194612.64
-6.79   16.90
    4 1
'Link_77                                ' 'AG' 581313.62 4194615.13 581342.01 4194613.34
-5.11   16.90
    5 1
'Link_78                                ' 'AG' 581293.14 4194616.95 581313.62 4194615.13
-3.42   16.90
    6 1
'Link_79                                ' 'AG' 581268.84 4194620.17 581293.14 4194616.95
-1.95   16.90
    7 1
'Link_80                                ' 'AG' 581248.96 4194624.37 581268.84 4194620.17
-1.06   16.90
    8 1
'Link_81                                ' 'AG' 581231.02 4194630.51 581248.96 4194624.37
-0.78   16.90
    9 1
'Link_82                                ' 'AG' 581212.70 4194635.17 581231.02 4194630.51
-0.70   16.90
    10 1
'Link_83                                ' 'AG' 581186.74 4194645.00 581212.70 4194635.17
-0.49   16.90
    11 1
'Link_84                                ' 'AG' 581168.05 4194653.42 581186.74 4194645.00
0.20   16.90
    12 1
'Link_85                                ' 'AG' 581128.97 4194668.73 581168.05 4194653.42
1.85   16.90
    13 1
'Link_86                                ' 'AG' 581090.56 4194683.48 581128.97 4194668.73
3.20   16.90
    14 1
'Link_87                                ' 'AG' 581069.26 4194693.64 581090.56 4194683.48
```

```
3.88   16.90
    15 1
'Link_88                                ' 'AG' 581030.16 4194708.27 581069.26 4194693.64
4.96   16.90
    16 1
'Link_89                                ' 'AG' 581005.78 4194717.84 581030.16 4194708.27
5.92   16.90
    17 1
'Link_90                                ' 'AG' 580974.93 4194730.58 581005.78 4194717.84
8.54   16.90
    18 1
'Link_91                                ' 'AG' 580930.77 4194748.21 580974.93 4194730.58
10.00   16.90
 1     0.00
      1   223.31 72.44
      2   223.31 72.44
      3   223.31 72.44
      4   223.31 72.44
      5   223.31 72.44
      6   223.31 72.44
      7   223.31 72.44
      8   223.31 72.44
      9   223.31 72.44
     10   223.31 72.44
     11   223.31 72.44
     12   223.31 72.44
     13   223.31 72.44
     14   327.79 72.44
     15   327.79 72.44
     16   327.79 72.44
     17   327.79 72.44
     18   327.79 72.44
 2     0.00
      1    72.37 74.29
      2    72.37 74.29
      3    72.37 74.29
      4    72.37 74.29
      5    72.37 74.29
      6    72.37 74.29
      7    72.37 74.29
      8    72.37 74.29
      9    72.37 74.29
     10    72.37 74.29
     11    72.37 74.29
     12    72.37 74.29
     13    72.37 74.29
     14   106.23 74.29
     15   106.23 74.29
     16   106.23 74.29
     17   106.23 74.29
     18   106.23 74.29
 3     0.00
      1    71.11 100.15
      2    71.11 100.15
```

```
      3    71.11 100.15
      4    71.11 100.15
      5    71.11 100.15
      6    71.11 100.15
      7    71.11 100.15
      8    71.11 100.15
      9    71.11 100.15
     10    71.11 100.15
     11    71.11 100.15
     12    71.11 100.15
     13    71.11 100.15
     14   104.37 100.15
     15   104.37 100.15
     16   104.37 100.15
     17   104.37 100.15
     18   104.37 100.15
4     0.00
      1    33.23 79.63
      2    33.23 79.63
      3    33.23 79.63
      4    33.23 79.63
      5    33.23 79.63
      6    33.23 79.63
      7    33.23 79.63
      8    33.23 79.63
      9    33.23 79.63
     10    33.23 79.63
     11    33.23 79.63
     12    33.23 79.63
     13    33.23 79.63
     14    48.78 79.63
     15    48.78 79.63
     16    48.78 79.63
     17    48.78 79.63
     18    48.78 79.63
5     0.00
      1    94.02 77.16
      2    94.02 77.16
      3    94.02 77.16
      4    94.02 77.16
      5    94.02 77.16
      6    94.02 77.16
      7    94.02 77.16
      8    94.02 77.16
      9    94.02 77.16
     10    94.02 77.16
     11    94.02 77.16
     12    94.02 77.16
     13    94.02 77.16
     14   138.00 77.16
     15   138.00 77.16
     16   138.00 77.16
     17   138.00 77.16
     18   138.00 77.16
```

```
6     0.00
     1   173.59 79.84
     2   173.59 79.84
     3   173.59 79.84
     4   173.59 79.84
     5   173.59 79.84
     6   173.59 79.84
     7   173.59 79.84
     8   173.59 79.84
     9   173.59 79.84
    10   173.59 79.84
    11   173.59 79.84
    12   173.59 79.84
    13   173.59 79.84
    14   254.82 79.84
    15   254.82 79.84
    16   254.82 79.84
    17   254.82 79.84
    18   254.82 79.84
7     0.00
     1   788.01 72.46
     2   788.01 72.46
     3   788.01 72.46
     4   788.01 72.46
     5   788.01 72.46
     6   788.01 72.46
     7   788.01 72.46
     8   788.01 72.46
     9   788.01 72.46
    10   788.01 72.46
    11   788.01 72.46
    12   788.01 72.46
    13   788.01 72.46
    14  1156.72 72.46
    15  1156.72 72.46
    16  1156.72 72.46
    17  1156.72 72.46
    18  1156.72 72.46
8     0.00
     1  1672.70 71.95
     2  1672.70 71.95
     3  1672.70 71.95
     4  1672.70 71.95
     5  1672.70 71.95
     6  1672.70 71.95
     7  1672.70 71.95
     8  1672.70 71.95
     9  1672.70 71.95
    10  1672.70 71.95
    11  1672.70 71.95
    12  1672.70 71.95
    13  1672.70 71.95
    14  2455.34 71.95
    15  2455.34 71.95
```

```
    16  2455.34 71.95
    17  2455.34 71.95
    18  2455.34 71.95
9     0.00
     1  1513.83 74.88
     2  1513.83 74.88
     3  1513.83 74.88
     4  1513.83 74.88
     5  1513.83 74.88
     6  1513.83 74.88
     7  1513.83 74.88
     8  1513.83 74.88
     9  1513.83 74.88
    10  1513.83 74.88
    11  1513.83 74.88
    12  1513.83 74.88
    13  1513.83 74.88
    14  2222.14 74.88
    15  2222.14 74.88
    16  2222.14 74.88
    17  2222.14 74.88
    18  2222.14 74.88
10     0.00
     1   908.30 75.60
     2   908.30 75.60
     3   908.30 75.60
     4   908.30 75.60
     5   908.30 75.60
     6   908.30 75.60
     7   908.30 75.60
     8   908.30 75.60
     9   908.30 75.60
    10   908.30 75.60
    11   908.30 75.60
    12   908.30 75.60
    13   908.30 75.60
    14  1333.29 75.60
    15  1333.29 75.60
    16  1333.29 75.60
    17  1333.29 75.60
    18  1333.29 75.60
11     0.00
     1   979.40 74.54
     2   979.40 74.54
     3   979.40 74.54
     4   979.40 74.54
     5   979.40 74.54
     6   979.40 74.54
     7   979.40 74.54
     8   979.40 74.54
     9   979.40 74.54
    10   979.40 74.54
    11   979.40 74.54
    12   979.40 74.54
```

```
    13   979.40 74.54
    14  1437.65 74.54
    15  1437.65 74.54
    16  1437.65 74.54
    17  1437.65 74.54
    18  1437.65 74.54
12     0.00
     1  1241.14 74.05
     2  1241.14 74.05
     3  1241.14 74.05
     4  1241.14 74.05
     5  1241.14 74.05
     6  1241.14 74.05
     7  1241.14 74.05
     8  1241.14 74.05
     9  1241.14 74.05
    10  1241.14 74.05
    11  1241.14 74.05
    12  1241.14 74.05
    13  1241.14 74.05
    14  1821.86 74.05
    15  1821.86 74.05
    16  1821.86 74.05
    17  1821.86 74.05
    18  1821.86 74.05
13     0.00
     1  1306.22 72.78
     2  1306.22 72.78
     3  1306.22 72.78
     4  1306.22 72.78
     5  1306.22 72.78
     6  1306.22 72.78
     7  1306.22 72.78
     8  1306.22 72.78
     9  1306.22 72.78
    10  1306.22 72.78
    11  1306.22 72.78
    12  1306.22 72.78
    13  1306.22 72.78
    14  1917.39 72.78
    15  1917.39 72.78
    16  1917.39 72.78
    17  1917.39 72.78
    18  1917.39 72.78
14     0.00
     1  1281.60 73.52
     2  1281.60 73.52
     3  1281.60 73.52
     4  1281.60 73.52
     5  1281.60 73.52
     6  1281.60 73.52
     7  1281.60 73.52
     8  1281.60 73.52
     9  1281.60 73.52
```

```
    10  1281.60 73.52
    11  1281.60 73.52
    12  1281.60 73.52
    13  1281.60 73.52
    14  1881.25 73.52
    15  1881.25 73.52
    16  1881.25 73.52
    17  1881.25 73.52
    18  1881.25 73.52
15     0.00
     1  1502.07 72.77
     2  1502.07 72.77
     3  1502.07 72.77
     4  1502.07 72.77
     5  1502.07 72.77
     6  1502.07 72.77
     7  1502.07 72.77
     8  1502.07 72.77
     9  1502.07 72.77
    10  1502.07 72.77
    11  1502.07 72.77
    12  1502.07 72.77
    13  1502.07 72.77
    14  2204.87 72.77
    15  2204.87 72.77
    16  2204.87 72.77
    17  2204.87 72.77
    18  2204.87 72.77
16     0.00
     1  1541.75 73.39
     2  1541.75 73.39
     3  1541.75 73.39
     4  1541.75 73.39
     5  1541.75 73.39
     6  1541.75 73.39
     7  1541.75 73.39
     8  1541.75 73.39
     9  1541.75 73.39
    10  1541.75 73.39
    11  1541.75 73.39
    12  1541.75 73.39
    13  1541.75 73.39
    14  2263.11 73.39
    15  2263.11 73.39
    16  2263.11 73.39
    17  2263.11 73.39
    18  2263.11 73.39
17     0.00
     1  1588.43 74.73
     2  1588.43 74.73
     3  1588.43 74.73
     4  1588.43 74.73
     5  1588.43 74.73
     6  1588.43 74.73
```

```
      7  1588.43 74.73
      8  1588.43 74.73
      9  1588.43 74.73
     10  1588.43 74.73
     11  1588.43 74.73
     12  1588.43 74.73
     13  1588.43 74.73
     14  2331.64 74.73
     15  2331.64 74.73
     16  2331.64 74.73
     17  2331.64 74.73
     18  2331.64 74.73
18     0.00
      1  1772.00 73.52
      2  1772.00 73.52
      3  1772.00 73.52
      4  1772.00 73.52
      5  1772.00 73.52
      6  1772.00 73.52
      7  1772.00 73.52
      8  1772.00 73.52
      9  1772.00 73.52
     10  1772.00 73.52
     11  1772.00 73.52
     12  1772.00 73.52
     13  1772.00 73.52
     14  2601.10 73.52
     15  2601.10 73.52
     16  2601.10 73.52
     17  2601.10 73.52
     18  2601.10 73.52
19     0.00
      1  1233.64 72.57
      2  1233.64 72.57
      3  1233.64 72.57
      4  1233.64 72.57
      5  1233.64 72.57
      6  1233.64 72.57
      7  1233.64 72.57
      8  1233.64 72.57
      9  1233.64 72.57
     10  1233.64 72.57
     11  1233.64 72.57
     12  1233.64 72.57
     13  1233.64 72.57
     14  1810.85 72.57
     15  1810.85 72.57
     16  1810.85 72.57
     17  1810.85 72.57
     18  1810.85 72.57
20     0.00
      1   930.87 72.73
      2   930.87 72.73
      3   930.87 72.73
```

```
     4   930.87 72.73
     5   930.87 72.73
     6   930.87 72.73
     7   930.87 72.73
     8   930.87 72.73
     9   930.87 72.73
    10   930.87 72.73
    11   930.87 72.73
    12   930.87 72.73
    13   930.87 72.73
    14  1366.42 72.73
    15  1366.42 72.73
    16  1366.42 72.73
    17  1366.42 72.73
    18  1366.42 72.73
21     0.00
     1   692.80 71.91
     2   692.80 71.91
     3   692.80 71.91
     4   692.80 71.91
     5   692.80 71.91
     6   692.80 71.91
     7   692.80 71.91
     8   692.80 71.91
     9   692.80 71.91
    10   692.80 71.91
    11   692.80 71.91
    12   692.80 71.91
    13   692.80 71.91
    14  1016.96 71.91
    15  1016.96 71.91
    16  1016.96 71.91
    17  1016.96 71.91
    18  1016.96 71.91
22     0.00
     1   694.09 71.74
     2   694.09 71.74
     3   694.09 71.74
     4   694.09 71.74
     5   694.09 71.74
     6   694.09 71.74
     7   694.09 71.74
     8   694.09 71.74
     9   694.09 71.74
    10   694.09 71.74
    11   694.09 71.74
    12   694.09 71.74
    13   694.09 71.74
    14  1018.85 71.74
    15  1018.85 71.74
    16  1018.85 71.74
    17  1018.85 71.74
    18  1018.85 71.74
23     0.00
```

```
      1   521.83 72.22
      2   521.83 72.22
      3   521.83 72.22
      4   521.83 72.22
      5   521.83 72.22
      6   521.83 72.22
      7   521.83 72.22
      8   521.83 72.22
      9   521.83 72.22
     10   521.83 72.22
     11   521.83 72.22
     12   521.83 72.22
     13   521.83 72.22
     14   765.99 72.22
     15   765.99 72.22
     16   765.99 72.22
     17   765.99 72.22
     18   765.99 72.22
24     0.00
      1   404.24 72.95
      2   404.24 72.95
      3   404.24 72.95
      4   404.24 72.95
      5   404.24 72.95
      6   404.24 72.95
      7   404.24 72.95
      8   404.24 72.95
      9   404.24 72.95
     10   404.24 72.95
     11   404.24 72.95
     12   404.24 72.95
     13   404.24 72.95
     14   593.38 72.95
     15   593.38 72.95
     16   593.38 72.95
     17   593.38 72.95
     18   593.38 72.95
```

```
'EB24toSB680, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_74                                ' 'AG' 581420.19 4194612.96 581451.94 4194611.78
-10.00   16.90
    2 1
'Link_75                                ' 'AG' 581379.63 4194612.64 581420.19 4194612.96
-8.38   16.90
    3 1
'Link_76                                ' 'AG' 581342.01 4194613.34 581379.63 4194612.64
-6.79   16.90
    4 1
'Link_77                                ' 'AG' 581313.62 4194615.13 581342.01 4194613.34
-5.11   16.90
    5 1
'Link_78                                ' 'AG' 581293.14 4194616.95 581313.62 4194615.13
-3.42   16.90
    6 1
'Link_79                                ' 'AG' 581268.84 4194620.17 581293.14 4194616.95
-1.95   16.90
    7 1
'Link_80                                ' 'AG' 581248.96 4194624.37 581268.84 4194620.17
-1.06   16.90
    8 1
'Link_81                                ' 'AG' 581231.02 4194630.51 581248.96 4194624.37
-0.78   16.90
    9 1
'Link_82                                ' 'AG' 581212.70 4194635.17 581231.02 4194630.51
-0.70   16.90
    10 1
'Link_83                                ' 'AG' 581186.74 4194645.00 581212.70 4194635.17
-0.49   16.90
    11 1
'Link_84                                ' 'AG' 581168.05 4194653.42 581186.74 4194645.00
0.20   16.90
    12 1
'Link_85                                ' 'AG' 581128.97 4194668.73 581168.05 4194653.42
1.85   16.90
    13 1
'Link_86                                ' 'AG' 581090.56 4194683.48 581128.97 4194668.73
3.20   16.90
    14 1
'Link_87                                ' 'AG' 581069.26 4194693.64 581090.56 4194683.48
```

```
3.88   16.90
    15 1
'Link_88                                ' 'AG' 581030.16 4194708.27 581069.26 4194693.64
4.96   16.90
    16 1
'Link_89                                ' 'AG' 581005.78 4194717.84 581030.16 4194708.27
5.92   16.90
    17 1
'Link_90                                ' 'AG' 580974.93 4194730.58 581005.78 4194717.84
8.54   16.90
    18 1
'Link_91                                ' 'AG' 580930.77 4194748.21 580974.93 4194730.58
10.00   16.90
 1     0.00
      1   246.40 20.16
      2   246.40 20.16
      3   246.40 20.16
      4   246.40 20.16
      5   246.40 20.16
      6   246.40 20.16
      7   246.40 20.16
      8   246.40 20.16
      9   246.40 20.16
     10   246.40 20.16
     11   246.40 20.16
     12   246.40 20.16
     13   246.40 20.16
     14   361.68 20.16
     15   361.68 20.16
     16   361.68 20.16
     17   361.68 20.16
     18   361.68 20.16
 2     0.00
      1    91.77 23.07
      2    91.77 23.07
      3    91.77 23.07
      4    91.77 23.07
      5    91.77 23.07
      6    91.77 23.07
      7    91.77 23.07
      8    91.77 23.07
      9    91.77 23.07
     10    91.77 23.07
     11    91.77 23.07
     12    91.77 23.07
     13    91.77 23.07
     14   134.71 23.07
     15   134.71 23.07
     16   134.71 23.07
     17   134.71 23.07
     18   134.71 23.07
 3     0.00
      1    96.55 23.30
      2    96.55 23.30
```

```
      3    96.55 23.30
      4    96.55 23.30
      5    96.55 23.30
      6    96.55 23.30
      7    96.55 23.30
      8    96.55 23.30
      9    96.55 23.30
     10    96.55 23.30
     11    96.55 23.30
     12    96.55 23.30
     13    96.55 23.30
     14   141.73 23.30
     15   141.73 23.30
     16   141.73 23.30
     17   141.73 23.30
     18   141.73 23.30
4     0.00
      1    51.63 25.05
      2    51.63 25.05
      3    51.63 25.05
      4    51.63 25.05
      5    51.63 25.05
      6    51.63 25.05
      7    51.63 25.05
      8    51.63 25.05
      9    51.63 25.05
     10    51.63 25.05
     11    51.63 25.05
     12    51.63 25.05
     13    51.63 25.05
     14    75.79 25.05
     15    75.79 25.05
     16    75.79 25.05
     17    75.79 25.05
     18    75.79 25.05
5     0.00
      1   108.44 20.91
      2   108.44 20.91
      3   108.44 20.91
      4   108.44 20.91
      5   108.44 20.91
      6   108.44 20.91
      7   108.44 20.91
      8   108.44 20.91
      9   108.44 20.91
     10   108.44 20.91
     11   108.44 20.91
     12   108.44 20.91
     13   108.44 20.91
     14   159.18 20.91
     15   159.18 20.91
     16   159.18 20.91
     17   159.18 20.91
     18   159.18 20.91
```

```
6     0.00
     1   189.06 20.02
     2   189.06 20.02
     3   189.06 20.02
     4   189.06 20.02
     5   189.06 20.02
     6   189.06 20.02
     7   189.06 20.02
     8   189.06 20.02
     9   189.06 20.02
    10   189.06 20.02
    11   189.06 20.02
    12   189.06 20.02
    13   189.06 20.02
    14   277.52 20.02
    15   277.52 20.02
    16   277.52 20.02
    17   277.52 20.02
    18   277.52 20.02
7     0.00
     1   814.08 18.76
     2   814.08 18.76
     3   814.08 18.76
     4   814.08 18.76
     5   814.08 18.76
     6   814.08 18.76
     7   814.08 18.76
     8   814.08 18.76
     9   814.08 18.76
    10   814.08 18.76
    11   814.08 18.76
    12   814.08 18.76
    13   814.08 18.76
    14  1194.99 18.76
    15  1194.99 18.76
    16  1194.99 18.76
    17  1194.99 18.76
    18  1194.99 18.76
8     0.00
     1  1698.16 18.29
     2  1698.16 18.29
     3  1698.16 18.29
     4  1698.16 18.29
     5  1698.16 18.29
     6  1698.16 18.29
     7  1698.16 18.29
     8  1698.16 18.29
     9  1698.16 18.29
    10  1698.16 18.29
    11  1698.16 18.29
    12  1698.16 18.29
    13  1698.16 18.29
    14  2492.71 18.29
    15  2492.71 18.29
```

```
    16  2492.71 18.29
    17  2492.71 18.29
    18  2492.71 18.29
9     0.00
     1  1548.09 18.50
     2  1548.09 18.50
     3  1548.09 18.50
     4  1548.09 18.50
     5  1548.09 18.50
     6  1548.09 18.50
     7  1548.09 18.50
     8  1548.09 18.50
     9  1548.09 18.50
    10  1548.09 18.50
    11  1548.09 18.50
    12  1548.09 18.50
    13  1548.09 18.50
    14  2272.43 18.50
    15  2272.43 18.50
    16  2272.43 18.50
    17  2272.43 18.50
    18  2272.43 18.50
10    0.00
     1   944.99 19.04
     2   944.99 19.04
     3   944.99 19.04
     4   944.99 19.04
     5   944.99 19.04
     6   944.99 19.04
     7   944.99 19.04
     8   944.99 19.04
     9   944.99 19.04
    10   944.99 19.04
    11   944.99 19.04
    12   944.99 19.04
    13   944.99 19.04
    14  1387.14 19.04
    15  1387.14 19.04
    16  1387.14 19.04
    17  1387.14 19.04
    18  1387.14 19.04
11    0.00
     1  1013.49 18.88
     2  1013.49 18.88
     3  1013.49 18.88
     4  1013.49 18.88
     5  1013.49 18.88
     6  1013.49 18.88
     7  1013.49 18.88
     8  1013.49 18.88
     9  1013.49 18.88
    10  1013.49 18.88
    11  1013.49 18.88
    12  1013.49 18.88
```

```
    13  1013.49 18.88
    14  1487.69 18.88
    15  1487.69 18.88
    16  1487.69 18.88
    17  1487.69 18.88
    18  1487.69 18.88
12     0.00
     1  1277.50 18.75
     2  1277.50 18.75
     3  1277.50 18.75
     4  1277.50 18.75
     5  1277.50 18.75
     6  1277.50 18.75
     7  1277.50 18.75
     8  1277.50 18.75
     9  1277.50 18.75
    10  1277.50 18.75
    11  1277.50 18.75
    12  1277.50 18.75
    13  1277.50 18.75
    14  1875.24 18.75
    15  1875.24 18.75
    16  1875.24 18.75
    17  1875.24 18.75
    18  1875.24 18.75
13     0.00
     1  1338.01 18.67
     2  1338.01 18.67
     3  1338.01 18.67
     4  1338.01 18.67
     5  1338.01 18.67
     6  1338.01 18.67
     7  1338.01 18.67
     8  1338.01 18.67
     9  1338.01 18.67
    10  1338.01 18.67
    11  1338.01 18.67
    12  1338.01 18.67
    13  1338.01 18.67
    14  1964.05 18.67
    15  1964.05 18.67
    16  1964.05 18.67
    17  1964.05 18.67
    18  1964.05 18.67
14     0.00
     1  1314.01 18.69
     2  1314.01 18.69
     3  1314.01 18.69
     4  1314.01 18.69
     5  1314.01 18.69
     6  1314.01 18.69
     7  1314.01 18.69
     8  1314.01 18.69
     9  1314.01 18.69
```

```
    10  1314.01 18.69
    11  1314.01 18.69
    12  1314.01 18.69
    13  1314.01 18.69
    14  1928.82 18.69
    15  1928.82 18.69
    16  1928.82 18.69
    17  1928.82 18.69
    18  1928.82 18.69
15     0.00
     1  1528.77 18.51
     2  1528.77 18.51
     3  1528.77 18.51
     4  1528.77 18.51
     5  1528.77 18.51
     6  1528.77 18.51
     7  1528.77 18.51
     8  1528.77 18.51
     9  1528.77 18.51
    10  1528.77 18.51
    11  1528.77 18.51
    12  1528.77 18.51
    13  1528.77 18.51
    14  2244.06 18.51
    15  2244.06 18.51
    16  2244.06 18.51
    17  2244.06 18.51
    18  2244.06 18.51
16     0.00
     1  1562.50 18.37
     2  1562.50 18.37
     3  1562.50 18.37
     4  1562.50 18.37
     5  1562.50 18.37
     6  1562.50 18.37
     7  1562.50 18.37
     8  1562.50 18.37
     9  1562.50 18.37
    10  1562.50 18.37
    11  1562.50 18.37
    12  1562.50 18.37
    13  1562.50 18.37
    14  2293.57 18.37
    15  2293.57 18.37
    16  2293.57 18.37
    17  2293.57 18.37
    18  2293.57 18.37
17     0.00
     1  1615.16 18.48
     2  1615.16 18.48
     3  1615.16 18.48
     4  1615.16 18.48
     5  1615.16 18.48
     6  1615.16 18.48
```

```
     7  1615.16 18.48
     8  1615.16 18.48
     9  1615.16 18.48
    10  1615.16 18.48
    11  1615.16 18.48
    12  1615.16 18.48
    13  1615.16 18.48
    14  2370.88 18.48
    15  2370.88 18.48
    16  2370.88 18.48
    17  2370.88 18.48
    18  2370.88 18.48
18     0.00
     1  1795.51 18.32
     2  1795.51 18.32
     3  1795.51 18.32
     4  1795.51 18.32
     5  1795.51 18.32
     6  1795.51 18.32
     7  1795.51 18.32
     8  1795.51 18.32
     9  1795.51 18.32
    10  1795.51 18.32
    11  1795.51 18.32
    12  1795.51 18.32
    13  1795.51 18.32
    14  2635.61 18.32
    15  2635.61 18.32
    16  2635.61 18.32
    17  2635.61 18.32
    18  2635.61 18.32
19     0.00
     1  1252.42 18.39
     2  1252.42 18.39
     3  1252.42 18.39
     4  1252.42 18.39
     5  1252.42 18.39
     6  1252.42 18.39
     7  1252.42 18.39
     8  1252.42 18.39
     9  1252.42 18.39
    10  1252.42 18.39
    11  1252.42 18.39
    12  1252.42 18.39
    13  1252.42 18.39
    14  1838.41 18.39
    15  1838.41 18.39
    16  1838.41 18.39
    17  1838.41 18.39
    18  1838.41 18.39
20     0.00
     1   939.59 18.26
     2   939.59 18.26
     3   939.59 18.26
```

```
     4   939.59 18.26
     5   939.59 18.26
     6   939.59 18.26
     7   939.59 18.26
     8   939.59 18.26
     9   939.59 18.26
    10   939.59 18.26
    11   939.59 18.26
    12   939.59 18.26
    13   939.59 18.26
    14  1379.22 18.26
    15  1379.22 18.26
    16  1379.22 18.26
    17  1379.22 18.26
    18  1379.22 18.26
21     0.00
     1   711.45 18.64
     2   711.45 18.64
     3   711.45 18.64
     4   711.45 18.64
     5   711.45 18.64
     6   711.45 18.64
     7   711.45 18.64
     8   711.45 18.64
     9   711.45 18.64
    10   711.45 18.64
    11   711.45 18.64
    12   711.45 18.64
    13   711.45 18.64
    14  1044.33 18.64
    15  1044.33 18.64
    16  1044.33 18.64
    17  1044.33 18.64
    18  1044.33 18.64
22     0.00
     1   714.07 18.78
     2   714.07 18.78
     3   714.07 18.78
     4   714.07 18.78
     5   714.07 18.78
     6   714.07 18.78
     7   714.07 18.78
     8   714.07 18.78
     9   714.07 18.78
    10   714.07 18.78
    11   714.07 18.78
    12   714.07 18.78
    13   714.07 18.78
    14  1048.17 18.78
    15  1048.17 18.78
    16  1048.17 18.78
    17  1048.17 18.78
    18  1048.17 18.78
23     0.00
```

```
     1   536.70 18.80
     2   536.70 18.80
     3   536.70 18.80
     4   536.70 18.80
     5   536.70 18.80
     6   536.70 18.80
     7   536.70 18.80
     8   536.70 18.80
     9   536.70 18.80
    10   536.70 18.80
    11   536.70 18.80
    12   536.70 18.80
    13   536.70 18.80
    14   787.81 18.80
    15   787.81 18.80
    16   787.81 18.80
    17   787.81 18.80
    18   787.81 18.80
24     0.00
     1   411.67 18.51
     2   411.67 18.51
     3   411.67 18.51
     4   411.67 18.51
     5   411.67 18.51
     6   411.67 18.51
     7   411.67 18.51
     8   411.67 18.51
     9   411.67 18.51
    10   411.67 18.51
    11   411.67 18.51
    12   411.67 18.51
    13   411.67 18.51
    14   604.28 18.51
    15   604.28 18.51
    16   604.28 18.51
    17   604.28 18.51
    18   604.28 18.51
```

```
'EB24toSB680, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_74                                ' 'AG' 581420.19 4194612.96 581451.94 4194611.78
-10.00   16.90
    2 1
'Link_75                                ' 'AG' 581379.63 4194612.64 581420.19 4194612.96
-8.38   16.90
    3 1
'Link_76                                ' 'AG' 581342.01 4194613.34 581379.63 4194612.64
-6.79   16.90
    4 1
'Link_77                                ' 'AG' 581313.62 4194615.13 581342.01 4194613.34
-5.11   16.90
    5 1
'Link_78                                ' 'AG' 581293.14 4194616.95 581313.62 4194615.13
-3.42   16.90
    6 1
'Link_79                                ' 'AG' 581268.84 4194620.17 581293.14 4194616.95
-1.95   16.90
    7 1
'Link_80                                ' 'AG' 581248.96 4194624.37 581268.84 4194620.17
-1.06   16.90
    8 1
'Link_81                                ' 'AG' 581231.02 4194630.51 581248.96 4194624.37
-0.78   16.90
    9 1
'Link_82                                ' 'AG' 581212.70 4194635.17 581231.02 4194630.51
-0.70   16.90
    10 1
'Link_83                                ' 'AG' 581186.74 4194645.00 581212.70 4194635.17
-0.49   16.90
    11 1
'Link_84                                ' 'AG' 581168.05 4194653.42 581186.74 4194645.00
0.20   16.90
    12 1
'Link_85                                ' 'AG' 581128.97 4194668.73 581168.05 4194653.42
1.85   16.90
    13 1
'Link_86                                ' 'AG' 581090.56 4194683.48 581128.97 4194668.73
3.20   16.90
    14 1
'Link_87                                ' 'AG' 581069.26 4194693.64 581090.56 4194683.48
```

```
3.88   16.90
    15 1
'Link_88                                ' 'AG' 581030.16 4194708.27 581069.26 4194693.64
4.96   16.90
    16 1
'Link_89                                ' 'AG' 581005.78 4194717.84 581030.16 4194708.27
5.92   16.90
    17 1
'Link_90                                ' 'AG' 580974.93 4194730.58 581005.78 4194717.84
8.54   16.90
    18 1
'Link_91                                ' 'AG' 580930.77 4194748.21 580974.93 4194730.58
10.00   16.90
 1     0.00
      1   246.40 7.66
      2   246.40 7.66
      3   246.40 7.66
      4   246.40 7.66
      5   246.40 7.66
      6   246.40 7.66
      7   246.40 7.66
      8   246.40 7.66
      9   246.40 7.66
     10   246.40 7.66
     11   246.40 7.66
     12   246.40 7.66
     13   246.40 7.66
     14   361.68 7.66
     15   361.68 7.66
     16   361.68 7.66
     17   361.68 7.66
     18   361.68 7.66
 2     0.00
      1    91.77 13.49
      2    91.77 13.49
      3    91.77 13.49
      4    91.77 13.49
      5    91.77 13.49
      6    91.77 13.49
      7    91.77 13.49
      8    91.77 13.49
      9    91.77 13.49
     10    91.77 13.49
     11    91.77 13.49
     12    91.77 13.49
     13    91.77 13.49
     14   134.71 13.49
     15   134.71 13.49
     16   134.71 13.49
     17   134.71 13.49
     18   134.71 13.49
 3     0.00
      1    96.55 15.54
      2    96.55 15.54
```

```
      3    96.55 15.54
      4    96.55 15.54
      5    96.55 15.54
      6    96.55 15.54
      7    96.55 15.54
      8    96.55 15.54
      9    96.55 15.54
     10    96.55 15.54
     11    96.55 15.54
     12    96.55 15.54
     13    96.55 15.54
     14   141.73 15.54
     15   141.73 15.54
     16   141.73 15.54
     17   141.73 15.54
     18   141.73 15.54
4      0.00
      1    51.63 26.12
      2    51.63 26.12
      3    51.63 26.12
      4    51.63 26.12
      5    51.63 26.12
      6    51.63 26.12
      7    51.63 26.12
      8    51.63 26.12
      9    51.63 26.12
     10    51.63 26.12
     11    51.63 26.12
     12    51.63 26.12
     13    51.63 26.12
     14    75.79 26.12
     15    75.79 26.12
     16    75.79 26.12
     17    75.79 26.12
     18    75.79 26.12
5      0.00
      1   108.44 10.09
      2   108.44 10.09
      3   108.44 10.09
      4   108.44 10.09
      5   108.44 10.09
      6   108.44 10.09
      7   108.44 10.09
      8   108.44 10.09
      9   108.44 10.09
     10   108.44 10.09
     11   108.44 10.09
     12   108.44 10.09
     13   108.44 10.09
     14   159.18 10.09
     15   159.18 10.09
     16   159.18 10.09
     17   159.18 10.09
     18   159.18 10.09
```

```
6     0.00
     1   189.06 7.97
     2   189.06 7.97
     3   189.06 7.97
     4   189.06 7.97
     5   189.06 7.97
     6   189.06 7.97
     7   189.06 7.97
     8   189.06 7.97
     9   189.06 7.97
    10   189.06 7.97
    11   189.06 7.97
    12   189.06 7.97
    13   189.06 7.97
    14   277.52 7.97
    15   277.52 7.97
    16   277.52 7.97
    17   277.52 7.97
    18   277.52 7.97
7     0.00
     1   814.08 4.19
     2   814.08 4.19
     3   814.08 4.19
     4   814.08 4.19
     5   814.08 4.19
     6   814.08 4.19
     7   814.08 4.19
     8   814.08 4.19
     9   814.08 4.19
    10   814.08 4.19
    11   814.08 4.19
    12   814.08 4.19
    13   814.08 4.19
    14  1194.99 4.19
    15  1194.99 4.19
    16  1194.99 4.19
    17  1194.99 4.19
    18  1194.99 4.19
8     0.00
     1  1698.16 2.83
     2  1698.16 2.83
     3  1698.16 2.83
     4  1698.16 2.83
     5  1698.16 2.83
     6  1698.16 2.83
     7  1698.16 2.83
     8  1698.16 2.83
     9  1698.16 2.83
    10  1698.16 2.83
    11  1698.16 2.83
    12  1698.16 2.83
    13  1698.16 2.83
    14  2492.71 2.83
    15  2492.71 2.83
```

```
    16  2492.71 2.83
    17  2492.71 2.83
    18  2492.71 2.83
9     0.00
     1  1548.09 3.27
     2  1548.09 3.27
     3  1548.09 3.27
     4  1548.09 3.27
     5  1548.09 3.27
     6  1548.09 3.27
     7  1548.09 3.27
     8  1548.09 3.27
     9  1548.09 3.27
    10  1548.09 3.27
    11  1548.09 3.27
    12  1548.09 3.27
    13  1548.09 3.27
    14  2272.43 3.27
    15  2272.43 3.27
    16  2272.43 3.27
    17  2272.43 3.27
    18  2272.43 3.27
10     0.00
     1   944.99 4.52
     2   944.99 4.52
     3   944.99 4.52
     4   944.99 4.52
     5   944.99 4.52
     6   944.99 4.52
     7   944.99 4.52
     8   944.99 4.52
     9   944.99 4.52
    10   944.99 4.52
    11   944.99 4.52
    12   944.99 4.52
    13   944.99 4.52
    14  1387.14 4.52
    15  1387.14 4.52
    16  1387.14 4.52
    17  1387.14 4.52
    18  1387.14 4.52
11     0.00
     1  1013.49 4.13
     2  1013.49 4.13
     3  1013.49 4.13
     4  1013.49 4.13
     5  1013.49 4.13
     6  1013.49 4.13
     7  1013.49 4.13
     8  1013.49 4.13
     9  1013.49 4.13
    10  1013.49 4.13
    11  1013.49 4.13
    12  1013.49 4.13
```

```
    13  1013.49 4.13
    14  1487.69 4.13
    15  1487.69 4.13
    16  1487.69 4.13
    17  1487.69 4.13
    18  1487.69 4.13
12     0.00
     1  1277.50 3.79
     2  1277.50 3.79
     3  1277.50 3.79
     4  1277.50 3.79
     5  1277.50 3.79
     6  1277.50 3.79
     7  1277.50 3.79
     8  1277.50 3.79
     9  1277.50 3.79
    10  1277.50 3.79
    11  1277.50 3.79
    12  1277.50 3.79
    13  1277.50 3.79
    14  1875.24 3.79
    15  1875.24 3.79
    16  1875.24 3.79
    17  1875.24 3.79
    18  1875.24 3.79
13     0.00
     1  1338.01 3.52
     2  1338.01 3.52
     3  1338.01 3.52
     4  1338.01 3.52
     5  1338.01 3.52
     6  1338.01 3.52
     7  1338.01 3.52
     8  1338.01 3.52
     9  1338.01 3.52
    10  1338.01 3.52
    11  1338.01 3.52
    12  1338.01 3.52
    13  1338.01 3.52
    14  1964.05 3.52
    15  1964.05 3.52
    16  1964.05 3.52
    17  1964.05 3.52
    18  1964.05 3.52
14     0.00
     1  1314.01 3.57
     2  1314.01 3.57
     3  1314.01 3.57
     4  1314.01 3.57
     5  1314.01 3.57
     6  1314.01 3.57
     7  1314.01 3.57
     8  1314.01 3.57
     9  1314.01 3.57
```

```
    10  1314.01 3.57
    11  1314.01 3.57
    12  1314.01 3.57
    13  1314.01 3.57
    14  1928.82 3.57
    15  1928.82 3.57
    16  1928.82 3.57
    17  1928.82 3.57
    18  1928.82 3.57
15     0.00
     1  1528.77 3.09
     2  1528.77 3.09
     3  1528.77 3.09
     4  1528.77 3.09
     5  1528.77 3.09
     6  1528.77 3.09
     7  1528.77 3.09
     8  1528.77 3.09
     9  1528.77 3.09
    10  1528.77 3.09
    11  1528.77 3.09
    12  1528.77 3.09
    13  1528.77 3.09
    14  2244.06 3.09
    15  2244.06 3.09
    16  2244.06 3.09
    17  2244.06 3.09
    18  2244.06 3.09
16     0.00
     1  1562.50 2.75
     2  1562.50 2.75
     3  1562.50 2.75
     4  1562.50 2.75
     5  1562.50 2.75
     6  1562.50 2.75
     7  1562.50 2.75
     8  1562.50 2.75
     9  1562.50 2.75
    10  1562.50 2.75
    11  1562.50 2.75
    12  1562.50 2.75
    13  1562.50 2.75
    14  2293.57 2.75
    15  2293.57 2.75
    16  2293.57 2.75
    17  2293.57 2.75
    18  2293.57 2.75
17     0.00
     1  1615.16 3.03
     2  1615.16 3.03
     3  1615.16 3.03
     4  1615.16 3.03
     5  1615.16 3.03
     6  1615.16 3.03
```

```
     7  1615.16 3.03
     8  1615.16 3.03
     9  1615.16 3.03
    10  1615.16 3.03
    11  1615.16 3.03
    12  1615.16 3.03
    13  1615.16 3.03
    14  2370.88 3.03
    15  2370.88 3.03
    16  2370.88 3.03
    17  2370.88 3.03
    18  2370.88 3.03
18     0.00
     1  1795.51 2.62
     2  1795.51 2.62
     3  1795.51 2.62
     4  1795.51 2.62
     5  1795.51 2.62
     6  1795.51 2.62
     7  1795.51 2.62
     8  1795.51 2.62
     9  1795.51 2.62
    10  1795.51 2.62
    11  1795.51 2.62
    12  1795.51 2.62
    13  1795.51 2.62
    14  2635.61 2.62
    15  2635.61 2.62
    16  2635.61 2.62
    17  2635.61 2.62
    18  2635.61 2.62
19     0.00
     1  1252.42 2.77
     2  1252.42 2.77
     3  1252.42 2.77
     4  1252.42 2.77
     5  1252.42 2.77
     6  1252.42 2.77
     7  1252.42 2.77
     8  1252.42 2.77
     9  1252.42 2.77
    10  1252.42 2.77
    11  1252.42 2.77
    12  1252.42 2.77
    13  1252.42 2.77
    14  1838.41 2.77
    15  1838.41 2.77
    16  1838.41 2.77
    17  1838.41 2.77
    18  1838.41 2.77
20     0.00
     1   939.59 2.45
     2   939.59 2.45
     3   939.59 2.45
```

```
     4   939.59 2.45
     5   939.59 2.45
     6   939.59 2.45
     7   939.59 2.45
     8   939.59 2.45
     9   939.59 2.45
    10   939.59 2.45
    11   939.59 2.45
    12   939.59 2.45
    13   939.59 2.45
    14  1379.22 2.45
    15  1379.22 2.45
    16  1379.22 2.45
    17  1379.22 2.45
    18  1379.22 2.45
21     0.00
     1   711.45 3.53
     2   711.45 3.53
     3   711.45 3.53
     4   711.45 3.53
     5   711.45 3.53
     6   711.45 3.53
     7   711.45 3.53
     8   711.45 3.53
     9   711.45 3.53
    10   711.45 3.53
    11   711.45 3.53
    12   711.45 3.53
    13   711.45 3.53
    14  1044.33 3.53
    15  1044.33 3.53
    16  1044.33 3.53
    17  1044.33 3.53
    18  1044.33 3.53
22     0.00
     1   714.07 3.81
     2   714.07 3.81
     3   714.07 3.81
     4   714.07 3.81
     5   714.07 3.81
     6   714.07 3.81
     7   714.07 3.81
     8   714.07 3.81
     9   714.07 3.81
    10   714.07 3.81
    11   714.07 3.81
    12   714.07 3.81
    13   714.07 3.81
    14  1048.17 3.81
    15  1048.17 3.81
    16  1048.17 3.81
    17  1048.17 3.81
    18  1048.17 3.81
23     0.00
```

```
      1   536.70 3.64
      2   536.70 3.64
      3   536.70 3.64
      4   536.70 3.64
      5   536.70 3.64
      6   536.70 3.64
      7   536.70 3.64
      8   536.70 3.64
      9   536.70 3.64
     10   536.70 3.64
     11   536.70 3.64
     12   536.70 3.64
     13   536.70 3.64
     14   787.81 3.64
     15   787.81 3.64
     16   787.81 3.64
     17   787.81 3.64
     18   787.81 3.64
24     0.00
      1   411.67 3.02
      2   411.67 3.02
      3   411.67 3.02
      4   411.67 3.02
      5   411.67 3.02
      6   411.67 3.02
      7   411.67 3.02
      8   411.67 3.02
      9   411.67 3.02
     10   411.67 3.02
     11   411.67 3.02
     12   411.67 3.02
     13   411.67 3.02
     14   604.28 3.02
     15   604.28 3.02
     16   604.28 3.02
     17   604.28 3.02
     18   604.28 3.02
```

```
'EB24toSB680, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_74                                ' 'AG' 581420.19 4194612.96 581451.94 4194611.78
-10.00   16.90
    2 1
'Link_75                                ' 'AG' 581379.63 4194612.64 581420.19 4194612.96
-8.38   16.90
    3 1
'Link_76                                ' 'AG' 581342.01 4194613.34 581379.63 4194612.64
-6.79   16.90
    4 1
'Link_77                                ' 'AG' 581313.62 4194615.13 581342.01 4194613.34
-5.11   16.90
    5 1
'Link_78                                ' 'AG' 581293.14 4194616.95 581313.62 4194615.13
-3.42   16.90
    6 1
'Link_79                                ' 'AG' 581268.84 4194620.17 581293.14 4194616.95
-1.95   16.90
    7 1
'Link_80                                ' 'AG' 581248.96 4194624.37 581268.84 4194620.17
-1.06   16.90
    8 1
'Link_81                                ' 'AG' 581231.02 4194630.51 581248.96 4194624.37
-0.78   16.90
    9 1
'Link_82                                ' 'AG' 581212.70 4194635.17 581231.02 4194630.51
-0.70   16.90
    10 1
'Link_83                                ' 'AG' 581186.74 4194645.00 581212.70 4194635.17
-0.49   16.90
    11 1
'Link_84                                ' 'AG' 581168.05 4194653.42 581186.74 4194645.00
0.20   16.90
    12 1
'Link_85                                ' 'AG' 581128.97 4194668.73 581168.05 4194653.42
1.85   16.90
    13 1
'Link_86                                ' 'AG' 581090.56 4194683.48 581128.97 4194668.73
3.20   16.90
    14 1
'Link_87                                ' 'AG' 581069.26 4194693.64 581090.56 4194683.48
```

```
3.88   16.90
    15 1
'Link_88                                ' 'AG' 581030.16 4194708.27 581069.26 4194693.64
4.96   16.90
    16 1
'Link_89                                ' 'AG' 581005.78 4194717.84 581030.16 4194708.27
5.92   16.90
    17 1
'Link_90                                ' 'AG' 580974.93 4194730.58 581005.78 4194717.84
8.54   16.90
    18 1
'Link_91                                ' 'AG' 580930.77 4194748.21 580974.93 4194730.58
10.00   16.90
 1     0.00
      1    23.09 70.39
      2    23.09 70.39
      3    23.09 70.39
      4    23.09 70.39
      5    23.09 70.39
      6    23.09 70.39
      7    23.09 70.39
      8    23.09 70.39
      9    23.09 70.39
     10    23.09 70.39
     11    23.09 70.39
     12    23.09 70.39
     13    23.09 70.39
     14    33.90 70.39
     15    33.90 70.39
     16    33.90 70.39
     17    33.90 70.39
     18    33.90 70.39
 2     0.00
      1    19.40 62.19
      2    19.40 62.19
      3    19.40 62.19
      4    19.40 62.19
      5    19.40 62.19
      6    19.40 62.19
      7    19.40 62.19
      8    19.40 62.19
      9    19.40 62.19
     10    19.40 62.19
     11    19.40 62.19
     12    19.40 62.19
     13    19.40 62.19
     14    28.48 62.19
     15    28.48 62.19
     16    28.48 62.19
     17    28.48 62.19
     18    28.48 62.19
 3     0.00
      1    25.45 58.32
      2    25.45 58.32
```

```
      3    25.45 58.32
      4    25.45 58.32
      5    25.45 58.32
      6    25.45 58.32
      7    25.45 58.32
      8    25.45 58.32
      9    25.45 58.32
     10    25.45 58.32
     11    25.45 58.32
     12    25.45 58.32
     13    25.45 58.32
     14    37.35 58.32
     15    37.35 58.32
     16    37.35 58.32
     17    37.35 58.32
     18    37.35 58.32
4      0.00
      1    18.40 76.15
      2    18.40 76.15
      3    18.40 76.15
      4    18.40 76.15
      5    18.40 76.15
      6    18.40 76.15
      7    18.40 76.15
      8    18.40 76.15
      9    18.40 76.15
     10    18.40 76.15
     11    18.40 76.15
     12    18.40 76.15
     13    18.40 76.15
     14    27.01 76.15
     15    27.01 76.15
     16    27.01 76.15
     17    27.01 76.15
     18    27.01 76.15
5      0.00
      1    14.43 69.86
      2    14.43 69.86
      3    14.43 69.86
      4    14.43 69.86
      5    14.43 69.86
      6    14.43 69.86
      7    14.43 69.86
      8    14.43 69.86
      9    14.43 69.86
     10    14.43 69.86
     11    14.43 69.86
     12    14.43 69.86
     13    14.43 69.86
     14    21.18 69.86
     15    21.18 69.86
     16    21.18 69.86
     17    21.18 69.86
     18    21.18 69.86
```

```
6     0.00
     1    15.46 84.31
     2    15.46 84.31
     3    15.46 84.31
     4    15.46 84.31
     5    15.46 84.31
     6    15.46 84.31
     7    15.46 84.31
     8    15.46 84.31
     9    15.46 84.31
    10    15.46 84.31
    11    15.46 84.31
    12    15.46 84.31
    13    15.46 84.31
    14    22.70 84.31
    15    22.70 84.31
    16    22.70 84.31
    17    22.70 84.31
    18    22.70 84.31
7     0.00
     1    26.07 84.70
     2    26.07 84.70
     3    26.07 84.70
     4    26.07 84.70
     5    26.07 84.70
     6    26.07 84.70
     7    26.07 84.70
     8    26.07 84.70
     9    26.07 84.70
    10    26.07 84.70
    11    26.07 84.70
    12    26.07 84.70
    13    26.07 84.70
    14    38.27 84.70
    15    38.27 84.70
    16    38.27 84.70
    17    38.27 84.70
    18    38.27 84.70
8     0.00
     1    25.45 79.73
     2    25.45 79.73
     3    25.45 79.73
     4    25.45 79.73
     5    25.45 79.73
     6    25.45 79.73
     7    25.45 79.73
     8    25.45 79.73
     9    25.45 79.73
    10    25.45 79.73
    11    25.45 79.73
    12    25.45 79.73
    13    25.45 79.73
    14    37.36 79.73
    15    37.36 79.73
```

```
    16    37.36 79.73
    17    37.36 79.73
    18    37.36 79.73
9     0.00
     1    34.26 75.90
     2    34.26 75.90
     3    34.26 75.90
     4    34.26 75.90
     5    34.26 75.90
     6    34.26 75.90
     7    34.26 75.90
     8    34.26 75.90
     9    34.26 75.90
    10    34.26 75.90
    11    34.26 75.90
    12    34.26 75.90
    13    34.26 75.90
    14    50.30 75.90
    15    50.30 75.90
    16    50.30 75.90
    17    50.30 75.90
    18    50.30 75.90
10     0.00
     1    36.68 79.07
     2    36.68 79.07
     3    36.68 79.07
     4    36.68 79.07
     5    36.68 79.07
     6    36.68 79.07
     7    36.68 79.07
     8    36.68 79.07
     9    36.68 79.07
    10    36.68 79.07
    11    36.68 79.07
    12    36.68 79.07
    13    36.68 79.07
    14    53.85 79.07
    15    53.85 79.07
    16    53.85 79.07
    17    53.85 79.07
    18    53.85 79.07
11     0.00
     1    34.09 78.46
     2    34.09 78.46
     3    34.09 78.46
     4    34.09 78.46
     5    34.09 78.46
     6    34.09 78.46
     7    34.09 78.46
     8    34.09 78.46
     9    34.09 78.46
    10    34.09 78.46
    11    34.09 78.46
    12    34.09 78.46
```

```
    13    34.09 78.46
    14    50.04 78.46
    15    50.04 78.46
    16    50.04 78.46
    17    50.04 78.46
    18    50.04 78.46
12     0.00
     1    36.36 79.38
     2    36.36 79.38
     3    36.36 79.38
     4    36.36 79.38
     5    36.36 79.38
     6    36.36 79.38
     7    36.36 79.38
     8    36.36 79.38
     9    36.36 79.38
    10    36.36 79.38
    11    36.36 79.38
    12    36.36 79.38
    13    36.36 79.38
    14    53.38 79.38
    15    53.38 79.38
    16    53.38 79.38
    17    53.38 79.38
    18    53.38 79.38
13     0.00
     1    31.79 82.55
     2    31.79 82.55
     3    31.79 82.55
     4    31.79 82.55
     5    31.79 82.55
     6    31.79 82.55
     7    31.79 82.55
     8    31.79 82.55
     9    31.79 82.55
    10    31.79 82.55
    11    31.79 82.55
    12    31.79 82.55
    13    31.79 82.55
    14    46.66 82.55
    15    46.66 82.55
    16    46.66 82.55
    17    46.66 82.55
    18    46.66 82.55
14     0.00
     1    32.41 81.56
     2    32.41 81.56
     3    32.41 81.56
     4    32.41 81.56
     5    32.41 81.56
     6    32.41 81.56
     7    32.41 81.56
     8    32.41 81.56
     9    32.41 81.56
```

```
    10    32.41 81.56
    11    32.41 81.56
    12    32.41 81.56
    13    32.41 81.56
    14    47.57 81.56
    15    47.57 81.56
    16    47.57 81.56
    17    47.57 81.56
    18    47.57 81.56
15     0.00
     1    26.70 84.91
     2    26.70 84.91
     3    26.70 84.91
     4    26.70 84.91
     5    26.70 84.91
     6    26.70 84.91
     7    26.70 84.91
     8    26.70 84.91
     9    26.70 84.91
    10    26.70 84.91
    11    26.70 84.91
    12    26.70 84.91
    13    26.70 84.91
    14    39.19 84.91
    15    39.19 84.91
    16    39.19 84.91
    17    39.19 84.91
    18    39.19 84.91
16     0.00
     1    20.75 82.97
     2    20.75 82.97
     3    20.75 82.97
     4    20.75 82.97
     5    20.75 82.97
     6    20.75 82.97
     7    20.75 82.97
     8    20.75 82.97
     9    20.75 82.97
    10    20.75 82.97
    11    20.75 82.97
    12    20.75 82.97
    13    20.75 82.97
    14    30.46 82.97
    15    30.46 82.97
    16    30.46 82.97
    17    30.46 82.97
    18    30.46 82.97
17     0.00
     1    26.73 85.04
     2    26.73 85.04
     3    26.73 85.04
     4    26.73 85.04
     5    26.73 85.04
     6    26.73 85.04
```

```
     7    26.73 85.04
     8    26.73 85.04
     9    26.73 85.04
    10    26.73 85.04
    11    26.73 85.04
    12    26.73 85.04
    13    26.73 85.04
    14    39.24 85.04
    15    39.24 85.04
    16    39.24 85.04
    17    39.24 85.04
    18    39.24 85.04
18     0.00
     1    23.51 73.36
     2    23.51 73.36
     3    23.51 73.36
     4    23.51 73.36
     5    23.51 73.36
     6    23.51 73.36
     7    23.51 73.36
     8    23.51 73.36
     9    23.51 73.36
    10    23.51 73.36
    11    23.51 73.36
    12    23.51 73.36
    13    23.51 73.36
    14    34.51 73.36
    15    34.51 73.36
    16    34.51 73.36
    17    34.51 73.36
    18    34.51 73.36
19     0.00
     1    18.78 75.88
     2    18.78 75.88
     3    18.78 75.88
     4    18.78 75.88
     5    18.78 75.88
     6    18.78 75.88
     7    18.78 75.88
     8    18.78 75.88
     9    18.78 75.88
    10    18.78 75.88
    11    18.78 75.88
    12    18.78 75.88
    13    18.78 75.88
    14    27.56 75.88
    15    27.56 75.88
    16    27.56 75.88
    17    27.56 75.88
    18    27.56 75.88
20     0.00
     1     8.72 83.24
     2     8.72 83.24
     3     8.72 83.24
```

```
     4     8.72 83.24
     5     8.72 83.24
     6     8.72 83.24
     7     8.72 83.24
     8     8.72 83.24
     9     8.72 83.24
    10     8.72 83.24
    11     8.72 83.24
    12     8.72 83.24
    13     8.72 83.24
    14    12.80 83.24
    15    12.80 83.24
    16    12.80 83.24
    17    12.80 83.24
    18    12.80 83.24
21     0.00
     1    18.65 75.67
     2    18.65 75.67
     3    18.65 75.67
     4    18.65 75.67
     5    18.65 75.67
     6    18.65 75.67
     7    18.65 75.67
     8    18.65 75.67
     9    18.65 75.67
    10    18.65 75.67
    11    18.65 75.67
    12    18.65 75.67
    13    18.65 75.67
    14    27.37 75.67
    15    27.37 75.67
    16    27.37 75.67
    17    27.37 75.67
    18    27.37 75.67
22     0.00
     1    19.98 81.67
     2    19.98 81.67
     3    19.98 81.67
     4    19.98 81.67
     5    19.98 81.67
     6    19.98 81.67
     7    19.98 81.67
     8    19.98 81.67
     9    19.98 81.67
    10    19.98 81.67
    11    19.98 81.67
    12    19.98 81.67
    13    19.98 81.67
    14    29.32 81.67
    15    29.32 81.67
    16    29.32 81.67
    17    29.32 81.67
    18    29.32 81.67
23     0.00
```

```
      1    14.87 75.82
      2    14.87 75.82
      3    14.87 75.82
      4    14.87 75.82
      5    14.87 75.82
      6    14.87 75.82
      7    14.87 75.82
      8    14.87 75.82
      9    14.87 75.82
     10    14.87 75.82
     11    14.87 75.82
     12    14.87 75.82
     13    14.87 75.82
     14    21.82 75.82
     15    21.82 75.82
     16    21.82 75.82
     17    21.82 75.82
     18    21.82 75.82
24     0.00
      1     7.43 77.61
      2     7.43 77.61
      3     7.43 77.61
      4     7.43 77.61
      5     7.43 77.61
      6     7.43 77.61
      7     7.43 77.61
      8     7.43 77.61
      9     7.43 77.61
     10     7.43 77.61
     11     7.43 77.61
     12     7.43 77.61
     13     7.43 77.61
     14    10.91 77.61
     15    10.91 77.61
     16    10.91 77.61
     17    10.91 77.61
     18    10.91 77.61
```

Eastbound 24 to Walnut Creek

```
'EB24toWC, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 16
    1 1
'Link_58                                ' 'AG' 581399.96 4194647.37 581426.78 4194657.33
-7.38   12.28
    2 1
'Link_59                                ' 'AG' 581384.90 4194642.42 581399.96 4194647.37
-6.67   12.28
    3 1
'Link_60                                ' 'AG' 581369.00 4194638.93 581384.90 4194642.42
-5.96   12.28
    4 1
'Link_61                                ' 'AG' 581352.15 4194635.45 581369.00 4194638.93
-4.92   12.28
    5 1
'Link_62                                ' 'AG' 581338.28 4194632.98 581352.15 4194635.45
-3.80   12.28
    6 1
'Link_63                                ' 'AG' 581308.84 4194633.76 581338.28 4194632.98
-2.54   12.28
    7 1
'Link_64                                ' 'AG' 581286.39 4194634.57 581308.84 4194633.76
-1.40   12.28
    8 1
'Link_65                                ' 'AG' 581268.37 4194637.82 581286.39 4194634.57
-0.80   12.28
    9 1
'Link_66                                ' 'AG' 581243.47 4194643.47 581268.37 4194637.82
-0.20   12.28
    10 1
'Link_67                                ' 'AG' 581225.09 4194647.65 581243.47 4194643.47
0.17   12.28
    11 1
'Link_68                                ' 'AG' 581204.87 4194652.27 581225.09 4194647.65
0.24   12.28
    12 1
'Link_69                                ' 'AG' 581186.61 4194657.85 581204.87 4194652.27
0.65   12.28
    13 1
'Link_70                                ' 'AG' 581166.04 4194664.33 581186.61 4194657.85
2.27   12.28
    14 1
'Link_71                                ' 'AG' 581152.20 4194668.48 581166.04 4194664.33
```

```
4.04   12.28
    15 1
'Link_72                                ' 'AG' 581126.76 4194677.31 581152.20 4194668.48
4.56   12.28
    16 1
'Link_73                                ' 'AG' 581102.79 4194685.27 581126.76 4194677.31
4.45   12.28
 1     0.00
      1   104.48 75.13
      2   104.48 75.13
      3   104.48 75.13
      4   104.48 75.13
      5   104.48 75.13
      6   104.48 75.13
      7   104.48 75.13
      8   104.48 75.13
      9   104.48 75.13
     10   104.48 75.13
     11   104.48 75.13
     12   104.48 75.13
     13   104.48 75.13
     14   104.48 75.13
     15   104.48 75.13
     16   104.48 75.13
 2     0.00
      1    33.86 76.69
      2    33.86 76.69
      3    33.86 76.69
      4    33.86 76.69
      5    33.86 76.69
      6    33.86 76.69
      7    33.86 76.69
      8    33.86 76.69
      9    33.86 76.69
     10    33.86 76.69
     11    33.86 76.69
     12    33.86 76.69
     13    33.86 76.69
     14    33.86 76.69
     15    33.86 76.69
     16    33.86 76.69
 3     0.00
      1    33.27 112.31
      2    33.27 112.31
      3    33.27 112.31
      4    33.27 112.31
      5    33.27 112.31
      6    33.27 112.31
      7    33.27 112.31
      8    33.27 112.31
      9    33.27 112.31
     10    33.27 112.31
     11    33.27 112.31
     12    33.27 112.31
```

```
    13    33.27 112.31
    14    33.27 112.31
    15    33.27 112.31
    16    33.27 112.31
4     0.00
     1    15.55 83.28
     2    15.55 83.28
     3    15.55 83.28
     4    15.55 83.28
     5    15.55 83.28
     6    15.55 83.28
     7    15.55 83.28
     8    15.55 83.28
     9    15.55 83.28
    10    15.55 83.28
    11    15.55 83.28
    12    15.55 83.28
    13    15.55 83.28
    14    15.55 83.28
    15    15.55 83.28
    16    15.55 83.28
5     0.00
     1    43.99 81.29
     2    43.99 81.29
     3    43.99 81.29
     4    43.99 81.29
     5    43.99 81.29
     6    43.99 81.29
     7    43.99 81.29
     8    43.99 81.29
     9    43.99 81.29
    10    43.99 81.29
    11    43.99 81.29
    12    43.99 81.29
    13    43.99 81.29
    14    43.99 81.29
    15    43.99 81.29
    16    43.99 81.29
6     0.00
     1    81.22 81.93
     2    81.22 81.93
     3    81.22 81.93
     4    81.22 81.93
     5    81.22 81.93
     6    81.22 81.93
     7    81.22 81.93
     8    81.22 81.93
     9    81.22 81.93
    10    81.22 81.93
    11    81.22 81.93
    12    81.22 81.93
    13    81.22 81.93
    14    81.22 81.93
    15    81.22 81.93
```

```
    16    81.22 81.93
7     0.00
     1   368.70 74.71
     2   368.70 74.71
     3   368.70 74.71
     4   368.70 74.71
     5   368.70 74.71
     6   368.70 74.71
     7   368.70 74.71
     8   368.70 74.71
     9   368.70 74.71
    10   368.70 74.71
    11   368.70 74.71
    12   368.70 74.71
    13   368.70 74.71
    14   368.70 74.71
    15   368.70 74.71
    16   368.70 74.71
8     0.00
     1   782.64 74.64
     2   782.64 74.64
     3   782.64 74.64
     4   782.64 74.64
     5   782.64 74.64
     6   782.64 74.64
     7   782.64 74.64
     8   782.64 74.64
     9   782.64 74.64
    10   782.64 74.64
    11   782.64 74.64
    12   782.64 74.64
    13   782.64 74.64
    14   782.64 74.64
    15   782.64 74.64
    16   782.64 74.64
9     0.00
     1   708.31 77.22
     2   708.31 77.22
     3   708.31 77.22
     4   708.31 77.22
     5   708.31 77.22
     6   708.31 77.22
     7   708.31 77.22
     8   708.31 77.22
     9   708.31 77.22
    10   708.31 77.22
    11   708.31 77.22
    12   708.31 77.22
    13   708.31 77.22
    14   708.31 77.22
    15   708.31 77.22
    16   708.31 77.22
10     0.00
     1   424.99 78.00
```

```
     2   424.99 78.00
     3   424.99 78.00
     4   424.99 78.00
     5   424.99 78.00
     6   424.99 78.00
     7   424.99 78.00
     8   424.99 78.00
     9   424.99 78.00
    10   424.99 78.00
    11   424.99 78.00
    12   424.99 78.00
    13   424.99 78.00
    14   424.99 78.00
    15   424.99 78.00
    16   424.99 78.00
11     0.00
     1   458.25 77.64
     2   458.25 77.64
     3   458.25 77.64
     4   458.25 77.64
     5   458.25 77.64
     6   458.25 77.64
     7   458.25 77.64
     8   458.25 77.64
     9   458.25 77.64
    10   458.25 77.64
    11   458.25 77.64
    12   458.25 77.64
    13   458.25 77.64
    14   458.25 77.64
    15   458.25 77.64
    16   458.25 77.64
12     0.00
     1   580.72 76.53
     2   580.72 76.53
     3   580.72 76.53
     4   580.72 76.53
     5   580.72 76.53
     6   580.72 76.53
     7   580.72 76.53
     8   580.72 76.53
     9   580.72 76.53
    10   580.72 76.53
    11   580.72 76.53
    12   580.72 76.53
    13   580.72 76.53
    14   580.72 76.53
    15   580.72 76.53
    16   580.72 76.53
13     0.00
     1   611.17 75.64
     2   611.17 75.64
     3   611.17 75.64
     4   611.17 75.64
```

```
     5   611.17 75.64
     6   611.17 75.64
     7   611.17 75.64
     8   611.17 75.64
     9   611.17 75.64
    10   611.17 75.64
    11   611.17 75.64
    12   611.17 75.64
    13   611.17 75.64
    14   611.17 75.64
    15   611.17 75.64
    16   611.17 75.64
14     0.00
     1   599.65 76.37
     2   599.65 76.37
     3   599.65 76.37
     4   599.65 76.37
     5   599.65 76.37
     6   599.65 76.37
     7   599.65 76.37
     8   599.65 76.37
     9   599.65 76.37
    10   599.65 76.37
    11   599.65 76.37
    12   599.65 76.37
    13   599.65 76.37
    14   599.65 76.37
    15   599.65 76.37
    16   599.65 76.37
15     0.00
     1   702.80 75.42
     2   702.80 75.42
     3   702.80 75.42
     4   702.80 75.42
     5   702.80 75.42
     6   702.80 75.42
     7   702.80 75.42
     8   702.80 75.42
     9   702.80 75.42
    10   702.80 75.42
    11   702.80 75.42
    12   702.80 75.42
    13   702.80 75.42
    14   702.80 75.42
    15   702.80 75.42
    16   702.80 75.42
16     0.00
     1   721.37 76.07
     2   721.37 76.07
     3   721.37 76.07
     4   721.37 76.07
     5   721.37 76.07
     6   721.37 76.07
     7   721.37 76.07
```

```
      8   721.37 76.07
      9   721.37 76.07
     10   721.37 76.07
     11   721.37 76.07
     12   721.37 76.07
     13   721.37 76.07
     14   721.37 76.07
     15   721.37 76.07
     16   721.37 76.07
 17     0.00
      1   743.21 78.19
      2   743.21 78.19
      3   743.21 78.19
      4   743.21 78.19
      5   743.21 78.19
      6   743.21 78.19
      7   743.21 78.19
      8   743.21 78.19
      9   743.21 78.19
     10   743.21 78.19
     11   743.21 78.19
     12   743.21 78.19
     13   743.21 78.19
     14   743.21 78.19
     15   743.21 78.19
     16   743.21 78.19
 18     0.00
      1   829.10 75.97
      2   829.10 75.97
      3   829.10 75.97
      4   829.10 75.97
      5   829.10 75.97
      6   829.10 75.97
      7   829.10 75.97
      8   829.10 75.97
      9   829.10 75.97
     10   829.10 75.97
     11   829.10 75.97
     12   829.10 75.97
     13   829.10 75.97
     14   829.10 75.97
     15   829.10 75.97
     16   829.10 75.97
 19     0.00
      1   577.21 75.10
      2   577.21 75.10
      3   577.21 75.10
      4   577.21 75.10
      5   577.21 75.10
      6   577.21 75.10
      7   577.21 75.10
      8   577.21 75.10
      9   577.21 75.10
     10   577.21 75.10
```

```
    11   577.21 75.10
    12   577.21 75.10
    13   577.21 75.10
    14   577.21 75.10
    15   577.21 75.10
    16   577.21 75.10
20     0.00
     1   435.55 75.14
     2   435.55 75.14
     3   435.55 75.14
     4   435.55 75.14
     5   435.55 75.14
     6   435.55 75.14
     7   435.55 75.14
     8   435.55 75.14
     9   435.55 75.14
    10   435.55 75.14
    11   435.55 75.14
    12   435.55 75.14
    13   435.55 75.14
    14   435.55 75.14
    15   435.55 75.14
    16   435.55 75.14
21     0.00
     1   324.16 74.67
     2   324.16 74.67
     3   324.16 74.67
     4   324.16 74.67
     5   324.16 74.67
     6   324.16 74.67
     7   324.16 74.67
     8   324.16 74.67
     9   324.16 74.67
    10   324.16 74.67
    11   324.16 74.67
    12   324.16 74.67
    13   324.16 74.67
    14   324.16 74.67
    15   324.16 74.67
    16   324.16 74.67
22     0.00
     1   324.76 74.52
     2   324.76 74.52
     3   324.76 74.52
     4   324.76 74.52
     5   324.76 74.52
     6   324.76 74.52
     7   324.76 74.52
     8   324.76 74.52
     9   324.76 74.52
    10   324.76 74.52
    11   324.76 74.52
    12   324.76 74.52
    13   324.76 74.52
```

```
    14   324.76 74.52
    15   324.76 74.52
    16   324.76 74.52
23     0.00
     1   244.16 75.06
     2   244.16 75.06
     3   244.16 75.06
     4   244.16 75.06
     5   244.16 75.06
     6   244.16 75.06
     7   244.16 75.06
     8   244.16 75.06
     9   244.16 75.06
    10   244.16 75.06
    11   244.16 75.06
    12   244.16 75.06
    13   244.16 75.06
    14   244.16 75.06
    15   244.16 75.06
    16   244.16 75.06
24     0.00
     1   189.14 76.00
     2   189.14 76.00
     3   189.14 76.00
     4   189.14 76.00
     5   189.14 76.00
     6   189.14 76.00
     7   189.14 76.00
     8   189.14 76.00
     9   189.14 76.00
    10   189.14 76.00
    11   189.14 76.00
    12   189.14 76.00
    13   189.14 76.00
    14   189.14 76.00
    15   189.14 76.00
    16   189.14 76.00
```

```
'EB24toWC, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 16
    1 1
'Link_58                                ' 'AG' 581399.96 4194647.37 581426.78 4194657.33
-7.38   12.28
    2 1
'Link_59                                ' 'AG' 581384.90 4194642.42 581399.96 4194647.37
-6.67   12.28
    3 1
'Link_60                                ' 'AG' 581369.00 4194638.93 581384.90 4194642.42
-5.96   12.28
    4 1
'Link_61                                ' 'AG' 581352.15 4194635.45 581369.00 4194638.93
-4.92   12.28
    5 1
'Link_62                                ' 'AG' 581338.28 4194632.98 581352.15 4194635.45
-3.80   12.28
    6 1
'Link_63                                ' 'AG' 581308.84 4194633.76 581338.28 4194632.98
-2.54   12.28
    7 1
'Link_64                                ' 'AG' 581286.39 4194634.57 581308.84 4194633.76
-1.40   12.28
    8 1
'Link_65                                ' 'AG' 581268.37 4194637.82 581286.39 4194634.57
-0.80   12.28
    9 1
'Link_66                                ' 'AG' 581243.47 4194643.47 581268.37 4194637.82
-0.20   12.28
    10 1
'Link_67                                ' 'AG' 581225.09 4194647.65 581243.47 4194643.47
0.17   12.28
    11 1
'Link_68                                ' 'AG' 581204.87 4194652.27 581225.09 4194647.65
0.24   12.28
    12 1
'Link_69                                ' 'AG' 581186.61 4194657.85 581204.87 4194652.27
0.65   12.28
    13 1
'Link_70                                ' 'AG' 581166.04 4194664.33 581186.61 4194657.85
2.27   12.28
    14 1
'Link_71                                ' 'AG' 581152.20 4194668.48 581166.04 4194664.33
```

```
4.04   12.28
    15 1
'Link_72                                ' 'AG' 581126.76 4194677.31 581152.20 4194668.48
4.56   12.28
    16 1
'Link_73                                ' 'AG' 581102.79 4194685.27 581126.76 4194677.31
4.45   12.28
 1     0.00
      1   104.48 72.44
      2   104.48 72.44
      3   104.48 72.44
      4   104.48 72.44
      5   104.48 72.44
      6   104.48 72.44
      7   104.48 72.44
      8   104.48 72.44
      9   104.48 72.44
     10   104.48 72.44
     11   104.48 72.44
     12   104.48 72.44
     13   104.48 72.44
     14   104.48 72.44
     15   104.48 72.44
     16   104.48 72.44
 2     0.00
      1    33.86 74.29
      2    33.86 74.29
      3    33.86 74.29
      4    33.86 74.29
      5    33.86 74.29
      6    33.86 74.29
      7    33.86 74.29
      8    33.86 74.29
      9    33.86 74.29
     10    33.86 74.29
     11    33.86 74.29
     12    33.86 74.29
     13    33.86 74.29
     14    33.86 74.29
     15    33.86 74.29
     16    33.86 74.29
 3     0.00
      1    33.27 100.15
      2    33.27 100.15
      3    33.27 100.15
      4    33.27 100.15
      5    33.27 100.15
      6    33.27 100.15
      7    33.27 100.15
      8    33.27 100.15
      9    33.27 100.15
     10    33.27 100.15
     11    33.27 100.15
     12    33.27 100.15
```

```
    13    33.27 100.15
    14    33.27 100.15
    15    33.27 100.15
    16    33.27 100.15
4     0.00
     1    15.55 79.63
     2    15.55 79.63
     3    15.55 79.63
     4    15.55 79.63
     5    15.55 79.63
     6    15.55 79.63
     7    15.55 79.63
     8    15.55 79.63
     9    15.55 79.63
    10    15.55 79.63
    11    15.55 79.63
    12    15.55 79.63
    13    15.55 79.63
    14    15.55 79.63
    15    15.55 79.63
    16    15.55 79.63
5     0.00
     1    43.99 77.16
     2    43.99 77.16
     3    43.99 77.16
     4    43.99 77.16
     5    43.99 77.16
     6    43.99 77.16
     7    43.99 77.16
     8    43.99 77.16
     9    43.99 77.16
    10    43.99 77.16
    11    43.99 77.16
    12    43.99 77.16
    13    43.99 77.16
    14    43.99 77.16
    15    43.99 77.16
    16    43.99 77.16
6     0.00
     1    81.22 79.84
     2    81.22 79.84
     3    81.22 79.84
     4    81.22 79.84
     5    81.22 79.84
     6    81.22 79.84
     7    81.22 79.84
     8    81.22 79.84
     9    81.22 79.84
    10    81.22 79.84
    11    81.22 79.84
    12    81.22 79.84
    13    81.22 79.84
    14    81.22 79.84
    15    81.22 79.84
```

```
    16    81.22 79.84
7     0.00
     1   368.70 72.46
     2   368.70 72.46
     3   368.70 72.46
     4   368.70 72.46
     5   368.70 72.46
     6   368.70 72.46
     7   368.70 72.46
     8   368.70 72.46
     9   368.70 72.46
    10   368.70 72.46
    11   368.70 72.46
    12   368.70 72.46
    13   368.70 72.46
    14   368.70 72.46
    15   368.70 72.46
    16   368.70 72.46
8     0.00
     1   782.64 71.95
     2   782.64 71.95
     3   782.64 71.95
     4   782.64 71.95
     5   782.64 71.95
     6   782.64 71.95
     7   782.64 71.95
     8   782.64 71.95
     9   782.64 71.95
    10   782.64 71.95
    11   782.64 71.95
    12   782.64 71.95
    13   782.64 71.95
    14   782.64 71.95
    15   782.64 71.95
    16   782.64 71.95
9     0.00
     1   708.31 74.88
     2   708.31 74.88
     3   708.31 74.88
     4   708.31 74.88
     5   708.31 74.88
     6   708.31 74.88
     7   708.31 74.88
     8   708.31 74.88
     9   708.31 74.88
    10   708.31 74.88
    11   708.31 74.88
    12   708.31 74.88
    13   708.31 74.88
    14   708.31 74.88
    15   708.31 74.88
    16   708.31 74.88
10     0.00
     1   424.99 75.60
```

```
     2   424.99 75.60
     3   424.99 75.60
     4   424.99 75.60
     5   424.99 75.60
     6   424.99 75.60
     7   424.99 75.60
     8   424.99 75.60
     9   424.99 75.60
    10   424.99 75.60
    11   424.99 75.60
    12   424.99 75.60
    13   424.99 75.60
    14   424.99 75.60
    15   424.99 75.60
    16   424.99 75.60
11     0.00
     1   458.25 74.54
     2   458.25 74.54
     3   458.25 74.54
     4   458.25 74.54
     5   458.25 74.54
     6   458.25 74.54
     7   458.25 74.54
     8   458.25 74.54
     9   458.25 74.54
    10   458.25 74.54
    11   458.25 74.54
    12   458.25 74.54
    13   458.25 74.54
    14   458.25 74.54
    15   458.25 74.54
    16   458.25 74.54
12     0.00
     1   580.72 74.05
     2   580.72 74.05
     3   580.72 74.05
     4   580.72 74.05
     5   580.72 74.05
     6   580.72 74.05
     7   580.72 74.05
     8   580.72 74.05
     9   580.72 74.05
    10   580.72 74.05
    11   580.72 74.05
    12   580.72 74.05
    13   580.72 74.05
    14   580.72 74.05
    15   580.72 74.05
    16   580.72 74.05
13     0.00
     1   611.17 72.78
     2   611.17 72.78
     3   611.17 72.78
     4   611.17 72.78
```

```
     5   611.17 72.78
     6   611.17 72.78
     7   611.17 72.78
     8   611.17 72.78
     9   611.17 72.78
    10   611.17 72.78
    11   611.17 72.78
    12   611.17 72.78
    13   611.17 72.78
    14   611.17 72.78
    15   611.17 72.78
    16   611.17 72.78
14     0.00
     1   599.65 73.52
     2   599.65 73.52
     3   599.65 73.52
     4   599.65 73.52
     5   599.65 73.52
     6   599.65 73.52
     7   599.65 73.52
     8   599.65 73.52
     9   599.65 73.52
    10   599.65 73.52
    11   599.65 73.52
    12   599.65 73.52
    13   599.65 73.52
    14   599.65 73.52
    15   599.65 73.52
    16   599.65 73.52
15     0.00
     1   702.80 72.77
     2   702.80 72.77
     3   702.80 72.77
     4   702.80 72.77
     5   702.80 72.77
     6   702.80 72.77
     7   702.80 72.77
     8   702.80 72.77
     9   702.80 72.77
    10   702.80 72.77
    11   702.80 72.77
    12   702.80 72.77
    13   702.80 72.77
    14   702.80 72.77
    15   702.80 72.77
    16   702.80 72.77
16     0.00
     1   721.37 73.39
     2   721.37 73.39
     3   721.37 73.39
     4   721.37 73.39
     5   721.37 73.39
     6   721.37 73.39
     7   721.37 73.39
```

```
     8   721.37 73.39
     9   721.37 73.39
    10   721.37 73.39
    11   721.37 73.39
    12   721.37 73.39
    13   721.37 73.39
    14   721.37 73.39
    15   721.37 73.39
    16   721.37 73.39
17     0.00
     1   743.21 74.73
     2   743.21 74.73
     3   743.21 74.73
     4   743.21 74.73
     5   743.21 74.73
     6   743.21 74.73
     7   743.21 74.73
     8   743.21 74.73
     9   743.21 74.73
    10   743.21 74.73
    11   743.21 74.73
    12   743.21 74.73
    13   743.21 74.73
    14   743.21 74.73
    15   743.21 74.73
    16   743.21 74.73
18     0.00
     1   829.10 73.52
     2   829.10 73.52
     3   829.10 73.52
     4   829.10 73.52
     5   829.10 73.52
     6   829.10 73.52
     7   829.10 73.52
     8   829.10 73.52
     9   829.10 73.52
    10   829.10 73.52
    11   829.10 73.52
    12   829.10 73.52
    13   829.10 73.52
    14   829.10 73.52
    15   829.10 73.52
    16   829.10 73.52
19     0.00
     1   577.21 72.57
     2   577.21 72.57
     3   577.21 72.57
     4   577.21 72.57
     5   577.21 72.57
     6   577.21 72.57
     7   577.21 72.57
     8   577.21 72.57
     9   577.21 72.57
    10   577.21 72.57
```

```
    11   577.21 72.57
    12   577.21 72.57
    13   577.21 72.57
    14   577.21 72.57
    15   577.21 72.57
    16   577.21 72.57
20     0.00
     1   435.55 72.73
     2   435.55 72.73
     3   435.55 72.73
     4   435.55 72.73
     5   435.55 72.73
     6   435.55 72.73
     7   435.55 72.73
     8   435.55 72.73
     9   435.55 72.73
    10   435.55 72.73
    11   435.55 72.73
    12   435.55 72.73
    13   435.55 72.73
    14   435.55 72.73
    15   435.55 72.73
    16   435.55 72.73
21     0.00
     1   324.16 71.91
     2   324.16 71.91
     3   324.16 71.91
     4   324.16 71.91
     5   324.16 71.91
     6   324.16 71.91
     7   324.16 71.91
     8   324.16 71.91
     9   324.16 71.91
    10   324.16 71.91
    11   324.16 71.91
    12   324.16 71.91
    13   324.16 71.91
    14   324.16 71.91
    15   324.16 71.91
    16   324.16 71.91
22     0.00
     1   324.76 71.74
     2   324.76 71.74
     3   324.76 71.74
     4   324.76 71.74
     5   324.76 71.74
     6   324.76 71.74
     7   324.76 71.74
     8   324.76 71.74
     9   324.76 71.74
    10   324.76 71.74
    11   324.76 71.74
    12   324.76 71.74
    13   324.76 71.74
```

```
    14   324.76 71.74
    15   324.76 71.74
    16   324.76 71.74
23     0.00
     1   244.16 72.22
     2   244.16 72.22
     3   244.16 72.22
     4   244.16 72.22
     5   244.16 72.22
     6   244.16 72.22
     7   244.16 72.22
     8   244.16 72.22
     9   244.16 72.22
    10   244.16 72.22
    11   244.16 72.22
    12   244.16 72.22
    13   244.16 72.22
    14   244.16 72.22
    15   244.16 72.22
    16   244.16 72.22
24     0.00
     1   189.14 72.95
     2   189.14 72.95
     3   189.14 72.95
     4   189.14 72.95
     5   189.14 72.95
     6   189.14 72.95
     7   189.14 72.95
     8   189.14 72.95
     9   189.14 72.95
    10   189.14 72.95
    11   189.14 72.95
    12   189.14 72.95
    13   189.14 72.95
    14   189.14 72.95
    15   189.14 72.95
    16   189.14 72.95
```

```
'EB24toWC, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 16
    1 1
'Link_58                                ' 'AG' 581399.96 4194647.37 581426.78 4194657.33
-7.38   12.28
    2 1
'Link_59                                ' 'AG' 581384.90 4194642.42 581399.96 4194647.37
-6.67   12.28
    3 1
'Link_60                                ' 'AG' 581369.00 4194638.93 581384.90 4194642.42
-5.96   12.28
    4 1
'Link_61                                ' 'AG' 581352.15 4194635.45 581369.00 4194638.93
-4.92   12.28
    5 1
'Link_62                                ' 'AG' 581338.28 4194632.98 581352.15 4194635.45
-3.80   12.28
    6 1
'Link_63                                ' 'AG' 581308.84 4194633.76 581338.28 4194632.98
-2.54   12.28
    7 1
'Link_64                                ' 'AG' 581286.39 4194634.57 581308.84 4194633.76
-1.40   12.28
    8 1
'Link_65                                ' 'AG' 581268.37 4194637.82 581286.39 4194634.57
-0.80   12.28
    9 1
'Link_66                                ' 'AG' 581243.47 4194643.47 581268.37 4194637.82
-0.20   12.28
    10 1
'Link_67                                ' 'AG' 581225.09 4194647.65 581243.47 4194643.47
0.17   12.28
    11 1
'Link_68                                ' 'AG' 581204.87 4194652.27 581225.09 4194647.65
0.24   12.28
    12 1
'Link_69                                ' 'AG' 581186.61 4194657.85 581204.87 4194652.27
0.65   12.28
    13 1
'Link_70                                ' 'AG' 581166.04 4194664.33 581186.61 4194657.85
2.27   12.28
    14 1
'Link_71                                ' 'AG' 581152.20 4194668.48 581166.04 4194664.33
```

```
4.04   12.28
    15 1
'Link_72                                ' 'AG' 581126.76 4194677.31 581152.20 4194668.48
4.56   12.28
    16 1
'Link_73                                ' 'AG' 581102.79 4194685.27 581126.76 4194677.31
4.45   12.28
 1     0.00
      1   115.29 20.16
      2   115.29 20.16
      3   115.29 20.16
      4   115.29 20.16
      5   115.29 20.16
      6   115.29 20.16
      7   115.29 20.16
      8   115.29 20.16
      9   115.29 20.16
     10   115.29 20.16
     11   115.29 20.16
     12   115.29 20.16
     13   115.29 20.16
     14   115.29 20.16
     15   115.29 20.16
     16   115.29 20.16
 2     0.00
      1    42.94 23.07
      2    42.94 23.07
      3    42.94 23.07
      4    42.94 23.07
      5    42.94 23.07
      6    42.94 23.07
      7    42.94 23.07
      8    42.94 23.07
      9    42.94 23.07
     10    42.94 23.07
     11    42.94 23.07
     12    42.94 23.07
     13    42.94 23.07
     14    42.94 23.07
     15    42.94 23.07
     16    42.94 23.07
 3     0.00
      1    45.17 23.30
      2    45.17 23.30
      3    45.17 23.30
      4    45.17 23.30
      5    45.17 23.30
      6    45.17 23.30
      7    45.17 23.30
      8    45.17 23.30
      9    45.17 23.30
     10    45.17 23.30
     11    45.17 23.30
     12    45.17 23.30
```

```
    13    45.17 23.30
    14    45.17 23.30
    15    45.17 23.30
    16    45.17 23.30
4     0.00
     1    24.16 25.05
     2    24.16 25.05
     3    24.16 25.05
     4    24.16 25.05
     5    24.16 25.05
     6    24.16 25.05
     7    24.16 25.05
     8    24.16 25.05
     9    24.16 25.05
    10    24.16 25.05
    11    24.16 25.05
    12    24.16 25.05
    13    24.16 25.05
    14    24.16 25.05
    15    24.16 25.05
    16    24.16 25.05
5     0.00
     1    50.74 20.91
     2    50.74 20.91
     3    50.74 20.91
     4    50.74 20.91
     5    50.74 20.91
     6    50.74 20.91
     7    50.74 20.91
     8    50.74 20.91
     9    50.74 20.91
    10    50.74 20.91
    11    50.74 20.91
    12    50.74 20.91
    13    50.74 20.91
    14    50.74 20.91
    15    50.74 20.91
    16    50.74 20.91
6     0.00
     1    88.46 20.02
     2    88.46 20.02
     3    88.46 20.02
     4    88.46 20.02
     5    88.46 20.02
     6    88.46 20.02
     7    88.46 20.02
     8    88.46 20.02
     9    88.46 20.02
    10    88.46 20.02
    11    88.46 20.02
    12    88.46 20.02
    13    88.46 20.02
    14    88.46 20.02
    15    88.46 20.02
```

```
    16    88.46 20.02
7     0.00
     1   380.90 18.76
     2   380.90 18.76
     3   380.90 18.76
     4   380.90 18.76
     5   380.90 18.76
     6   380.90 18.76
     7   380.90 18.76
     8   380.90 18.76
     9   380.90 18.76
    10   380.90 18.76
    11   380.90 18.76
    12   380.90 18.76
    13   380.90 18.76
    14   380.90 18.76
    15   380.90 18.76
    16   380.90 18.76
8     0.00
     1   794.55 18.29
     2   794.55 18.29
     3   794.55 18.29
     4   794.55 18.29
     5   794.55 18.29
     6   794.55 18.29
     7   794.55 18.29
     8   794.55 18.29
     9   794.55 18.29
    10   794.55 18.29
    11   794.55 18.29
    12   794.55 18.29
    13   794.55 18.29
    14   794.55 18.29
    15   794.55 18.29
    16   794.55 18.29
9     0.00
     1   724.34 18.50
     2   724.34 18.50
     3   724.34 18.50
     4   724.34 18.50
     5   724.34 18.50
     6   724.34 18.50
     7   724.34 18.50
     8   724.34 18.50
     9   724.34 18.50
    10   724.34 18.50
    11   724.34 18.50
    12   724.34 18.50
    13   724.34 18.50
    14   724.34 18.50
    15   724.34 18.50
    16   724.34 18.50
10     0.00
     1   442.15 19.04
```

```
     2   442.15 19.04
     3   442.15 19.04
     4   442.15 19.04
     5   442.15 19.04
     6   442.15 19.04
     7   442.15 19.04
     8   442.15 19.04
     9   442.15 19.04
    10   442.15 19.04
    11   442.15 19.04
    12   442.15 19.04
    13   442.15 19.04
    14   442.15 19.04
    15   442.15 19.04
    16   442.15 19.04
11     0.00
     1   474.20 18.88
     2   474.20 18.88
     3   474.20 18.88
     4   474.20 18.88
     5   474.20 18.88
     6   474.20 18.88
     7   474.20 18.88
     8   474.20 18.88
     9   474.20 18.88
    10   474.20 18.88
    11   474.20 18.88
    12   474.20 18.88
    13   474.20 18.88
    14   474.20 18.88
    15   474.20 18.88
    16   474.20 18.88
12     0.00
     1   597.73 18.75
     2   597.73 18.75
     3   597.73 18.75
     4   597.73 18.75
     5   597.73 18.75
     6   597.73 18.75
     7   597.73 18.75
     8   597.73 18.75
     9   597.73 18.75
    10   597.73 18.75
    11   597.73 18.75
    12   597.73 18.75
    13   597.73 18.75
    14   597.73 18.75
    15   597.73 18.75
    16   597.73 18.75
13     0.00
     1   626.04 18.67
     2   626.04 18.67
     3   626.04 18.67
     4   626.04 18.67
```

```
     5   626.04 18.67
     6   626.04 18.67
     7   626.04 18.67
     8   626.04 18.67
     9   626.04 18.67
    10   626.04 18.67
    11   626.04 18.67
    12   626.04 18.67
    13   626.04 18.67
    14   626.04 18.67
    15   626.04 18.67
    16   626.04 18.67
14     0.00
     1   614.81 18.69
     2   614.81 18.69
     3   614.81 18.69
     4   614.81 18.69
     5   614.81 18.69
     6   614.81 18.69
     7   614.81 18.69
     8   614.81 18.69
     9   614.81 18.69
    10   614.81 18.69
    11   614.81 18.69
    12   614.81 18.69
    13   614.81 18.69
    14   614.81 18.69
    15   614.81 18.69
    16   614.81 18.69
15     0.00
     1   715.29 18.51
     2   715.29 18.51
     3   715.29 18.51
     4   715.29 18.51
     5   715.29 18.51
     6   715.29 18.51
     7   715.29 18.51
     8   715.29 18.51
     9   715.29 18.51
    10   715.29 18.51
    11   715.29 18.51
    12   715.29 18.51
    13   715.29 18.51
    14   715.29 18.51
    15   715.29 18.51
    16   715.29 18.51
16     0.00
     1   731.08 18.37
     2   731.08 18.37
     3   731.08 18.37
     4   731.08 18.37
     5   731.08 18.37
     6   731.08 18.37
     7   731.08 18.37
```

```
      8   731.08 18.37
      9   731.08 18.37
     10   731.08 18.37
     11   731.08 18.37
     12   731.08 18.37
     13   731.08 18.37
     14   731.08 18.37
     15   731.08 18.37
     16   731.08 18.37
 17     0.00
      1   755.72 18.48
      2   755.72 18.48
      3   755.72 18.48
      4   755.72 18.48
      5   755.72 18.48
      6   755.72 18.48
      7   755.72 18.48
      8   755.72 18.48
      9   755.72 18.48
     10   755.72 18.48
     11   755.72 18.48
     12   755.72 18.48
     13   755.72 18.48
     14   755.72 18.48
     15   755.72 18.48
     16   755.72 18.48
 18     0.00
      1   840.10 18.32
      2   840.10 18.32
      3   840.10 18.32
      4   840.10 18.32
      5   840.10 18.32
      6   840.10 18.32
      7   840.10 18.32
      8   840.10 18.32
      9   840.10 18.32
     10   840.10 18.32
     11   840.10 18.32
     12   840.10 18.32
     13   840.10 18.32
     14   840.10 18.32
     15   840.10 18.32
     16   840.10 18.32
 19     0.00
      1   585.99 18.39
      2   585.99 18.39
      3   585.99 18.39
      4   585.99 18.39
      5   585.99 18.39
      6   585.99 18.39
      7   585.99 18.39
      8   585.99 18.39
      9   585.99 18.39
     10   585.99 18.39
```

```
    11   585.99 18.39
    12   585.99 18.39
    13   585.99 18.39
    14   585.99 18.39
    15   585.99 18.39
    16   585.99 18.39
20     0.00
     1   439.63 18.26
     2   439.63 18.26
     3   439.63 18.26
     4   439.63 18.26
     5   439.63 18.26
     6   439.63 18.26
     7   439.63 18.26
     8   439.63 18.26
     9   439.63 18.26
    10   439.63 18.26
    11   439.63 18.26
    12   439.63 18.26
    13   439.63 18.26
    14   439.63 18.26
    15   439.63 18.26
    16   439.63 18.26
21     0.00
     1   332.88 18.64
     2   332.88 18.64
     3   332.88 18.64
     4   332.88 18.64
     5   332.88 18.64
     6   332.88 18.64
     7   332.88 18.64
     8   332.88 18.64
     9   332.88 18.64
    10   332.88 18.64
    11   332.88 18.64
    12   332.88 18.64
    13   332.88 18.64
    14   332.88 18.64
    15   332.88 18.64
    16   332.88 18.64
22     0.00
     1   334.10 18.78
     2   334.10 18.78
     3   334.10 18.78
     4   334.10 18.78
     5   334.10 18.78
     6   334.10 18.78
     7   334.10 18.78
     8   334.10 18.78
     9   334.10 18.78
    10   334.10 18.78
    11   334.10 18.78
    12   334.10 18.78
    13   334.10 18.78
```

```
    14   334.10 18.78
    15   334.10 18.78
    16   334.10 18.78
23     0.00
     1   251.11 18.80
     2   251.11 18.80
     3   251.11 18.80
     4   251.11 18.80
     5   251.11 18.80
     6   251.11 18.80
     7   251.11 18.80
     8   251.11 18.80
     9   251.11 18.80
    10   251.11 18.80
    11   251.11 18.80
    12   251.11 18.80
    13   251.11 18.80
    14   251.11 18.80
    15   251.11 18.80
    16   251.11 18.80
24     0.00
     1   192.62 18.51
     2   192.62 18.51
     3   192.62 18.51
     4   192.62 18.51
     5   192.62 18.51
     6   192.62 18.51
     7   192.62 18.51
     8   192.62 18.51
     9   192.62 18.51
    10   192.62 18.51
    11   192.62 18.51
    12   192.62 18.51
    13   192.62 18.51
    14   192.62 18.51
    15   192.62 18.51
    16   192.62 18.51
```

```
'EB24toWC, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 16
    1 1
'Link_58                                ' 'AG' 581399.96 4194647.37 581426.78 4194657.33
-7.38   12.28
    2 1
'Link_59                                ' 'AG' 581384.90 4194642.42 581399.96 4194647.37
-6.67   12.28
    3 1
'Link_60                                ' 'AG' 581369.00 4194638.93 581384.90 4194642.42
-5.96   12.28
    4 1
'Link_61                                ' 'AG' 581352.15 4194635.45 581369.00 4194638.93
-4.92   12.28
    5 1
'Link_62                                ' 'AG' 581338.28 4194632.98 581352.15 4194635.45
-3.80   12.28
    6 1
'Link_63                                ' 'AG' 581308.84 4194633.76 581338.28 4194632.98
-2.54   12.28
    7 1
'Link_64                                ' 'AG' 581286.39 4194634.57 581308.84 4194633.76
-1.40   12.28
    8 1
'Link_65                                ' 'AG' 581268.37 4194637.82 581286.39 4194634.57
-0.80   12.28
    9 1
'Link_66                                ' 'AG' 581243.47 4194643.47 581268.37 4194637.82
-0.20   12.28
    10 1
'Link_67                                ' 'AG' 581225.09 4194647.65 581243.47 4194643.47
0.17   12.28
    11 1
'Link_68                                ' 'AG' 581204.87 4194652.27 581225.09 4194647.65
0.24   12.28
    12 1
'Link_69                                ' 'AG' 581186.61 4194657.85 581204.87 4194652.27
0.65   12.28
    13 1
'Link_70                                ' 'AG' 581166.04 4194664.33 581186.61 4194657.85
2.27   12.28
    14 1
'Link_71                                ' 'AG' 581152.20 4194668.48 581166.04 4194664.33
```

```
4.04   12.28
    15 1
'Link_72                                ' 'AG' 581126.76 4194677.31 581152.20 4194668.48
4.56   12.28
    16 1
'Link_73                                ' 'AG' 581102.79 4194685.27 581126.76 4194677.31
4.45   12.28
 1     0.00
      1   115.29 7.66
      2   115.29 7.66
      3   115.29 7.66
      4   115.29 7.66
      5   115.29 7.66
      6   115.29 7.66
      7   115.29 7.66
      8   115.29 7.66
      9   115.29 7.66
     10   115.29 7.66
     11   115.29 7.66
     12   115.29 7.66
     13   115.29 7.66
     14   115.29 7.66
     15   115.29 7.66
     16   115.29 7.66
 2     0.00
      1    42.94 13.49
      2    42.94 13.49
      3    42.94 13.49
      4    42.94 13.49
      5    42.94 13.49
      6    42.94 13.49
      7    42.94 13.49
      8    42.94 13.49
      9    42.94 13.49
     10    42.94 13.49
     11    42.94 13.49
     12    42.94 13.49
     13    42.94 13.49
     14    42.94 13.49
     15    42.94 13.49
     16    42.94 13.49
 3     0.00
      1    45.17 15.54
      2    45.17 15.54
      3    45.17 15.54
      4    45.17 15.54
      5    45.17 15.54
      6    45.17 15.54
      7    45.17 15.54
      8    45.17 15.54
      9    45.17 15.54
     10    45.17 15.54
     11    45.17 15.54
     12    45.17 15.54
```

```
    13    45.17 15.54
    14    45.17 15.54
    15    45.17 15.54
    16    45.17 15.54
4     0.00
     1    24.16 26.12
     2    24.16 26.12
     3    24.16 26.12
     4    24.16 26.12
     5    24.16 26.12
     6    24.16 26.12
     7    24.16 26.12
     8    24.16 26.12
     9    24.16 26.12
    10    24.16 26.12
    11    24.16 26.12
    12    24.16 26.12
    13    24.16 26.12
    14    24.16 26.12
    15    24.16 26.12
    16    24.16 26.12
5     0.00
     1    50.74 10.09
     2    50.74 10.09
     3    50.74 10.09
     4    50.74 10.09
     5    50.74 10.09
     6    50.74 10.09
     7    50.74 10.09
     8    50.74 10.09
     9    50.74 10.09
    10    50.74 10.09
    11    50.74 10.09
    12    50.74 10.09
    13    50.74 10.09
    14    50.74 10.09
    15    50.74 10.09
    16    50.74 10.09
6     0.00
     1    88.46 7.97
     2    88.46 7.97
     3    88.46 7.97
     4    88.46 7.97
     5    88.46 7.97
     6    88.46 7.97
     7    88.46 7.97
     8    88.46 7.97
     9    88.46 7.97
    10    88.46 7.97
    11    88.46 7.97
    12    88.46 7.97
    13    88.46 7.97
    14    88.46 7.97
    15    88.46 7.97
```

```
    16    88.46 7.97
7     0.00
     1   380.90 4.19
     2   380.90 4.19
     3   380.90 4.19
     4   380.90 4.19
     5   380.90 4.19
     6   380.90 4.19
     7   380.90 4.19
     8   380.90 4.19
     9   380.90 4.19
    10   380.90 4.19
    11   380.90 4.19
    12   380.90 4.19
    13   380.90 4.19
    14   380.90 4.19
    15   380.90 4.19
    16   380.90 4.19
8     0.00
     1   794.55 2.83
     2   794.55 2.83
     3   794.55 2.83
     4   794.55 2.83
     5   794.55 2.83
     6   794.55 2.83
     7   794.55 2.83
     8   794.55 2.83
     9   794.55 2.83
    10   794.55 2.83
    11   794.55 2.83
    12   794.55 2.83
    13   794.55 2.83
    14   794.55 2.83
    15   794.55 2.83
    16   794.55 2.83
9     0.00
     1   724.34 3.27
     2   724.34 3.27
     3   724.34 3.27
     4   724.34 3.27
     5   724.34 3.27
     6   724.34 3.27
     7   724.34 3.27
     8   724.34 3.27
     9   724.34 3.27
    10   724.34 3.27
    11   724.34 3.27
    12   724.34 3.27
    13   724.34 3.27
    14   724.34 3.27
    15   724.34 3.27
    16   724.34 3.27
10     0.00
     1   442.15 4.52
```

```
     2   442.15 4.52
     3   442.15 4.52
     4   442.15 4.52
     5   442.15 4.52
     6   442.15 4.52
     7   442.15 4.52
     8   442.15 4.52
     9   442.15 4.52
    10   442.15 4.52
    11   442.15 4.52
    12   442.15 4.52
    13   442.15 4.52
    14   442.15 4.52
    15   442.15 4.52
    16   442.15 4.52
11     0.00
     1   474.20 4.13
     2   474.20 4.13
     3   474.20 4.13
     4   474.20 4.13
     5   474.20 4.13
     6   474.20 4.13
     7   474.20 4.13
     8   474.20 4.13
     9   474.20 4.13
    10   474.20 4.13
    11   474.20 4.13
    12   474.20 4.13
    13   474.20 4.13
    14   474.20 4.13
    15   474.20 4.13
    16   474.20 4.13
12     0.00
     1   597.73 3.79
     2   597.73 3.79
     3   597.73 3.79
     4   597.73 3.79
     5   597.73 3.79
     6   597.73 3.79
     7   597.73 3.79
     8   597.73 3.79
     9   597.73 3.79
    10   597.73 3.79
    11   597.73 3.79
    12   597.73 3.79
    13   597.73 3.79
    14   597.73 3.79
    15   597.73 3.79
    16   597.73 3.79
13     0.00
     1   626.04 3.52
     2   626.04 3.52
     3   626.04 3.52
     4   626.04 3.52
```

```
     5   626.04 3.52
     6   626.04 3.52
     7   626.04 3.52
     8   626.04 3.52
     9   626.04 3.52
    10   626.04 3.52
    11   626.04 3.52
    12   626.04 3.52
    13   626.04 3.52
    14   626.04 3.52
    15   626.04 3.52
    16   626.04 3.52
14     0.00
     1   614.81 3.57
     2   614.81 3.57
     3   614.81 3.57
     4   614.81 3.57
     5   614.81 3.57
     6   614.81 3.57
     7   614.81 3.57
     8   614.81 3.57
     9   614.81 3.57
    10   614.81 3.57
    11   614.81 3.57
    12   614.81 3.57
    13   614.81 3.57
    14   614.81 3.57
    15   614.81 3.57
    16   614.81 3.57
15     0.00
     1   715.29 3.09
     2   715.29 3.09
     3   715.29 3.09
     4   715.29 3.09
     5   715.29 3.09
     6   715.29 3.09
     7   715.29 3.09
     8   715.29 3.09
     9   715.29 3.09
    10   715.29 3.09
    11   715.29 3.09
    12   715.29 3.09
    13   715.29 3.09
    14   715.29 3.09
    15   715.29 3.09
    16   715.29 3.09
16     0.00
     1   731.08 2.75
     2   731.08 2.75
     3   731.08 2.75
     4   731.08 2.75
     5   731.08 2.75
     6   731.08 2.75
     7   731.08 2.75
```

```
     8   731.08 2.75
     9   731.08 2.75
    10   731.08 2.75
    11   731.08 2.75
    12   731.08 2.75
    13   731.08 2.75
    14   731.08 2.75
    15   731.08 2.75
    16   731.08 2.75
17     0.00
     1   755.72 3.03
     2   755.72 3.03
     3   755.72 3.03
     4   755.72 3.03
     5   755.72 3.03
     6   755.72 3.03
     7   755.72 3.03
     8   755.72 3.03
     9   755.72 3.03
    10   755.72 3.03
    11   755.72 3.03
    12   755.72 3.03
    13   755.72 3.03
    14   755.72 3.03
    15   755.72 3.03
    16   755.72 3.03
18     0.00
     1   840.10 2.62
     2   840.10 2.62
     3   840.10 2.62
     4   840.10 2.62
     5   840.10 2.62
     6   840.10 2.62
     7   840.10 2.62
     8   840.10 2.62
     9   840.10 2.62
    10   840.10 2.62
    11   840.10 2.62
    12   840.10 2.62
    13   840.10 2.62
    14   840.10 2.62
    15   840.10 2.62
    16   840.10 2.62
19     0.00
     1   585.99 2.77
     2   585.99 2.77
     3   585.99 2.77
     4   585.99 2.77
     5   585.99 2.77
     6   585.99 2.77
     7   585.99 2.77
     8   585.99 2.77
     9   585.99 2.77
    10   585.99 2.77
```

```
    11   585.99 2.77
    12   585.99 2.77
    13   585.99 2.77
    14   585.99 2.77
    15   585.99 2.77
    16   585.99 2.77
20     0.00
     1   439.63 2.45
     2   439.63 2.45
     3   439.63 2.45
     4   439.63 2.45
     5   439.63 2.45
     6   439.63 2.45
     7   439.63 2.45
     8   439.63 2.45
     9   439.63 2.45
    10   439.63 2.45
    11   439.63 2.45
    12   439.63 2.45
    13   439.63 2.45
    14   439.63 2.45
    15   439.63 2.45
    16   439.63 2.45
21     0.00
     1   332.88 3.53
     2   332.88 3.53
     3   332.88 3.53
     4   332.88 3.53
     5   332.88 3.53
     6   332.88 3.53
     7   332.88 3.53
     8   332.88 3.53
     9   332.88 3.53
    10   332.88 3.53
    11   332.88 3.53
    12   332.88 3.53
    13   332.88 3.53
    14   332.88 3.53
    15   332.88 3.53
    16   332.88 3.53
22     0.00
     1   334.10 3.81
     2   334.10 3.81
     3   334.10 3.81
     4   334.10 3.81
     5   334.10 3.81
     6   334.10 3.81
     7   334.10 3.81
     8   334.10 3.81
     9   334.10 3.81
    10   334.10 3.81
    11   334.10 3.81
    12   334.10 3.81
    13   334.10 3.81
```

```
    14   334.10 3.81
    15   334.10 3.81
    16   334.10 3.81
23     0.00
     1   251.11 3.64
     2   251.11 3.64
     3   251.11 3.64
     4   251.11 3.64
     5   251.11 3.64
     6   251.11 3.64
     7   251.11 3.64
     8   251.11 3.64
     9   251.11 3.64
    10   251.11 3.64
    11   251.11 3.64
    12   251.11 3.64
    13   251.11 3.64
    14   251.11 3.64
    15   251.11 3.64
    16   251.11 3.64
24     0.00
     1   192.62 3.02
     2   192.62 3.02
     3   192.62 3.02
     4   192.62 3.02
     5   192.62 3.02
     6   192.62 3.02
     7   192.62 3.02
     8   192.62 3.02
     9   192.62 3.02
    10   192.62 3.02
    11   192.62 3.02
    12   192.62 3.02
    13   192.62 3.02
    14   192.62 3.02
    15   192.62 3.02
    16   192.62 3.02
```

```
'EB24toWC, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 16
    1 1
'Link_58                                ' 'AG' 581399.96 4194647.37 581426.78 4194657.33
-7.38   12.28
    2 1
'Link_59                                ' 'AG' 581384.90 4194642.42 581399.96 4194647.37
-6.67   12.28
    3 1
'Link_60                                ' 'AG' 581369.00 4194638.93 581384.90 4194642.42
-5.96   12.28
    4 1
'Link_61                                ' 'AG' 581352.15 4194635.45 581369.00 4194638.93
-4.92   12.28
    5 1
'Link_62                                ' 'AG' 581338.28 4194632.98 581352.15 4194635.45
-3.80   12.28
    6 1
'Link_63                                ' 'AG' 581308.84 4194633.76 581338.28 4194632.98
-2.54   12.28
    7 1
'Link_64                                ' 'AG' 581286.39 4194634.57 581308.84 4194633.76
-1.40   12.28
    8 1
'Link_65                                ' 'AG' 581268.37 4194637.82 581286.39 4194634.57
-0.80   12.28
    9 1
'Link_66                                ' 'AG' 581243.47 4194643.47 581268.37 4194637.82
-0.20   12.28
    10 1
'Link_67                                ' 'AG' 581225.09 4194647.65 581243.47 4194643.47
0.17   12.28
    11 1
'Link_68                                ' 'AG' 581204.87 4194652.27 581225.09 4194647.65
0.24   12.28
    12 1
'Link_69                                ' 'AG' 581186.61 4194657.85 581204.87 4194652.27
0.65   12.28
    13 1
'Link_70                                ' 'AG' 581166.04 4194664.33 581186.61 4194657.85
2.27   12.28
    14 1
'Link_71                                ' 'AG' 581152.20 4194668.48 581166.04 4194664.33
```

```
4.04   12.28
    15 1
'Link_72                                ' 'AG' 581126.76 4194677.31 581152.20 4194668.48
4.56   12.28
    16 1
'Link_73                                ' 'AG' 581102.79 4194685.27 581126.76 4194677.31
4.45   12.28
 1     0.00
      1    10.80 70.39
      2    10.80 70.39
      3    10.80 70.39
      4    10.80 70.39
      5    10.80 70.39
      6    10.80 70.39
      7    10.80 70.39
      8    10.80 70.39
      9    10.80 70.39
     10    10.80 70.39
     11    10.80 70.39
     12    10.80 70.39
     13    10.80 70.39
     14    10.80 70.39
     15    10.80 70.39
     16    10.80 70.39
 2     0.00
      1     9.08 62.19
      2     9.08 62.19
      3     9.08 62.19
      4     9.08 62.19
      5     9.08 62.19
      6     9.08 62.19
      7     9.08 62.19
      8     9.08 62.19
      9     9.08 62.19
     10     9.08 62.19
     11     9.08 62.19
     12     9.08 62.19
     13     9.08 62.19
     14     9.08 62.19
     15     9.08 62.19
     16     9.08 62.19
 3     0.00
      1    11.91 58.32
      2    11.91 58.32
      3    11.91 58.32
      4    11.91 58.32
      5    11.91 58.32
      6    11.91 58.32
      7    11.91 58.32
      8    11.91 58.32
      9    11.91 58.32
     10    11.91 58.32
     11    11.91 58.32
     12    11.91 58.32
```

```
    13    11.91 58.32
    14    11.91 58.32
    15    11.91 58.32
    16    11.91 58.32
4     0.00
     1     8.61 76.15
     2     8.61 76.15
     3     8.61 76.15
     4     8.61 76.15
     5     8.61 76.15
     6     8.61 76.15
     7     8.61 76.15
     8     8.61 76.15
     9     8.61 76.15
    10     8.61 76.15
    11     8.61 76.15
    12     8.61 76.15
    13     8.61 76.15
    14     8.61 76.15
    15     8.61 76.15
    16     8.61 76.15
5     0.00
     1     6.75 69.86
     2     6.75 69.86
     3     6.75 69.86
     4     6.75 69.86
     5     6.75 69.86
     6     6.75 69.86
     7     6.75 69.86
     8     6.75 69.86
     9     6.75 69.86
    10     6.75 69.86
    11     6.75 69.86
    12     6.75 69.86
    13     6.75 69.86
    14     6.75 69.86
    15     6.75 69.86
    16     6.75 69.86
6     0.00
     1     7.24 84.31
     2     7.24 84.31
     3     7.24 84.31
     4     7.24 84.31
     5     7.24 84.31
     6     7.24 84.31
     7     7.24 84.31
     8     7.24 84.31
     9     7.24 84.31
    10     7.24 84.31
    11     7.24 84.31
    12     7.24 84.31
    13     7.24 84.31
    14     7.24 84.31
    15     7.24 84.31
```

```
    16     7.24 84.31
7     0.00
     1    12.20 84.70
     2    12.20 84.70
     3    12.20 84.70
     4    12.20 84.70
     5    12.20 84.70
     6    12.20 84.70
     7    12.20 84.70
     8    12.20 84.70
     9    12.20 84.70
    10    12.20 84.70
    11    12.20 84.70
    12    12.20 84.70
    13    12.20 84.70
    14    12.20 84.70
    15    12.20 84.70
    16    12.20 84.70
8     0.00
     1    11.91 79.73
     2    11.91 79.73
     3    11.91 79.73
     4    11.91 79.73
     5    11.91 79.73
     6    11.91 79.73
     7    11.91 79.73
     8    11.91 79.73
     9    11.91 79.73
    10    11.91 79.73
    11    11.91 79.73
    12    11.91 79.73
    13    11.91 79.73
    14    11.91 79.73
    15    11.91 79.73
    16    11.91 79.73
9     0.00
     1    16.03 75.90
     2    16.03 75.90
     3    16.03 75.90
     4    16.03 75.90
     5    16.03 75.90
     6    16.03 75.90
     7    16.03 75.90
     8    16.03 75.90
     9    16.03 75.90
    10    16.03 75.90
    11    16.03 75.90
    12    16.03 75.90
    13    16.03 75.90
    14    16.03 75.90
    15    16.03 75.90
    16    16.03 75.90
10     0.00
     1    17.16 79.07
```

```
     2    17.16 79.07
     3    17.16 79.07
     4    17.16 79.07
     5    17.16 79.07
     6    17.16 79.07
     7    17.16 79.07
     8    17.16 79.07
     9    17.16 79.07
    10    17.16 79.07
    11    17.16 79.07
    12    17.16 79.07
    13    17.16 79.07
    14    17.16 79.07
    15    17.16 79.07
    16    17.16 79.07
11     0.00
     1    15.95 78.46
     2    15.95 78.46
     3    15.95 78.46
     4    15.95 78.46
     5    15.95 78.46
     6    15.95 78.46
     7    15.95 78.46
     8    15.95 78.46
     9    15.95 78.46
    10    15.95 78.46
    11    15.95 78.46
    12    15.95 78.46
    13    15.95 78.46
    14    15.95 78.46
    15    15.95 78.46
    16    15.95 78.46
12     0.00
     1    17.01 79.38
     2    17.01 79.38
     3    17.01 79.38
     4    17.01 79.38
     5    17.01 79.38
     6    17.01 79.38
     7    17.01 79.38
     8    17.01 79.38
     9    17.01 79.38
    10    17.01 79.38
    11    17.01 79.38
    12    17.01 79.38
    13    17.01 79.38
    14    17.01 79.38
    15    17.01 79.38
    16    17.01 79.38
13     0.00
     1    14.87 82.55
     2    14.87 82.55
     3    14.87 82.55
     4    14.87 82.55
```

```
     5    14.87 82.55
     6    14.87 82.55
     7    14.87 82.55
     8    14.87 82.55
     9    14.87 82.55
    10    14.87 82.55
    11    14.87 82.55
    12    14.87 82.55
    13    14.87 82.55
    14    14.87 82.55
    15    14.87 82.55
    16    14.87 82.55
14     0.00
     1    15.16 81.56
     2    15.16 81.56
     3    15.16 81.56
     4    15.16 81.56
     5    15.16 81.56
     6    15.16 81.56
     7    15.16 81.56
     8    15.16 81.56
     9    15.16 81.56
    10    15.16 81.56
    11    15.16 81.56
    12    15.16 81.56
    13    15.16 81.56
    14    15.16 81.56
    15    15.16 81.56
    16    15.16 81.56
15     0.00
     1    12.49 84.91
     2    12.49 84.91
     3    12.49 84.91
     4    12.49 84.91
     5    12.49 84.91
     6    12.49 84.91
     7    12.49 84.91
     8    12.49 84.91
     9    12.49 84.91
    10    12.49 84.91
    11    12.49 84.91
    12    12.49 84.91
    13    12.49 84.91
    14    12.49 84.91
    15    12.49 84.91
    16    12.49 84.91
16     0.00
     1     9.71 82.97
     2     9.71 82.97
     3     9.71 82.97
     4     9.71 82.97
     5     9.71 82.97
     6     9.71 82.97
     7     9.71 82.97
```

```
     8     9.71 82.97
     9     9.71 82.97
    10     9.71 82.97
    11     9.71 82.97
    12     9.71 82.97
    13     9.71 82.97
    14     9.71 82.97
    15     9.71 82.97
    16     9.71 82.97
17     0.00
     1    12.51 85.04
     2    12.51 85.04
     3    12.51 85.04
     4    12.51 85.04
     5    12.51 85.04
     6    12.51 85.04
     7    12.51 85.04
     8    12.51 85.04
     9    12.51 85.04
    10    12.51 85.04
    11    12.51 85.04
    12    12.51 85.04
    13    12.51 85.04
    14    12.51 85.04
    15    12.51 85.04
    16    12.51 85.04
18     0.00
     1    11.00 73.36
     2    11.00 73.36
     3    11.00 73.36
     4    11.00 73.36
     5    11.00 73.36
     6    11.00 73.36
     7    11.00 73.36
     8    11.00 73.36
     9    11.00 73.36
    10    11.00 73.36
    11    11.00 73.36
    12    11.00 73.36
    13    11.00 73.36
    14    11.00 73.36
    15    11.00 73.36
    16    11.00 73.36
19     0.00
     1     8.79 75.88
     2     8.79 75.88
     3     8.79 75.88
     4     8.79 75.88
     5     8.79 75.88
     6     8.79 75.88
     7     8.79 75.88
     8     8.79 75.88
     9     8.79 75.88
    10     8.79 75.88
```

```
    11     8.79 75.88
    12     8.79 75.88
    13     8.79 75.88
    14     8.79 75.88
    15     8.79 75.88
    16     8.79 75.88
20     0.00
     1     4.08 83.24
     2     4.08 83.24
     3     4.08 83.24
     4     4.08 83.24
     5     4.08 83.24
     6     4.08 83.24
     7     4.08 83.24
     8     4.08 83.24
     9     4.08 83.24
    10     4.08 83.24
    11     4.08 83.24
    12     4.08 83.24
    13     4.08 83.24
    14     4.08 83.24
    15     4.08 83.24
    16     4.08 83.24
21     0.00
     1     8.72 75.67
     2     8.72 75.67
     3     8.72 75.67
     4     8.72 75.67
     5     8.72 75.67
     6     8.72 75.67
     7     8.72 75.67
     8     8.72 75.67
     9     8.72 75.67
    10     8.72 75.67
    11     8.72 75.67
    12     8.72 75.67
    13     8.72 75.67
    14     8.72 75.67
    15     8.72 75.67
    16     8.72 75.67
22     0.00
     1     9.35 81.67
     2     9.35 81.67
     3     9.35 81.67
     4     9.35 81.67
     5     9.35 81.67
     6     9.35 81.67
     7     9.35 81.67
     8     9.35 81.67
     9     9.35 81.67
    10     9.35 81.67
    11     9.35 81.67
    12     9.35 81.67
    13     9.35 81.67
```

```
    14     9.35 81.67
    15     9.35 81.67
    16     9.35 81.67
23     0.00
     1     6.96 75.82
     2     6.96 75.82
     3     6.96 75.82
     4     6.96 75.82
     5     6.96 75.82
     6     6.96 75.82
     7     6.96 75.82
     8     6.96 75.82
     9     6.96 75.82
    10     6.96 75.82
    11     6.96 75.82
    12     6.96 75.82
    13     6.96 75.82
    14     6.96 75.82
    15     6.96 75.82
    16     6.96 75.82
24     0.00
     1     3.48 77.61
     2     3.48 77.61
     3     3.48 77.61
     4     3.48 77.61
     5     3.48 77.61
     6     3.48 77.61
     7     3.48 77.61
     8     3.48 77.61
     9     3.48 77.61
    10     3.48 77.61
    11     3.48 77.61
    12     3.48 77.61
    13     3.48 77.61
    14     3.48 77.61
    15     3.48 77.61
    16     3.48 77.61
```

Westbound 24 from Northbound 680

```
'WB24fromNB680, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 15
    1 1
'Link_19                                ' 'AG' 581368.69 4194723.99 581310.07 4194719.76
-1.77   13.90
    2 1
'Link_20                                ' 'AG' 581310.07 4194719.76 581291.04 4194719.27
-0.55   13.90
    3 1
'Link_21                                ' 'AG' 581291.04 4194719.27 581272.36 4194718.42
-0.21   13.90
    4 1
'Link_22                                ' 'AG' 581272.36 4194718.42 581250.41 4194718.83
0.74   13.90
    5 1
'Link_23                                ' 'AG' 581250.41 4194718.83 581231.35 4194719.14
2.36   13.90
    6 1
'Link_24                                ' 'AG' 581231.35 4194719.14 581216.07 4194720.63
3.36   13.90
    7 1
'Link_25                                ' 'AG' 581216.07 4194720.63 581194.64 4194722.45
3.94   13.90
    8 1
'Link_26                                ' 'AG' 581194.64 4194722.45 581175.98 4194725.37
4.83   13.90
    9 1
'Link_27                                ' 'AG' 581175.98 4194725.37 581155.29 4194729.42
6.67   13.90
    10 1
'Link_28                                ' 'AG' 581155.29 4194729.42 581135.61 4194733.90
8.52   13.90
    11 1
'Link_29                                ' 'AG' 581135.61 4194733.90 581115.68 4194738.54
9.21   13.90
    12 1
'Link_30                                ' 'AG' 581115.68 4194738.54 581095.68 4194743.14
9.45   13.90
    13 1
'Link_31                                ' 'AG' 581095.68 4194743.14 581061.49 4194754.42
10.00   13.90
    14 1
'Link_32                                ' 'AG' 581061.49 4194754.42 581026.76 4194764.48
```

```
10.00   13.90
    15 1
'Link_33                                ' 'AG' 581026.76 4194764.48 580987.60 4194776.70
10.00   13.90
 1     0.00
      1   180.28 75.13
      2   180.28 75.13
      3   180.28 75.13
      4   180.28 75.13
      5   180.28 75.13
      6   180.28 75.13
      7   180.28 75.13
      8   180.28 75.13
      9   180.28 75.13
     10   180.28 75.13
     11   180.28 75.13
     12   180.28 75.13
     13   180.28 75.13
     14   180.28 75.13
     15   180.28 75.13
 2     0.00
      1    58.42 76.69
      2    58.42 76.69
      3    58.42 76.69
      4    58.42 76.69
      5    58.42 76.69
      6    58.42 76.69
      7    58.42 76.69
      8    58.42 76.69
      9    58.42 76.69
     10    58.42 76.69
     11    58.42 76.69
     12    58.42 76.69
     13    58.42 76.69
     14    58.42 76.69
     15    58.42 76.69
 3     0.00
      1    57.41 112.31
      2    57.41 112.31
      3    57.41 112.31
      4    57.41 112.31
      5    57.41 112.31
      6    57.41 112.31
      7    57.41 112.31
      8    57.41 112.31
      9    57.41 112.31
     10    57.41 112.31
     11    57.41 112.31
     12    57.41 112.31
     13    57.41 112.31
     14    57.41 112.31
     15    57.41 112.31
 4     0.00
      1    26.83 83.28
```

```
     2    26.83 83.28
     3    26.83 83.28
     4    26.83 83.28
     5    26.83 83.28
     6    26.83 83.28
     7    26.83 83.28
     8    26.83 83.28
     9    26.83 83.28
    10    26.83 83.28
    11    26.83 83.28
    12    26.83 83.28
    13    26.83 83.28
    14    26.83 83.28
    15    26.83 83.28
5     0.00
     1    75.90 81.29
     2    75.90 81.29
     3    75.90 81.29
     4    75.90 81.29
     5    75.90 81.29
     6    75.90 81.29
     7    75.90 81.29
     8    75.90 81.29
     9    75.90 81.29
    10    75.90 81.29
    11    75.90 81.29
    12    75.90 81.29
    13    75.90 81.29
    14    75.90 81.29
    15    75.90 81.29
6     0.00
     1   140.15 81.93
     2   140.15 81.93
     3   140.15 81.93
     4   140.15 81.93
     5   140.15 81.93
     6   140.15 81.93
     7   140.15 81.93
     8   140.15 81.93
     9   140.15 81.93
    10   140.15 81.93
    11   140.15 81.93
    12   140.15 81.93
    13   140.15 81.93
    14   140.15 81.93
    15   140.15 81.93
7     0.00
     1   636.19 74.71
     2   636.19 74.71
     3   636.19 74.71
     4   636.19 74.71
     5   636.19 74.71
     6   636.19 74.71
     7   636.19 74.71
```

```
      8   636.19 74.71
      9   636.19 74.71
     10   636.19 74.71
     11   636.19 74.71
     12   636.19 74.71
     13   636.19 74.71
     14   636.19 74.71
     15   636.19 74.71
 8     0.00
      1  1350.44 74.64
      2  1350.44 74.64
      3  1350.44 74.64
      4  1350.44 74.64
      5  1350.44 74.64
      6  1350.44 74.64
      7  1350.44 74.64
      8  1350.44 74.64
      9  1350.44 74.64
     10  1350.44 74.64
     11  1350.44 74.64
     12  1350.44 74.64
     13  1350.44 74.64
     14  1350.44 74.64
     15  1350.44 74.64
 9     0.00
      1  1222.17 77.22
      2  1222.17 77.22
      3  1222.17 77.22
      4  1222.17 77.22
      5  1222.17 77.22
      6  1222.17 77.22
      7  1222.17 77.22
      8  1222.17 77.22
      9  1222.17 77.22
     10  1222.17 77.22
     11  1222.17 77.22
     12  1222.17 77.22
     13  1222.17 77.22
     14  1222.17 77.22
     15  1222.17 77.22
10     0.00
      1   733.31 78.00
      2   733.31 78.00
      3   733.31 78.00
      4   733.31 78.00
      5   733.31 78.00
      6   733.31 78.00
      7   733.31 78.00
      8   733.31 78.00
      9   733.31 78.00
     10   733.31 78.00
     11   733.31 78.00
     12   733.31 78.00
     13   733.31 78.00
```

```
    14   733.31 78.00
    15   733.31 78.00
11     0.00
     1   790.71 77.64
     2   790.71 77.64
     3   790.71 77.64
     4   790.71 77.64
     5   790.71 77.64
     6   790.71 77.64
     7   790.71 77.64
     8   790.71 77.64
     9   790.71 77.64
    10   790.71 77.64
    11   790.71 77.64
    12   790.71 77.64
    13   790.71 77.64
    14   790.71 77.64
    15   790.71 77.64
12     0.00
     1  1002.02 76.53
     2  1002.02 76.53
     3  1002.02 76.53
     4  1002.02 76.53
     5  1002.02 76.53
     6  1002.02 76.53
     7  1002.02 76.53
     8  1002.02 76.53
     9  1002.02 76.53
    10  1002.02 76.53
    11  1002.02 76.53
    12  1002.02 76.53
    13  1002.02 76.53
    14  1002.02 76.53
    15  1002.02 76.53
13     0.00
     1  1054.56 75.64
     2  1054.56 75.64
     3  1054.56 75.64
     4  1054.56 75.64
     5  1054.56 75.64
     6  1054.56 75.64
     7  1054.56 75.64
     8  1054.56 75.64
     9  1054.56 75.64
    10  1054.56 75.64
    11  1054.56 75.64
    12  1054.56 75.64
    13  1054.56 75.64
    14  1054.56 75.64
    15  1054.56 75.64
14     0.00
     1  1034.69 76.37
     2  1034.69 76.37
     3  1034.69 76.37
```

```
     4  1034.69 76.37
     5  1034.69 76.37
     6  1034.69 76.37
     7  1034.69 76.37
     8  1034.69 76.37
     9  1034.69 76.37
    10  1034.69 76.37
    11  1034.69 76.37
    12  1034.69 76.37
    13  1034.69 76.37
    14  1034.69 76.37
    15  1034.69 76.37
15     0.00
     1  1212.68 75.42
     2  1212.68 75.42
     3  1212.68 75.42
     4  1212.68 75.42
     5  1212.68 75.42
     6  1212.68 75.42
     7  1212.68 75.42
     8  1212.68 75.42
     9  1212.68 75.42
    10  1212.68 75.42
    11  1212.68 75.42
    12  1212.68 75.42
    13  1212.68 75.42
    14  1212.68 75.42
    15  1212.68 75.42
16     0.00
     1  1244.71 76.07
     2  1244.71 76.07
     3  1244.71 76.07
     4  1244.71 76.07
     5  1244.71 76.07
     6  1244.71 76.07
     7  1244.71 76.07
     8  1244.71 76.07
     9  1244.71 76.07
    10  1244.71 76.07
    11  1244.71 76.07
    12  1244.71 76.07
    13  1244.71 76.07
    14  1244.71 76.07
    15  1244.71 76.07
17     0.00
     1  1282.40 78.19
     2  1282.40 78.19
     3  1282.40 78.19
     4  1282.40 78.19
     5  1282.40 78.19
     6  1282.40 78.19
     7  1282.40 78.19
     8  1282.40 78.19
     9  1282.40 78.19
```

```
    10  1282.40 78.19
    11  1282.40 78.19
    12  1282.40 78.19
    13  1282.40 78.19
    14  1282.40 78.19
    15  1282.40 78.19
18     0.00
     1  1430.60 75.97
     2  1430.60 75.97
     3  1430.60 75.97
     4  1430.60 75.97
     5  1430.60 75.97
     6  1430.60 75.97
     7  1430.60 75.97
     8  1430.60 75.97
     9  1430.60 75.97
    10  1430.60 75.97
    11  1430.60 75.97
    12  1430.60 75.97
    13  1430.60 75.97
    14  1430.60 75.97
    15  1430.60 75.97
19     0.00
     1   995.97 75.10
     2   995.97 75.10
     3   995.97 75.10
     4   995.97 75.10
     5   995.97 75.10
     6   995.97 75.10
     7   995.97 75.10
     8   995.97 75.10
     9   995.97 75.10
    10   995.97 75.10
    11   995.97 75.10
    12   995.97 75.10
    13   995.97 75.10
    14   995.97 75.10
    15   995.97 75.10
20     0.00
     1   751.53 75.14
     2   751.53 75.14
     3   751.53 75.14
     4   751.53 75.14
     5   751.53 75.14
     6   751.53 75.14
     7   751.53 75.14
     8   751.53 75.14
     9   751.53 75.14
    10   751.53 75.14
    11   751.53 75.14
    12   751.53 75.14
    13   751.53 75.14
    14   751.53 75.14
    15   751.53 75.14
```

```
21     0.00
     1   559.33 74.67
     2   559.33 74.67
     3   559.33 74.67
     4   559.33 74.67
     5   559.33 74.67
     6   559.33 74.67
     7   559.33 74.67
     8   559.33 74.67
     9   559.33 74.67
    10   559.33 74.67
    11   559.33 74.67
    12   559.33 74.67
    13   559.33 74.67
    14   559.33 74.67
    15   559.33 74.67
22     0.00
     1   560.37 74.52
     2   560.37 74.52
     3   560.37 74.52
     4   560.37 74.52
     5   560.37 74.52
     6   560.37 74.52
     7   560.37 74.52
     8   560.37 74.52
     9   560.37 74.52
    10   560.37 74.52
    11   560.37 74.52
    12   560.37 74.52
    13   560.37 74.52
    14   560.37 74.52
    15   560.37 74.52
23     0.00
     1   421.29 75.06
     2   421.29 75.06
     3   421.29 75.06
     4   421.29 75.06
     5   421.29 75.06
     6   421.29 75.06
     7   421.29 75.06
     8   421.29 75.06
     9   421.29 75.06
    10   421.29 75.06
    11   421.29 75.06
    12   421.29 75.06
    13   421.29 75.06
    14   421.29 75.06
    15   421.29 75.06
24     0.00
     1   326.36 76.00
     2   326.36 76.00
     3   326.36 76.00
     4   326.36 76.00
     5   326.36 76.00
```

```
  6   326.36 76.00
  7   326.36 76.00
  8   326.36 76.00
  9   326.36 76.00
 10   326.36 76.00
 11   326.36 76.00
 12   326.36 76.00
 13   326.36 76.00
 14   326.36 76.00
 15   326.36 76.00
```

```
'WB24fromNB680, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 15
    1 1
'Link_19                                ' 'AG' 581368.69 4194723.99 581310.07 4194719.76
-1.77   13.90
    2 1
'Link_20                                ' 'AG' 581310.07 4194719.76 581291.04 4194719.27
-0.55   13.90
    3 1
'Link_21                                ' 'AG' 581291.04 4194719.27 581272.36 4194718.42
-0.21   13.90
    4 1
'Link_22                                ' 'AG' 581272.36 4194718.42 581250.41 4194718.83
0.74   13.90
    5 1
'Link_23                                ' 'AG' 581250.41 4194718.83 581231.35 4194719.14
2.36   13.90
    6 1
'Link_24                                ' 'AG' 581231.35 4194719.14 581216.07 4194720.63
3.36   13.90
    7 1
'Link_25                                ' 'AG' 581216.07 4194720.63 581194.64 4194722.45
3.94   13.90
    8 1
'Link_26                                ' 'AG' 581194.64 4194722.45 581175.98 4194725.37
4.83   13.90
    9 1
'Link_27                                ' 'AG' 581175.98 4194725.37 581155.29 4194729.42
6.67   13.90
    10 1
'Link_28                                ' 'AG' 581155.29 4194729.42 581135.61 4194733.90
8.52   13.90
    11 1
'Link_29                                ' 'AG' 581135.61 4194733.90 581115.68 4194738.54
9.21   13.90
    12 1
'Link_30                                ' 'AG' 581115.68 4194738.54 581095.68 4194743.14
9.45   13.90
    13 1
'Link_31                                ' 'AG' 581095.68 4194743.14 581061.49 4194754.42
10.00   13.90
    14 1
'Link_32                                ' 'AG' 581061.49 4194754.42 581026.76 4194764.48
```

```
10.00   13.90
    15 1
'Link_33                                ' 'AG' 581026.76 4194764.48 580987.60 4194776.70
10.00   13.90
 1     0.00
      1   180.28 72.44
      2   180.28 72.44
      3   180.28 72.44
      4   180.28 72.44
      5   180.28 72.44
      6   180.28 72.44
      7   180.28 72.44
      8   180.28 72.44
      9   180.28 72.44
     10   180.28 72.44
     11   180.28 72.44
     12   180.28 72.44
     13   180.28 72.44
     14   180.28 72.44
     15   180.28 72.44
 2     0.00
      1    58.42 74.29
      2    58.42 74.29
      3    58.42 74.29
      4    58.42 74.29
      5    58.42 74.29
      6    58.42 74.29
      7    58.42 74.29
      8    58.42 74.29
      9    58.42 74.29
     10    58.42 74.29
     11    58.42 74.29
     12    58.42 74.29
     13    58.42 74.29
     14    58.42 74.29
     15    58.42 74.29
 3     0.00
      1    57.41 100.15
      2    57.41 100.15
      3    57.41 100.15
      4    57.41 100.15
      5    57.41 100.15
      6    57.41 100.15
      7    57.41 100.15
      8    57.41 100.15
      9    57.41 100.15
     10    57.41 100.15
     11    57.41 100.15
     12    57.41 100.15
     13    57.41 100.15
     14    57.41 100.15
     15    57.41 100.15
 4     0.00
      1    26.83 79.63
```

```
      2    26.83 79.63
      3    26.83 79.63
      4    26.83 79.63
      5    26.83 79.63
      6    26.83 79.63
      7    26.83 79.63
      8    26.83 79.63
      9    26.83 79.63
     10    26.83 79.63
     11    26.83 79.63
     12    26.83 79.63
     13    26.83 79.63
     14    26.83 79.63
     15    26.83 79.63
5     0.00
      1    75.90 77.16
      2    75.90 77.16
      3    75.90 77.16
      4    75.90 77.16
      5    75.90 77.16
      6    75.90 77.16
      7    75.90 77.16
      8    75.90 77.16
      9    75.90 77.16
     10    75.90 77.16
     11    75.90 77.16
     12    75.90 77.16
     13    75.90 77.16
     14    75.90 77.16
     15    75.90 77.16
6     0.00
      1   140.15 79.84
      2   140.15 79.84
      3   140.15 79.84
      4   140.15 79.84
      5   140.15 79.84
      6   140.15 79.84
      7   140.15 79.84
      8   140.15 79.84
      9   140.15 79.84
     10   140.15 79.84
     11   140.15 79.84
     12   140.15 79.84
     13   140.15 79.84
     14   140.15 79.84
     15   140.15 79.84
7     0.00
      1   636.19 72.46
      2   636.19 72.46
      3   636.19 72.46
      4   636.19 72.46
      5   636.19 72.46
      6   636.19 72.46
      7   636.19 72.46
```

```
      8   636.19 72.46
      9   636.19 72.46
     10   636.19 72.46
     11   636.19 72.46
     12   636.19 72.46
     13   636.19 72.46
     14   636.19 72.46
     15   636.19 72.46
 8     0.00
      1  1350.44 71.95
      2  1350.44 71.95
      3  1350.44 71.95
      4  1350.44 71.95
      5  1350.44 71.95
      6  1350.44 71.95
      7  1350.44 71.95
      8  1350.44 71.95
      9  1350.44 71.95
     10  1350.44 71.95
     11  1350.44 71.95
     12  1350.44 71.95
     13  1350.44 71.95
     14  1350.44 71.95
     15  1350.44 71.95
 9     0.00
      1  1222.17 74.88
      2  1222.17 74.88
      3  1222.17 74.88
      4  1222.17 74.88
      5  1222.17 74.88
      6  1222.17 74.88
      7  1222.17 74.88
      8  1222.17 74.88
      9  1222.17 74.88
     10  1222.17 74.88
     11  1222.17 74.88
     12  1222.17 74.88
     13  1222.17 74.88
     14  1222.17 74.88
     15  1222.17 74.88
10     0.00
      1   733.31 75.60
      2   733.31 75.60
      3   733.31 75.60
      4   733.31 75.60
      5   733.31 75.60
      6   733.31 75.60
      7   733.31 75.60
      8   733.31 75.60
      9   733.31 75.60
     10   733.31 75.60
     11   733.31 75.60
     12   733.31 75.60
     13   733.31 75.60
```

```
    14   733.31 75.60
    15   733.31 75.60
11     0.00
     1   790.71 74.54
     2   790.71 74.54
     3   790.71 74.54
     4   790.71 74.54
     5   790.71 74.54
     6   790.71 74.54
     7   790.71 74.54
     8   790.71 74.54
     9   790.71 74.54
    10   790.71 74.54
    11   790.71 74.54
    12   790.71 74.54
    13   790.71 74.54
    14   790.71 74.54
    15   790.71 74.54
12     0.00
     1  1002.02 74.05
     2  1002.02 74.05
     3  1002.02 74.05
     4  1002.02 74.05
     5  1002.02 74.05
     6  1002.02 74.05
     7  1002.02 74.05
     8  1002.02 74.05
     9  1002.02 74.05
    10  1002.02 74.05
    11  1002.02 74.05
    12  1002.02 74.05
    13  1002.02 74.05
    14  1002.02 74.05
    15  1002.02 74.05
13     0.00
     1  1054.56 72.78
     2  1054.56 72.78
     3  1054.56 72.78
     4  1054.56 72.78
     5  1054.56 72.78
     6  1054.56 72.78
     7  1054.56 72.78
     8  1054.56 72.78
     9  1054.56 72.78
    10  1054.56 72.78
    11  1054.56 72.78
    12  1054.56 72.78
    13  1054.56 72.78
    14  1054.56 72.78
    15  1054.56 72.78
14     0.00
     1  1034.69 73.52
     2  1034.69 73.52
     3  1034.69 73.52
```

```
      4  1034.69 73.52
      5  1034.69 73.52
      6  1034.69 73.52
      7  1034.69 73.52
      8  1034.69 73.52
      9  1034.69 73.52
     10  1034.69 73.52
     11  1034.69 73.52
     12  1034.69 73.52
     13  1034.69 73.52
     14  1034.69 73.52
     15  1034.69 73.52
 15     0.00
      1  1212.68 72.77
      2  1212.68 72.77
      3  1212.68 72.77
      4  1212.68 72.77
      5  1212.68 72.77
      6  1212.68 72.77
      7  1212.68 72.77
      8  1212.68 72.77
      9  1212.68 72.77
     10  1212.68 72.77
     11  1212.68 72.77
     12  1212.68 72.77
     13  1212.68 72.77
     14  1212.68 72.77
     15  1212.68 72.77
 16     0.00
      1  1244.71 73.39
      2  1244.71 73.39
      3  1244.71 73.39
      4  1244.71 73.39
      5  1244.71 73.39
      6  1244.71 73.39
      7  1244.71 73.39
      8  1244.71 73.39
      9  1244.71 73.39
     10  1244.71 73.39
     11  1244.71 73.39
     12  1244.71 73.39
     13  1244.71 73.39
     14  1244.71 73.39
     15  1244.71 73.39
 17     0.00
      1  1282.40 74.73
      2  1282.40 74.73
      3  1282.40 74.73
      4  1282.40 74.73
      5  1282.40 74.73
      6  1282.40 74.73
      7  1282.40 74.73
      8  1282.40 74.73
      9  1282.40 74.73
```

```
    10  1282.40 74.73
    11  1282.40 74.73
    12  1282.40 74.73
    13  1282.40 74.73
    14  1282.40 74.73
    15  1282.40 74.73
18     0.00
     1  1430.60 73.52
     2  1430.60 73.52
     3  1430.60 73.52
     4  1430.60 73.52
     5  1430.60 73.52
     6  1430.60 73.52
     7  1430.60 73.52
     8  1430.60 73.52
     9  1430.60 73.52
    10  1430.60 73.52
    11  1430.60 73.52
    12  1430.60 73.52
    13  1430.60 73.52
    14  1430.60 73.52
    15  1430.60 73.52
19     0.00
     1   995.97 72.57
     2   995.97 72.57
     3   995.97 72.57
     4   995.97 72.57
     5   995.97 72.57
     6   995.97 72.57
     7   995.97 72.57
     8   995.97 72.57
     9   995.97 72.57
    10   995.97 72.57
    11   995.97 72.57
    12   995.97 72.57
    13   995.97 72.57
    14   995.97 72.57
    15   995.97 72.57
20     0.00
     1   751.53 72.73
     2   751.53 72.73
     3   751.53 72.73
     4   751.53 72.73
     5   751.53 72.73
     6   751.53 72.73
     7   751.53 72.73
     8   751.53 72.73
     9   751.53 72.73
    10   751.53 72.73
    11   751.53 72.73
    12   751.53 72.73
    13   751.53 72.73
    14   751.53 72.73
    15   751.53 72.73
```

```
21     0.00
     1   559.33 71.91
     2   559.33 71.91
     3   559.33 71.91
     4   559.33 71.91
     5   559.33 71.91
     6   559.33 71.91
     7   559.33 71.91
     8   559.33 71.91
     9   559.33 71.91
    10   559.33 71.91
    11   559.33 71.91
    12   559.33 71.91
    13   559.33 71.91
    14   559.33 71.91
    15   559.33 71.91
22     0.00
     1   560.37 71.74
     2   560.37 71.74
     3   560.37 71.74
     4   560.37 71.74
     5   560.37 71.74
     6   560.37 71.74
     7   560.37 71.74
     8   560.37 71.74
     9   560.37 71.74
    10   560.37 71.74
    11   560.37 71.74
    12   560.37 71.74
    13   560.37 71.74
    14   560.37 71.74
    15   560.37 71.74
23     0.00
     1   421.29 72.22
     2   421.29 72.22
     3   421.29 72.22
     4   421.29 72.22
     5   421.29 72.22
     6   421.29 72.22
     7   421.29 72.22
     8   421.29 72.22
     9   421.29 72.22
    10   421.29 72.22
    11   421.29 72.22
    12   421.29 72.22
    13   421.29 72.22
    14   421.29 72.22
    15   421.29 72.22
24     0.00
     1   326.36 72.95
     2   326.36 72.95
     3   326.36 72.95
     4   326.36 72.95
     5   326.36 72.95
```

```
  6   326.36 72.95
  7   326.36 72.95
  8   326.36 72.95
  9   326.36 72.95
 10   326.36 72.95
 11   326.36 72.95
 12   326.36 72.95
 13   326.36 72.95
 14   326.36 72.95
 15   326.36 72.95
```

```
'WB24fromNB680, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 15
    1 1
'Link_19                                ' 'AG' 581368.69 4194723.99 581310.07 4194719.76
-1.77   13.90
    2 1
'Link_20                                ' 'AG' 581310.07 4194719.76 581291.04 4194719.27
-0.55   13.90
    3 1
'Link_21                                ' 'AG' 581291.04 4194719.27 581272.36 4194718.42
-0.21   13.90
    4 1
'Link_22                                ' 'AG' 581272.36 4194718.42 581250.41 4194718.83
0.74   13.90
    5 1
'Link_23                                ' 'AG' 581250.41 4194718.83 581231.35 4194719.14
2.36   13.90
    6 1
'Link_24                                ' 'AG' 581231.35 4194719.14 581216.07 4194720.63
3.36   13.90
    7 1
'Link_25                                ' 'AG' 581216.07 4194720.63 581194.64 4194722.45
3.94   13.90
    8 1
'Link_26                                ' 'AG' 581194.64 4194722.45 581175.98 4194725.37
4.83   13.90
    9 1
'Link_27                                ' 'AG' 581175.98 4194725.37 581155.29 4194729.42
6.67   13.90
    10 1
'Link_28                                ' 'AG' 581155.29 4194729.42 581135.61 4194733.90
8.52   13.90
    11 1
'Link_29                                ' 'AG' 581135.61 4194733.90 581115.68 4194738.54
9.21   13.90
    12 1
'Link_30                                ' 'AG' 581115.68 4194738.54 581095.68 4194743.14
9.45   13.90
    13 1
'Link_31                                ' 'AG' 581095.68 4194743.14 581061.49 4194754.42
10.00   13.90
    14 1
'Link_32                                ' 'AG' 581061.49 4194754.42 581026.76 4194764.48
```

```
10.00   13.90
    15 1
'Link_33                                ' 'AG' 581026.76 4194764.48 580987.60 4194776.70
10.00   13.90
 1     0.00
      1   198.93 20.16
      2   198.93 20.16
      3   198.93 20.16
      4   198.93 20.16
      5   198.93 20.16
      6   198.93 20.16
      7   198.93 20.16
      8   198.93 20.16
      9   198.93 20.16
     10   198.93 20.16
     11   198.93 20.16
     12   198.93 20.16
     13   198.93 20.16
     14   198.93 20.16
     15   198.93 20.16
 2     0.00
      1    74.09 23.07
      2    74.09 23.07
      3    74.09 23.07
      4    74.09 23.07
      5    74.09 23.07
      6    74.09 23.07
      7    74.09 23.07
      8    74.09 23.07
      9    74.09 23.07
     10    74.09 23.07
     11    74.09 23.07
     12    74.09 23.07
     13    74.09 23.07
     14    74.09 23.07
     15    74.09 23.07
 3     0.00
      1    77.95 23.30
      2    77.95 23.30
      3    77.95 23.30
      4    77.95 23.30
      5    77.95 23.30
      6    77.95 23.30
      7    77.95 23.30
      8    77.95 23.30
      9    77.95 23.30
     10    77.95 23.30
     11    77.95 23.30
     12    77.95 23.30
     13    77.95 23.30
     14    77.95 23.30
     15    77.95 23.30
 4     0.00
      1    41.68 25.05
```

```
      2    41.68 25.05
      3    41.68 25.05
      4    41.68 25.05
      5    41.68 25.05
      6    41.68 25.05
      7    41.68 25.05
      8    41.68 25.05
      9    41.68 25.05
     10    41.68 25.05
     11    41.68 25.05
     12    41.68 25.05
     13    41.68 25.05
     14    41.68 25.05
     15    41.68 25.05
5     0.00
      1    87.55 20.91
      2    87.55 20.91
      3    87.55 20.91
      4    87.55 20.91
      5    87.55 20.91
      6    87.55 20.91
      7    87.55 20.91
      8    87.55 20.91
      9    87.55 20.91
     10    87.55 20.91
     11    87.55 20.91
     12    87.55 20.91
     13    87.55 20.91
     14    87.55 20.91
     15    87.55 20.91
6     0.00
      1   152.63 20.02
      2   152.63 20.02
      3   152.63 20.02
      4   152.63 20.02
      5   152.63 20.02
      6   152.63 20.02
      7   152.63 20.02
      8   152.63 20.02
      9   152.63 20.02
     10   152.63 20.02
     11   152.63 20.02
     12   152.63 20.02
     13   152.63 20.02
     14   152.63 20.02
     15   152.63 20.02
7     0.00
      1   657.24 18.76
      2   657.24 18.76
      3   657.24 18.76
      4   657.24 18.76
      5   657.24 18.76
      6   657.24 18.76
      7   657.24 18.76
```

```
      8   657.24 18.76
      9   657.24 18.76
     10   657.24 18.76
     11   657.24 18.76
     12   657.24 18.76
     13   657.24 18.76
     14   657.24 18.76
     15   657.24 18.76
 8     0.00
      1  1370.99 18.29
      2  1370.99 18.29
      3  1370.99 18.29
      4  1370.99 18.29
      5  1370.99 18.29
      6  1370.99 18.29
      7  1370.99 18.29
      8  1370.99 18.29
      9  1370.99 18.29
     10  1370.99 18.29
     11  1370.99 18.29
     12  1370.99 18.29
     13  1370.99 18.29
     14  1370.99 18.29
     15  1370.99 18.29
 9     0.00
      1  1249.84 18.50
      2  1249.84 18.50
      3  1249.84 18.50
      4  1249.84 18.50
      5  1249.84 18.50
      6  1249.84 18.50
      7  1249.84 18.50
      8  1249.84 18.50
      9  1249.84 18.50
     10  1249.84 18.50
     11  1249.84 18.50
     12  1249.84 18.50
     13  1249.84 18.50
     14  1249.84 18.50
     15  1249.84 18.50
10     0.00
      1   762.93 19.04
      2   762.93 19.04
      3   762.93 19.04
      4   762.93 19.04
      5   762.93 19.04
      6   762.93 19.04
      7   762.93 19.04
      8   762.93 19.04
      9   762.93 19.04
     10   762.93 19.04
     11   762.93 19.04
     12   762.93 19.04
     13   762.93 19.04
```

```
    14   762.93 19.04
    15   762.93 19.04
11     0.00
     1   818.23 18.88
     2   818.23 18.88
     3   818.23 18.88
     4   818.23 18.88
     5   818.23 18.88
     6   818.23 18.88
     7   818.23 18.88
     8   818.23 18.88
     9   818.23 18.88
    10   818.23 18.88
    11   818.23 18.88
    12   818.23 18.88
    13   818.23 18.88
    14   818.23 18.88
    15   818.23 18.88
12     0.00
     1  1031.38 18.75
     2  1031.38 18.75
     3  1031.38 18.75
     4  1031.38 18.75
     5  1031.38 18.75
     6  1031.38 18.75
     7  1031.38 18.75
     8  1031.38 18.75
     9  1031.38 18.75
    10  1031.38 18.75
    11  1031.38 18.75
    12  1031.38 18.75
    13  1031.38 18.75
    14  1031.38 18.75
    15  1031.38 18.75
13     0.00
     1  1080.22 18.67
     2  1080.22 18.67
     3  1080.22 18.67
     4  1080.22 18.67
     5  1080.22 18.67
     6  1080.22 18.67
     7  1080.22 18.67
     8  1080.22 18.67
     9  1080.22 18.67
    10  1080.22 18.67
    11  1080.22 18.67
    12  1080.22 18.67
    13  1080.22 18.67
    14  1080.22 18.67
    15  1080.22 18.67
14     0.00
     1  1060.85 18.69
     2  1060.85 18.69
     3  1060.85 18.69
```

```
     4  1060.85 18.69
     5  1060.85 18.69
     6  1060.85 18.69
     7  1060.85 18.69
     8  1060.85 18.69
     9  1060.85 18.69
    10  1060.85 18.69
    11  1060.85 18.69
    12  1060.85 18.69
    13  1060.85 18.69
    14  1060.85 18.69
    15  1060.85 18.69
15     0.00
     1  1234.23 18.51
     2  1234.23 18.51
     3  1234.23 18.51
     4  1234.23 18.51
     5  1234.23 18.51
     6  1234.23 18.51
     7  1234.23 18.51
     8  1234.23 18.51
     9  1234.23 18.51
    10  1234.23 18.51
    11  1234.23 18.51
    12  1234.23 18.51
    13  1234.23 18.51
    14  1234.23 18.51
    15  1234.23 18.51
16     0.00
     1  1261.46 18.37
     2  1261.46 18.37
     3  1261.46 18.37
     4  1261.46 18.37
     5  1261.46 18.37
     6  1261.46 18.37
     7  1261.46 18.37
     8  1261.46 18.37
     9  1261.46 18.37
    10  1261.46 18.37
    11  1261.46 18.37
    12  1261.46 18.37
    13  1261.46 18.37
    14  1261.46 18.37
    15  1261.46 18.37
17     0.00
     1  1303.98 18.48
     2  1303.98 18.48
     3  1303.98 18.48
     4  1303.98 18.48
     5  1303.98 18.48
     6  1303.98 18.48
     7  1303.98 18.48
     8  1303.98 18.48
     9  1303.98 18.48
```

```
    10  1303.98 18.48
    11  1303.98 18.48
    12  1303.98 18.48
    13  1303.98 18.48
    14  1303.98 18.48
    15  1303.98 18.48
18     0.00
     1  1449.58 18.32
     2  1449.58 18.32
     3  1449.58 18.32
     4  1449.58 18.32
     5  1449.58 18.32
     6  1449.58 18.32
     7  1449.58 18.32
     8  1449.58 18.32
     9  1449.58 18.32
    10  1449.58 18.32
    11  1449.58 18.32
    12  1449.58 18.32
    13  1449.58 18.32
    14  1449.58 18.32
    15  1449.58 18.32
19     0.00
     1  1011.13 18.39
     2  1011.13 18.39
     3  1011.13 18.39
     4  1011.13 18.39
     5  1011.13 18.39
     6  1011.13 18.39
     7  1011.13 18.39
     8  1011.13 18.39
     9  1011.13 18.39
    10  1011.13 18.39
    11  1011.13 18.39
    12  1011.13 18.39
    13  1011.13 18.39
    14  1011.13 18.39
    15  1011.13 18.39
20     0.00
     1   758.57 18.26
     2   758.57 18.26
     3   758.57 18.26
     4   758.57 18.26
     5   758.57 18.26
     6   758.57 18.26
     7   758.57 18.26
     8   758.57 18.26
     9   758.57 18.26
    10   758.57 18.26
    11   758.57 18.26
    12   758.57 18.26
    13   758.57 18.26
    14   758.57 18.26
    15   758.57 18.26
```

```
21     0.00
     1   574.38 18.64
     2   574.38 18.64
     3   574.38 18.64
     4   574.38 18.64
     5   574.38 18.64
     6   574.38 18.64
     7   574.38 18.64
     8   574.38 18.64
     9   574.38 18.64
    10   574.38 18.64
    11   574.38 18.64
    12   574.38 18.64
    13   574.38 18.64
    14   574.38 18.64
    15   574.38 18.64
22     0.00
     1   576.49 18.78
     2   576.49 18.78
     3   576.49 18.78
     4   576.49 18.78
     5   576.49 18.78
     6   576.49 18.78
     7   576.49 18.78
     8   576.49 18.78
     9   576.49 18.78
    10   576.49 18.78
    11   576.49 18.78
    12   576.49 18.78
    13   576.49 18.78
    14   576.49 18.78
    15   576.49 18.78
23     0.00
     1   433.30 18.80
     2   433.30 18.80
     3   433.30 18.80
     4   433.30 18.80
     5   433.30 18.80
     6   433.30 18.80
     7   433.30 18.80
     8   433.30 18.80
     9   433.30 18.80
    10   433.30 18.80
    11   433.30 18.80
    12   433.30 18.80
    13   433.30 18.80
    14   433.30 18.80
    15   433.30 18.80
24     0.00
     1   332.36 18.51
     2   332.36 18.51
     3   332.36 18.51
     4   332.36 18.51
     5   332.36 18.51
```

```
  6   332.36 18.51
  7   332.36 18.51
  8   332.36 18.51
  9   332.36 18.51
 10   332.36 18.51
 11   332.36 18.51
 12   332.36 18.51
 13   332.36 18.51
 14   332.36 18.51
 15   332.36 18.51
```

```
'WB24fromNB680, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 15
    1 1
'Link_19                                ' 'AG' 581368.69 4194723.99 581310.07 4194719.76
-1.77   13.90
    2 1
'Link_20                                ' 'AG' 581310.07 4194719.76 581291.04 4194719.27
-0.55   13.90
    3 1
'Link_21                                ' 'AG' 581291.04 4194719.27 581272.36 4194718.42
-0.21   13.90
    4 1
'Link_22                                ' 'AG' 581272.36 4194718.42 581250.41 4194718.83
0.74   13.90
    5 1
'Link_23                                ' 'AG' 581250.41 4194718.83 581231.35 4194719.14
2.36   13.90
    6 1
'Link_24                                ' 'AG' 581231.35 4194719.14 581216.07 4194720.63
3.36   13.90
    7 1
'Link_25                                ' 'AG' 581216.07 4194720.63 581194.64 4194722.45
3.94   13.90
    8 1
'Link_26                                ' 'AG' 581194.64 4194722.45 581175.98 4194725.37
4.83   13.90
    9 1
'Link_27                                ' 'AG' 581175.98 4194725.37 581155.29 4194729.42
6.67   13.90
    10 1
'Link_28                                ' 'AG' 581155.29 4194729.42 581135.61 4194733.90
8.52   13.90
    11 1
'Link_29                                ' 'AG' 581135.61 4194733.90 581115.68 4194738.54
9.21   13.90
    12 1
'Link_30                                ' 'AG' 581115.68 4194738.54 581095.68 4194743.14
9.45   13.90
    13 1
'Link_31                                ' 'AG' 581095.68 4194743.14 581061.49 4194754.42
10.00   13.90
    14 1
'Link_32                                ' 'AG' 581061.49 4194754.42 581026.76 4194764.48
```

```
10.00   13.90
    15 1
'Link_33                                  ' 'AG' 581026.76 4194764.48 580987.60 4194776.70
10.00   13.90
 1     0.00
      1   198.93 7.66
      2   198.93 7.66
      3   198.93 7.66
      4   198.93 7.66
      5   198.93 7.66
      6   198.93 7.66
      7   198.93 7.66
      8   198.93 7.66
      9   198.93 7.66
     10   198.93 7.66
     11   198.93 7.66
     12   198.93 7.66
     13   198.93 7.66
     14   198.93 7.66
     15   198.93 7.66
 2     0.00
      1    74.09 13.49
      2    74.09 13.49
      3    74.09 13.49
      4    74.09 13.49
      5    74.09 13.49
      6    74.09 13.49
      7    74.09 13.49
      8    74.09 13.49
      9    74.09 13.49
     10    74.09 13.49
     11    74.09 13.49
     12    74.09 13.49
     13    74.09 13.49
     14    74.09 13.49
     15    74.09 13.49
 3     0.00
      1    77.95 15.54
      2    77.95 15.54
      3    77.95 15.54
      4    77.95 15.54
      5    77.95 15.54
      6    77.95 15.54
      7    77.95 15.54
      8    77.95 15.54
      9    77.95 15.54
     10    77.95 15.54
     11    77.95 15.54
     12    77.95 15.54
     13    77.95 15.54
     14    77.95 15.54
     15    77.95 15.54
 4     0.00
      1    41.68 26.12
```

```
      2    41.68 26.12
      3    41.68 26.12
      4    41.68 26.12
      5    41.68 26.12
      6    41.68 26.12
      7    41.68 26.12
      8    41.68 26.12
      9    41.68 26.12
     10    41.68 26.12
     11    41.68 26.12
     12    41.68 26.12
     13    41.68 26.12
     14    41.68 26.12
     15    41.68 26.12
5     0.00
      1    87.55 10.09
      2    87.55 10.09
      3    87.55 10.09
      4    87.55 10.09
      5    87.55 10.09
      6    87.55 10.09
      7    87.55 10.09
      8    87.55 10.09
      9    87.55 10.09
     10    87.55 10.09
     11    87.55 10.09
     12    87.55 10.09
     13    87.55 10.09
     14    87.55 10.09
     15    87.55 10.09
6     0.00
      1   152.63 7.97
      2   152.63 7.97
      3   152.63 7.97
      4   152.63 7.97
      5   152.63 7.97
      6   152.63 7.97
      7   152.63 7.97
      8   152.63 7.97
      9   152.63 7.97
     10   152.63 7.97
     11   152.63 7.97
     12   152.63 7.97
     13   152.63 7.97
     14   152.63 7.97
     15   152.63 7.97
7     0.00
      1   657.24 4.19
      2   657.24 4.19
      3   657.24 4.19
      4   657.24 4.19
      5   657.24 4.19
      6   657.24 4.19
      7   657.24 4.19
```

```
      8   657.24 4.19
      9   657.24 4.19
     10   657.24 4.19
     11   657.24 4.19
     12   657.24 4.19
     13   657.24 4.19
     14   657.24 4.19
     15   657.24 4.19
 8     0.00
      1  1370.99 2.83
      2  1370.99 2.83
      3  1370.99 2.83
      4  1370.99 2.83
      5  1370.99 2.83
      6  1370.99 2.83
      7  1370.99 2.83
      8  1370.99 2.83
      9  1370.99 2.83
     10  1370.99 2.83
     11  1370.99 2.83
     12  1370.99 2.83
     13  1370.99 2.83
     14  1370.99 2.83
     15  1370.99 2.83
 9     0.00
      1  1249.84 3.27
      2  1249.84 3.27
      3  1249.84 3.27
      4  1249.84 3.27
      5  1249.84 3.27
      6  1249.84 3.27
      7  1249.84 3.27
      8  1249.84 3.27
      9  1249.84 3.27
     10  1249.84 3.27
     11  1249.84 3.27
     12  1249.84 3.27
     13  1249.84 3.27
     14  1249.84 3.27
     15  1249.84 3.27
 10     0.00
      1   762.93 4.52
      2   762.93 4.52
      3   762.93 4.52
      4   762.93 4.52
      5   762.93 4.52
      6   762.93 4.52
      7   762.93 4.52
      8   762.93 4.52
      9   762.93 4.52
     10   762.93 4.52
     11   762.93 4.52
     12   762.93 4.52
     13   762.93 4.52
```

```
    14   762.93 4.52
    15   762.93 4.52
11     0.00
     1   818.23 4.13
     2   818.23 4.13
     3   818.23 4.13
     4   818.23 4.13
     5   818.23 4.13
     6   818.23 4.13
     7   818.23 4.13
     8   818.23 4.13
     9   818.23 4.13
    10   818.23 4.13
    11   818.23 4.13
    12   818.23 4.13
    13   818.23 4.13
    14   818.23 4.13
    15   818.23 4.13
12     0.00
     1  1031.38 3.79
     2  1031.38 3.79
     3  1031.38 3.79
     4  1031.38 3.79
     5  1031.38 3.79
     6  1031.38 3.79
     7  1031.38 3.79
     8  1031.38 3.79
     9  1031.38 3.79
    10  1031.38 3.79
    11  1031.38 3.79
    12  1031.38 3.79
    13  1031.38 3.79
    14  1031.38 3.79
    15  1031.38 3.79
13     0.00
     1  1080.22 3.52
     2  1080.22 3.52
     3  1080.22 3.52
     4  1080.22 3.52
     5  1080.22 3.52
     6  1080.22 3.52
     7  1080.22 3.52
     8  1080.22 3.52
     9  1080.22 3.52
    10  1080.22 3.52
    11  1080.22 3.52
    12  1080.22 3.52
    13  1080.22 3.52
    14  1080.22 3.52
    15  1080.22 3.52
14     0.00
     1  1060.85 3.57
     2  1060.85 3.57
     3  1060.85 3.57
```

```
     4  1060.85 3.57
     5  1060.85 3.57
     6  1060.85 3.57
     7  1060.85 3.57
     8  1060.85 3.57
     9  1060.85 3.57
    10  1060.85 3.57
    11  1060.85 3.57
    12  1060.85 3.57
    13  1060.85 3.57
    14  1060.85 3.57
    15  1060.85 3.57
15     0.00
     1  1234.23 3.09
     2  1234.23 3.09
     3  1234.23 3.09
     4  1234.23 3.09
     5  1234.23 3.09
     6  1234.23 3.09
     7  1234.23 3.09
     8  1234.23 3.09
     9  1234.23 3.09
    10  1234.23 3.09
    11  1234.23 3.09
    12  1234.23 3.09
    13  1234.23 3.09
    14  1234.23 3.09
    15  1234.23 3.09
16     0.00
     1  1261.46 2.75
     2  1261.46 2.75
     3  1261.46 2.75
     4  1261.46 2.75
     5  1261.46 2.75
     6  1261.46 2.75
     7  1261.46 2.75
     8  1261.46 2.75
     9  1261.46 2.75
    10  1261.46 2.75
    11  1261.46 2.75
    12  1261.46 2.75
    13  1261.46 2.75
    14  1261.46 2.75
    15  1261.46 2.75
17     0.00
     1  1303.98 3.03
     2  1303.98 3.03
     3  1303.98 3.03
     4  1303.98 3.03
     5  1303.98 3.03
     6  1303.98 3.03
     7  1303.98 3.03
     8  1303.98 3.03
     9  1303.98 3.03
```

```
    10  1303.98 3.03
    11  1303.98 3.03
    12  1303.98 3.03
    13  1303.98 3.03
    14  1303.98 3.03
    15  1303.98 3.03
18     0.00
     1  1449.58 2.62
     2  1449.58 2.62
     3  1449.58 2.62
     4  1449.58 2.62
     5  1449.58 2.62
     6  1449.58 2.62
     7  1449.58 2.62
     8  1449.58 2.62
     9  1449.58 2.62
    10  1449.58 2.62
    11  1449.58 2.62
    12  1449.58 2.62
    13  1449.58 2.62
    14  1449.58 2.62
    15  1449.58 2.62
19     0.00
     1  1011.13 2.77
     2  1011.13 2.77
     3  1011.13 2.77
     4  1011.13 2.77
     5  1011.13 2.77
     6  1011.13 2.77
     7  1011.13 2.77
     8  1011.13 2.77
     9  1011.13 2.77
    10  1011.13 2.77
    11  1011.13 2.77
    12  1011.13 2.77
    13  1011.13 2.77
    14  1011.13 2.77
    15  1011.13 2.77
20     0.00
     1   758.57 2.45
     2   758.57 2.45
     3   758.57 2.45
     4   758.57 2.45
     5   758.57 2.45
     6   758.57 2.45
     7   758.57 2.45
     8   758.57 2.45
     9   758.57 2.45
    10   758.57 2.45
    11   758.57 2.45
    12   758.57 2.45
    13   758.57 2.45
    14   758.57 2.45
    15   758.57 2.45
```

```
21     0.00
     1   574.38 3.53
     2   574.38 3.53
     3   574.38 3.53
     4   574.38 3.53
     5   574.38 3.53
     6   574.38 3.53
     7   574.38 3.53
     8   574.38 3.53
     9   574.38 3.53
    10   574.38 3.53
    11   574.38 3.53
    12   574.38 3.53
    13   574.38 3.53
    14   574.38 3.53
    15   574.38 3.53
22     0.00
     1   576.49 3.81
     2   576.49 3.81
     3   576.49 3.81
     4   576.49 3.81
     5   576.49 3.81
     6   576.49 3.81
     7   576.49 3.81
     8   576.49 3.81
     9   576.49 3.81
    10   576.49 3.81
    11   576.49 3.81
    12   576.49 3.81
    13   576.49 3.81
    14   576.49 3.81
    15   576.49 3.81
23     0.00
     1   433.30 3.64
     2   433.30 3.64
     3   433.30 3.64
     4   433.30 3.64
     5   433.30 3.64
     6   433.30 3.64
     7   433.30 3.64
     8   433.30 3.64
     9   433.30 3.64
    10   433.30 3.64
    11   433.30 3.64
    12   433.30 3.64
    13   433.30 3.64
    14   433.30 3.64
    15   433.30 3.64
24     0.00
     1   332.36 3.02
     2   332.36 3.02
     3   332.36 3.02
     4   332.36 3.02
     5   332.36 3.02
```

```
  6   332.36 3.02
  7   332.36 3.02
  8   332.36 3.02
  9   332.36 3.02
 10   332.36 3.02
 11   332.36 3.02
 12   332.36 3.02
 13   332.36 3.02
 14   332.36 3.02
 15   332.36 3.02
```

```
'WB24fromNB680, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 15
    1 1
'Link_19                                ' 'AG' 581368.69 4194723.99 581310.07 4194719.76
-1.77   13.90
    2 1
'Link_20                                ' 'AG' 581310.07 4194719.76 581291.04 4194719.27
-0.55   13.90
    3 1
'Link_21                                ' 'AG' 581291.04 4194719.27 581272.36 4194718.42
-0.21   13.90
    4 1
'Link_22                                ' 'AG' 581272.36 4194718.42 581250.41 4194718.83
0.74   13.90
    5 1
'Link_23                                ' 'AG' 581250.41 4194718.83 581231.35 4194719.14
2.36   13.90
    6 1
'Link_24                                ' 'AG' 581231.35 4194719.14 581216.07 4194720.63
3.36   13.90
    7 1
'Link_25                                ' 'AG' 581216.07 4194720.63 581194.64 4194722.45
3.94   13.90
    8 1
'Link_26                                ' 'AG' 581194.64 4194722.45 581175.98 4194725.37
4.83   13.90
    9 1
'Link_27                                ' 'AG' 581175.98 4194725.37 581155.29 4194729.42
6.67   13.90
    10 1
'Link_28                                ' 'AG' 581155.29 4194729.42 581135.61 4194733.90
8.52   13.90
    11 1
'Link_29                                ' 'AG' 581135.61 4194733.90 581115.68 4194738.54
9.21   13.90
    12 1
'Link_30                                ' 'AG' 581115.68 4194738.54 581095.68 4194743.14
9.45   13.90
    13 1
'Link_31                                ' 'AG' 581095.68 4194743.14 581061.49 4194754.42
10.00   13.90
    14 1
'Link_32                                ' 'AG' 581061.49 4194754.42 581026.76 4194764.48
```

```
10.00   13.90
    15 1
'Link_33                                  ' 'AG' 581026.76 4194764.48 580987.60 4194776.70
10.00   13.90
 1     0.00
      1    18.64 70.39
      2    18.64 70.39
      3    18.64 70.39
      4    18.64 70.39
      5    18.64 70.39
      6    18.64 70.39
      7    18.64 70.39
      8    18.64 70.39
      9    18.64 70.39
     10    18.64 70.39
     11    18.64 70.39
     12    18.64 70.39
     13    18.64 70.39
     14    18.64 70.39
     15    18.64 70.39
 2     0.00
      1    15.67 62.19
      2    15.67 62.19
      3    15.67 62.19
      4    15.67 62.19
      5    15.67 62.19
      6    15.67 62.19
      7    15.67 62.19
      8    15.67 62.19
      9    15.67 62.19
     10    15.67 62.19
     11    15.67 62.19
     12    15.67 62.19
     13    15.67 62.19
     14    15.67 62.19
     15    15.67 62.19
 3     0.00
      1    20.54 58.32
      2    20.54 58.32
      3    20.54 58.32
      4    20.54 58.32
      5    20.54 58.32
      6    20.54 58.32
      7    20.54 58.32
      8    20.54 58.32
      9    20.54 58.32
     10    20.54 58.32
     11    20.54 58.32
     12    20.54 58.32
     13    20.54 58.32
     14    20.54 58.32
     15    20.54 58.32
 4     0.00
      1    14.85 76.15
```

```
      2    14.85 76.15
      3    14.85 76.15
      4    14.85 76.15
      5    14.85 76.15
      6    14.85 76.15
      7    14.85 76.15
      8    14.85 76.15
      9    14.85 76.15
     10    14.85 76.15
     11    14.85 76.15
     12    14.85 76.15
     13    14.85 76.15
     14    14.85 76.15
     15    14.85 76.15
5     0.00
      1    11.65 69.86
      2    11.65 69.86
      3    11.65 69.86
      4    11.65 69.86
      5    11.65 69.86
      6    11.65 69.86
      7    11.65 69.86
      8    11.65 69.86
      9    11.65 69.86
     10    11.65 69.86
     11    11.65 69.86
     12    11.65 69.86
     13    11.65 69.86
     14    11.65 69.86
     15    11.65 69.86
6     0.00
      1    12.49 84.31
      2    12.49 84.31
      3    12.49 84.31
      4    12.49 84.31
      5    12.49 84.31
      6    12.49 84.31
      7    12.49 84.31
      8    12.49 84.31
      9    12.49 84.31
     10    12.49 84.31
     11    12.49 84.31
     12    12.49 84.31
     13    12.49 84.31
     14    12.49 84.31
     15    12.49 84.31
7     0.00
      1    21.05 84.70
      2    21.05 84.70
      3    21.05 84.70
      4    21.05 84.70
      5    21.05 84.70
      6    21.05 84.70
      7    21.05 84.70
```

```
      8    21.05 84.70
      9    21.05 84.70
     10    21.05 84.70
     11    21.05 84.70
     12    21.05 84.70
     13    21.05 84.70
     14    21.05 84.70
     15    21.05 84.70
 8     0.00
      1    20.55 79.73
      2    20.55 79.73
      3    20.55 79.73
      4    20.55 79.73
      5    20.55 79.73
      6    20.55 79.73
      7    20.55 79.73
      8    20.55 79.73
      9    20.55 79.73
     10    20.55 79.73
     11    20.55 79.73
     12    20.55 79.73
     13    20.55 79.73
     14    20.55 79.73
     15    20.55 79.73
 9     0.00
      1    27.66 75.90
      2    27.66 75.90
      3    27.66 75.90
      4    27.66 75.90
      5    27.66 75.90
      6    27.66 75.90
      7    27.66 75.90
      8    27.66 75.90
      9    27.66 75.90
     10    27.66 75.90
     11    27.66 75.90
     12    27.66 75.90
     13    27.66 75.90
     14    27.66 75.90
     15    27.66 75.90
 10     0.00
      1    29.62 79.07
      2    29.62 79.07
      3    29.62 79.07
      4    29.62 79.07
      5    29.62 79.07
      6    29.62 79.07
      7    29.62 79.07
      8    29.62 79.07
      9    29.62 79.07
     10    29.62 79.07
     11    29.62 79.07
     12    29.62 79.07
     13    29.62 79.07
```

```
    14    29.62 79.07
    15    29.62 79.07
11     0.00
     1    27.52 78.46
     2    27.52 78.46
     3    27.52 78.46
     4    27.52 78.46
     5    27.52 78.46
     6    27.52 78.46
     7    27.52 78.46
     8    27.52 78.46
     9    27.52 78.46
    10    27.52 78.46
    11    27.52 78.46
    12    27.52 78.46
    13    27.52 78.46
    14    27.52 78.46
    15    27.52 78.46
12     0.00
     1    29.36 79.38
     2    29.36 79.38
     3    29.36 79.38
     4    29.36 79.38
     5    29.36 79.38
     6    29.36 79.38
     7    29.36 79.38
     8    29.36 79.38
     9    29.36 79.38
    10    29.36 79.38
    11    29.36 79.38
    12    29.36 79.38
    13    29.36 79.38
    14    29.36 79.38
    15    29.36 79.38
13     0.00
     1    25.66 82.55
     2    25.66 82.55
     3    25.66 82.55
     4    25.66 82.55
     5    25.66 82.55
     6    25.66 82.55
     7    25.66 82.55
     8    25.66 82.55
     9    25.66 82.55
    10    25.66 82.55
    11    25.66 82.55
    12    25.66 82.55
    13    25.66 82.55
    14    25.66 82.55
    15    25.66 82.55
14     0.00
     1    26.16 81.56
     2    26.16 81.56
     3    26.16 81.56
```

```
     4    26.16 81.56
     5    26.16 81.56
     6    26.16 81.56
     7    26.16 81.56
     8    26.16 81.56
     9    26.16 81.56
    10    26.16 81.56
    11    26.16 81.56
    12    26.16 81.56
    13    26.16 81.56
    14    26.16 81.56
    15    26.16 81.56
15     0.00
     1    21.56 84.91
     2    21.56 84.91
     3    21.56 84.91
     4    21.56 84.91
     5    21.56 84.91
     6    21.56 84.91
     7    21.56 84.91
     8    21.56 84.91
     9    21.56 84.91
    10    21.56 84.91
    11    21.56 84.91
    12    21.56 84.91
    13    21.56 84.91
    14    21.56 84.91
    15    21.56 84.91
16     0.00
     1    16.75 82.97
     2    16.75 82.97
     3    16.75 82.97
     4    16.75 82.97
     5    16.75 82.97
     6    16.75 82.97
     7    16.75 82.97
     8    16.75 82.97
     9    16.75 82.97
    10    16.75 82.97
    11    16.75 82.97
    12    16.75 82.97
    13    16.75 82.97
    14    16.75 82.97
    15    16.75 82.97
17     0.00
     1    21.58 85.04
     2    21.58 85.04
     3    21.58 85.04
     4    21.58 85.04
     5    21.58 85.04
     6    21.58 85.04
     7    21.58 85.04
     8    21.58 85.04
     9    21.58 85.04
```

```
    10    21.58 85.04
    11    21.58 85.04
    12    21.58 85.04
    13    21.58 85.04
    14    21.58 85.04
    15    21.58 85.04
18     0.00
     1    18.98 73.36
     2    18.98 73.36
     3    18.98 73.36
     4    18.98 73.36
     5    18.98 73.36
     6    18.98 73.36
     7    18.98 73.36
     8    18.98 73.36
     9    18.98 73.36
    10    18.98 73.36
    11    18.98 73.36
    12    18.98 73.36
    13    18.98 73.36
    14    18.98 73.36
    15    18.98 73.36
19     0.00
     1    15.16 75.88
     2    15.16 75.88
     3    15.16 75.88
     4    15.16 75.88
     5    15.16 75.88
     6    15.16 75.88
     7    15.16 75.88
     8    15.16 75.88
     9    15.16 75.88
    10    15.16 75.88
    11    15.16 75.88
    12    15.16 75.88
    13    15.16 75.88
    14    15.16 75.88
    15    15.16 75.88
20     0.00
     1     7.04 83.24
     2     7.04 83.24
     3     7.04 83.24
     4     7.04 83.24
     5     7.04 83.24
     6     7.04 83.24
     7     7.04 83.24
     8     7.04 83.24
     9     7.04 83.24
    10     7.04 83.24
    11     7.04 83.24
    12     7.04 83.24
    13     7.04 83.24
    14     7.04 83.24
    15     7.04 83.24
```

```
21     0.00
     1    15.05 75.67
     2    15.05 75.67
     3    15.05 75.67
     4    15.05 75.67
     5    15.05 75.67
     6    15.05 75.67
     7    15.05 75.67
     8    15.05 75.67
     9    15.05 75.67
    10    15.05 75.67
    11    15.05 75.67
    12    15.05 75.67
    13    15.05 75.67
    14    15.05 75.67
    15    15.05 75.67
22     0.00
     1    16.13 81.67
     2    16.13 81.67
     3    16.13 81.67
     4    16.13 81.67
     5    16.13 81.67
     6    16.13 81.67
     7    16.13 81.67
     8    16.13 81.67
     9    16.13 81.67
    10    16.13 81.67
    11    16.13 81.67
    12    16.13 81.67
    13    16.13 81.67
    14    16.13 81.67
    15    16.13 81.67
23     0.00
     1    12.00 75.82
     2    12.00 75.82
     3    12.00 75.82
     4    12.00 75.82
     5    12.00 75.82
     6    12.00 75.82
     7    12.00 75.82
     8    12.00 75.82
     9    12.00 75.82
    10    12.00 75.82
    11    12.00 75.82
    12    12.00 75.82
    13    12.00 75.82
    14    12.00 75.82
    15    12.00 75.82
24     0.00
     1     6.00 77.61
     2     6.00 77.61
     3     6.00 77.61
     4     6.00 77.61
     5     6.00 77.61
```

```
  6     6.00 77.61
  7     6.00 77.61
  8     6.00 77.61
  9     6.00 77.61
 10     6.00 77.61
 11     6.00 77.61
 12     6.00 77.61
 13     6.00 77.61
 14     6.00 77.61
 15     6.00 77.61
```

Westbound 24 from Southbound 680

```
'WB24FromSB680, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_34                                ' 'AG' 581374.92 4194714.74 581289.73 4194698.73
-1.25   16.50
    2 1
'Link_35                                ' 'AG' 581289.73 4194698.73 581252.03 4194697.16
-0.38   16.50
    3 1
'Link_36                                ' 'AG' 581252.03 4194697.16 581218.91 4194698.28
1.46   16.50
    4 1
'Link_37                                ' 'AG' 581218.91 4194698.28 581182.45 4194703.95
3.43   16.50
    5 1
'Link_38                                ' 'AG' 581182.45 4194703.95 581147.06 4194712.03
5.65   16.50
    6 1
'Link_39                                ' 'AG' 581147.06 4194712.03 581113.36 4194722.92
7.50   16.50
    7 1
'Link_40                                ' 'AG' 581113.36 4194722.92 581083.70 4194732.94
8.34   16.50
    8 1
'Link_41                                ' 'AG' 581083.70 4194732.94 581047.71 4194744.98
8.96   16.50
    9 1
'Link_42                                ' 'AG' 581047.71 4194744.98 580996.23 4194763.17
10.00   16.50
    10 1
'Link_43                                ' 'AG' 580996.23 4194763.17 580973.34 4194770.55
10.00   16.50
    11 1
'Link_44                                ' 'AG' 580973.34 4194770.55 581411.95 4194675.15
4.08   16.50
    12 1
'Link_45                                ' 'AG' 581411.95 4194675.15 581361.08 4194663.74
-5.00   16.50
 1     0.00
      1   627.41 75.13
      2   627.41 75.13
      3   627.41 75.13
      4   627.41 75.13
```

```
      5   627.41 75.13
      6   627.41 75.13
      7   627.41 75.13
      8   627.41 75.13
      9   627.41 75.13
     10   627.41 75.13
     11   627.41 75.13
     12   627.41 75.13
2     0.00
      1   203.32 76.69
      2   203.32 76.69
      3   203.32 76.69
      4   203.32 76.69
      5   203.32 76.69
      6   203.32 76.69
      7   203.32 76.69
      8   203.32 76.69
      9   203.32 76.69
     10   203.32 76.69
     11   203.32 76.69
     12   203.32 76.69
3     0.00
      1   199.78 112.31
      2   199.78 112.31
      3   199.78 112.31
      4   199.78 112.31
      5   199.78 112.31
      6   199.78 112.31
      7   199.78 112.31
      8   199.78 112.31
      9   199.78 112.31
     10   199.78 112.31
     11   199.78 112.31
     12   199.78 112.31
4     0.00
      1    93.37 83.28
      2    93.37 83.28
      3    93.37 83.28
      4    93.37 83.28
      5    93.37 83.28
      6    93.37 83.28
      7    93.37 83.28
      8    93.37 83.28
      9    93.37 83.28
     10    93.37 83.28
     11    93.37 83.28
     12    93.37 83.28
5     0.00
      1   264.15 81.29
      2   264.15 81.29
      3   264.15 81.29
      4   264.15 81.29
      5   264.15 81.29
      6   264.15 81.29
```

```
      7   264.15 81.29
      8   264.15 81.29
      9   264.15 81.29
     10   264.15 81.29
     11   264.15 81.29
     12   264.15 81.29
 6     0.00
      1   487.73 81.93
      2   487.73 81.93
      3   487.73 81.93
      4   487.73 81.93
      5   487.73 81.93
      6   487.73 81.93
      7   487.73 81.93
      8   487.73 81.93
      9   487.73 81.93
     10   487.73 81.93
     11   487.73 81.93
     12   487.73 81.93
 7     0.00
      1  2214.03 74.71
      2  2214.03 74.71
      3  2214.03 74.71
      4  2214.03 74.71
      5  2214.03 74.71
      6  2214.03 74.71
      7  2214.03 74.71
      8  2214.03 74.71
      9  2214.03 74.71
     10  2214.03 74.71
     11  2214.03 74.71
     12  2214.03 74.71
 8     0.00
      1  4699.68 74.64
      2  4699.68 74.64
      3  4699.68 74.64
      4  4699.68 74.64
      5  4699.68 74.64
      6  4699.68 74.64
      7  4699.68 74.64
      8  4699.68 74.64
      9  4699.68 74.64
     10  4699.68 74.64
     11  4699.68 74.64
     12  4699.68 74.64
 9     0.00
      1  4253.31 77.22
      2  4253.31 77.22
      3  4253.31 77.22
      4  4253.31 77.22
      5  4253.31 77.22
      6  4253.31 77.22
      7  4253.31 77.22
      8  4253.31 77.22
```

```
     9  4253.31 77.22
    10  4253.31 77.22
    11  4253.31 77.22
    12  4253.31 77.22
10     0.00
     1  2552.00 78.00
     2  2552.00 78.00
     3  2552.00 78.00
     4  2552.00 78.00
     5  2552.00 78.00
     6  2552.00 78.00
     7  2552.00 78.00
     8  2552.00 78.00
     9  2552.00 78.00
    10  2552.00 78.00
    11  2552.00 78.00
    12  2552.00 78.00
11     0.00
     1  2751.75 77.64
     2  2751.75 77.64
     3  2751.75 77.64
     4  2751.75 77.64
     5  2751.75 77.64
     6  2751.75 77.64
     7  2751.75 77.64
     8  2751.75 77.64
     9  2751.75 77.64
    10  2751.75 77.64
    11  2751.75 77.64
    12  2751.75 77.64
12     0.00
     1  3487.15 76.53
     2  3487.15 76.53
     3  3487.15 76.53
     4  3487.15 76.53
     5  3487.15 76.53
     6  3487.15 76.53
     7  3487.15 76.53
     8  3487.15 76.53
     9  3487.15 76.53
    10  3487.15 76.53
    11  3487.15 76.53
    12  3487.15 76.53
13     0.00
     1  3670.00 75.64
     2  3670.00 75.64
     3  3670.00 75.64
     4  3670.00 75.64
     5  3670.00 75.64
     6  3670.00 75.64
     7  3670.00 75.64
     8  3670.00 75.64
     9  3670.00 75.64
    10  3670.00 75.64
```

```
    11  3670.00 75.64
    12  3670.00 75.64
14     0.00
     1  3600.83 76.37
     2  3600.83 76.37
     3  3600.83 76.37
     4  3600.83 76.37
     5  3600.83 76.37
     6  3600.83 76.37
     7  3600.83 76.37
     8  3600.83 76.37
     9  3600.83 76.37
    10  3600.83 76.37
    11  3600.83 76.37
    12  3600.83 76.37
15     0.00
     1  4220.26 75.42
     2  4220.26 75.42
     3  4220.26 75.42
     4  4220.26 75.42
     5  4220.26 75.42
     6  4220.26 75.42
     7  4220.26 75.42
     8  4220.26 75.42
     9  4220.26 75.42
    10  4220.26 75.42
    11  4220.26 75.42
    12  4220.26 75.42
16     0.00
     1  4331.74 76.07
     2  4331.74 76.07
     3  4331.74 76.07
     4  4331.74 76.07
     5  4331.74 76.07
     6  4331.74 76.07
     7  4331.74 76.07
     8  4331.74 76.07
     9  4331.74 76.07
    10  4331.74 76.07
    11  4331.74 76.07
    12  4331.74 76.07
17     0.00
     1  4462.91 78.19
     2  4462.91 78.19
     3  4462.91 78.19
     4  4462.91 78.19
     5  4462.91 78.19
     6  4462.91 78.19
     7  4462.91 78.19
     8  4462.91 78.19
     9  4462.91 78.19
    10  4462.91 78.19
    11  4462.91 78.19
    12  4462.91 78.19
```

```
18     0.00
     1  4978.66 75.97
     2  4978.66 75.97
     3  4978.66 75.97
     4  4978.66 75.97
     5  4978.66 75.97
     6  4978.66 75.97
     7  4978.66 75.97
     8  4978.66 75.97
     9  4978.66 75.97
    10  4978.66 75.97
    11  4978.66 75.97
    12  4978.66 75.97
19     0.00
     1  3466.07 75.10
     2  3466.07 75.10
     3  3466.07 75.10
     4  3466.07 75.10
     5  3466.07 75.10
     6  3466.07 75.10
     7  3466.07 75.10
     8  3466.07 75.10
     9  3466.07 75.10
    10  3466.07 75.10
    11  3466.07 75.10
    12  3466.07 75.10
20     0.00
     1  2615.41 75.14
     2  2615.41 75.14
     3  2615.41 75.14
     4  2615.41 75.14
     5  2615.41 75.14
     6  2615.41 75.14
     7  2615.41 75.14
     8  2615.41 75.14
     9  2615.41 75.14
    10  2615.41 75.14
    11  2615.41 75.14
    12  2615.41 75.14
21     0.00
     1  1946.52 74.67
     2  1946.52 74.67
     3  1946.52 74.67
     4  1946.52 74.67
     5  1946.52 74.67
     6  1946.52 74.67
     7  1946.52 74.67
     8  1946.52 74.67
     9  1946.52 74.67
    10  1946.52 74.67
    11  1946.52 74.67
    12  1946.52 74.67
22     0.00
     1  1950.14 74.52
```

```
     2  1950.14 74.52
     3  1950.14 74.52
     4  1950.14 74.52
     5  1950.14 74.52
     6  1950.14 74.52
     7  1950.14 74.52
     8  1950.14 74.52
     9  1950.14 74.52
    10  1950.14 74.52
    11  1950.14 74.52
    12  1950.14 74.52
23     0.00
     1  1466.15 75.06
     2  1466.15 75.06
     3  1466.15 75.06
     4  1466.15 75.06
     5  1466.15 75.06
     6  1466.15 75.06
     7  1466.15 75.06
     8  1466.15 75.06
     9  1466.15 75.06
    10  1466.15 75.06
    11  1466.15 75.06
    12  1466.15 75.06
24     0.00
     1  1135.76 76.00
     2  1135.76 76.00
     3  1135.76 76.00
     4  1135.76 76.00
     5  1135.76 76.00
     6  1135.76 76.00
     7  1135.76 76.00
     8  1135.76 76.00
     9  1135.76 76.00
    10  1135.76 76.00
    11  1135.76 76.00
    12  1135.76 76.00
```

```
'WB24FromSB680, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_34                                ' 'AG' 581374.92 4194714.74 581289.73 4194698.73
-1.25   16.50
    2 1
'Link_35                                ' 'AG' 581289.73 4194698.73 581252.03 4194697.16
-0.38   16.50
    3 1
'Link_36                                ' 'AG' 581252.03 4194697.16 581218.91 4194698.28
1.46   16.50
    4 1
'Link_37                                ' 'AG' 581218.91 4194698.28 581182.45 4194703.95
3.43   16.50
    5 1
'Link_38                                ' 'AG' 581182.45 4194703.95 581147.06 4194712.03
5.65   16.50
    6 1
'Link_39                                ' 'AG' 581147.06 4194712.03 581113.36 4194722.92
7.50   16.50
    7 1
'Link_40                                ' 'AG' 581113.36 4194722.92 581083.70 4194732.94
8.34   16.50
    8 1
'Link_41                                ' 'AG' 581083.70 4194732.94 581047.71 4194744.98
8.96   16.50
    9 1
'Link_42                                ' 'AG' 581047.71 4194744.98 580996.23 4194763.17
10.00   16.50
    10 1
'Link_43                                ' 'AG' 580996.23 4194763.17 580973.34 4194770.55
10.00   16.50
    11 1
'Link_44                                ' 'AG' 580973.34 4194770.55 581411.95 4194675.15
4.08   16.50
    12 1
'Link_45                                ' 'AG' 581411.95 4194675.15 581361.08 4194663.74
-5.00   16.50
 1     0.00
      1   627.41 72.44
      2   627.41 72.44
      3   627.41 72.44
      4   627.41 72.44
```

```
     5   627.41 72.44
     6   627.41 72.44
     7   627.41 72.44
     8   627.41 72.44
     9   627.41 72.44
    10   627.41 72.44
    11   627.41 72.44
    12   627.41 72.44
2     0.00
     1   203.32 74.29
     2   203.32 74.29
     3   203.32 74.29
     4   203.32 74.29
     5   203.32 74.29
     6   203.32 74.29
     7   203.32 74.29
     8   203.32 74.29
     9   203.32 74.29
    10   203.32 74.29
    11   203.32 74.29
    12   203.32 74.29
3     0.00
     1   199.78 100.15
     2   199.78 100.15
     3   199.78 100.15
     4   199.78 100.15
     5   199.78 100.15
     6   199.78 100.15
     7   199.78 100.15
     8   199.78 100.15
     9   199.78 100.15
    10   199.78 100.15
    11   199.78 100.15
    12   199.78 100.15
4     0.00
     1    93.37 79.63
     2    93.37 79.63
     3    93.37 79.63
     4    93.37 79.63
     5    93.37 79.63
     6    93.37 79.63
     7    93.37 79.63
     8    93.37 79.63
     9    93.37 79.63
    10    93.37 79.63
    11    93.37 79.63
    12    93.37 79.63
5     0.00
     1   264.15 77.16
     2   264.15 77.16
     3   264.15 77.16
     4   264.15 77.16
     5   264.15 77.16
     6   264.15 77.16
```

```
      7   264.15 77.16
      8   264.15 77.16
      9   264.15 77.16
     10   264.15 77.16
     11   264.15 77.16
     12   264.15 77.16
 6     0.00
      1   487.73 79.84
      2   487.73 79.84
      3   487.73 79.84
      4   487.73 79.84
      5   487.73 79.84
      6   487.73 79.84
      7   487.73 79.84
      8   487.73 79.84
      9   487.73 79.84
     10   487.73 79.84
     11   487.73 79.84
     12   487.73 79.84
 7     0.00
      1  2214.03 72.46
      2  2214.03 72.46
      3  2214.03 72.46
      4  2214.03 72.46
      5  2214.03 72.46
      6  2214.03 72.46
      7  2214.03 72.46
      8  2214.03 72.46
      9  2214.03 72.46
     10  2214.03 72.46
     11  2214.03 72.46
     12  2214.03 72.46
 8     0.00
      1  4699.68 71.95
      2  4699.68 71.95
      3  4699.68 71.95
      4  4699.68 71.95
      5  4699.68 71.95
      6  4699.68 71.95
      7  4699.68 71.95
      8  4699.68 71.95
      9  4699.68 71.95
     10  4699.68 71.95
     11  4699.68 71.95
     12  4699.68 71.95
 9     0.00
      1  4253.31 74.88
      2  4253.31 74.88
      3  4253.31 74.88
      4  4253.31 74.88
      5  4253.31 74.88
      6  4253.31 74.88
      7  4253.31 74.88
      8  4253.31 74.88
```

```
     9  4253.31 74.88
    10  4253.31 74.88
    11  4253.31 74.88
    12  4253.31 74.88
10     0.00
     1  2552.00 75.60
     2  2552.00 75.60
     3  2552.00 75.60
     4  2552.00 75.60
     5  2552.00 75.60
     6  2552.00 75.60
     7  2552.00 75.60
     8  2552.00 75.60
     9  2552.00 75.60
    10  2552.00 75.60
    11  2552.00 75.60
    12  2552.00 75.60
11     0.00
     1  2751.75 74.54
     2  2751.75 74.54
     3  2751.75 74.54
     4  2751.75 74.54
     5  2751.75 74.54
     6  2751.75 74.54
     7  2751.75 74.54
     8  2751.75 74.54
     9  2751.75 74.54
    10  2751.75 74.54
    11  2751.75 74.54
    12  2751.75 74.54
12     0.00
     1  3487.15 74.05
     2  3487.15 74.05
     3  3487.15 74.05
     4  3487.15 74.05
     5  3487.15 74.05
     6  3487.15 74.05
     7  3487.15 74.05
     8  3487.15 74.05
     9  3487.15 74.05
    10  3487.15 74.05
    11  3487.15 74.05
    12  3487.15 74.05
13     0.00
     1  3670.00 72.78
     2  3670.00 72.78
     3  3670.00 72.78
     4  3670.00 72.78
     5  3670.00 72.78
     6  3670.00 72.78
     7  3670.00 72.78
     8  3670.00 72.78
     9  3670.00 72.78
    10  3670.00 72.78
```

```
    11  3670.00 72.78
    12  3670.00 72.78
14     0.00
     1  3600.83 73.52
     2  3600.83 73.52
     3  3600.83 73.52
     4  3600.83 73.52
     5  3600.83 73.52
     6  3600.83 73.52
     7  3600.83 73.52
     8  3600.83 73.52
     9  3600.83 73.52
    10  3600.83 73.52
    11  3600.83 73.52
    12  3600.83 73.52
15     0.00
     1  4220.26 72.77
     2  4220.26 72.77
     3  4220.26 72.77
     4  4220.26 72.77
     5  4220.26 72.77
     6  4220.26 72.77
     7  4220.26 72.77
     8  4220.26 72.77
     9  4220.26 72.77
    10  4220.26 72.77
    11  4220.26 72.77
    12  4220.26 72.77
16     0.00
     1  4331.74 73.39
     2  4331.74 73.39
     3  4331.74 73.39
     4  4331.74 73.39
     5  4331.74 73.39
     6  4331.74 73.39
     7  4331.74 73.39
     8  4331.74 73.39
     9  4331.74 73.39
    10  4331.74 73.39
    11  4331.74 73.39
    12  4331.74 73.39
17     0.00
     1  4462.91 74.73
     2  4462.91 74.73
     3  4462.91 74.73
     4  4462.91 74.73
     5  4462.91 74.73
     6  4462.91 74.73
     7  4462.91 74.73
     8  4462.91 74.73
     9  4462.91 74.73
    10  4462.91 74.73
    11  4462.91 74.73
    12  4462.91 74.73
```

```
18     0.00
     1  4978.66 73.52
     2  4978.66 73.52
     3  4978.66 73.52
     4  4978.66 73.52
     5  4978.66 73.52
     6  4978.66 73.52
     7  4978.66 73.52
     8  4978.66 73.52
     9  4978.66 73.52
    10  4978.66 73.52
    11  4978.66 73.52
    12  4978.66 73.52
19     0.00
     1  3466.07 72.57
     2  3466.07 72.57
     3  3466.07 72.57
     4  3466.07 72.57
     5  3466.07 72.57
     6  3466.07 72.57
     7  3466.07 72.57
     8  3466.07 72.57
     9  3466.07 72.57
    10  3466.07 72.57
    11  3466.07 72.57
    12  3466.07 72.57
20     0.00
     1  2615.41 72.73
     2  2615.41 72.73
     3  2615.41 72.73
     4  2615.41 72.73
     5  2615.41 72.73
     6  2615.41 72.73
     7  2615.41 72.73
     8  2615.41 72.73
     9  2615.41 72.73
    10  2615.41 72.73
    11  2615.41 72.73
    12  2615.41 72.73
21     0.00
     1  1946.52 71.91
     2  1946.52 71.91
     3  1946.52 71.91
     4  1946.52 71.91
     5  1946.52 71.91
     6  1946.52 71.91
     7  1946.52 71.91
     8  1946.52 71.91
     9  1946.52 71.91
    10  1946.52 71.91
    11  1946.52 71.91
    12  1946.52 71.91
22     0.00
     1  1950.14 71.74
```

```
     2  1950.14 71.74
     3  1950.14 71.74
     4  1950.14 71.74
     5  1950.14 71.74
     6  1950.14 71.74
     7  1950.14 71.74
     8  1950.14 71.74
     9  1950.14 71.74
    10  1950.14 71.74
    11  1950.14 71.74
    12  1950.14 71.74
23     0.00
     1  1466.15 72.22
     2  1466.15 72.22
     3  1466.15 72.22
     4  1466.15 72.22
     5  1466.15 72.22
     6  1466.15 72.22
     7  1466.15 72.22
     8  1466.15 72.22
     9  1466.15 72.22
    10  1466.15 72.22
    11  1466.15 72.22
    12  1466.15 72.22
24     0.00
     1  1135.76 72.95
     2  1135.76 72.95
     3  1135.76 72.95
     4  1135.76 72.95
     5  1135.76 72.95
     6  1135.76 72.95
     7  1135.76 72.95
     8  1135.76 72.95
     9  1135.76 72.95
    10  1135.76 72.95
    11  1135.76 72.95
    12  1135.76 72.95
```

```
'WB24FromSB680, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_34                                ' 'AG' 581374.92 4194714.74 581289.73 4194698.73
-1.25   16.50
    2 1
'Link_35                                ' 'AG' 581289.73 4194698.73 581252.03 4194697.16
-0.38   16.50
    3 1
'Link_36                                ' 'AG' 581252.03 4194697.16 581218.91 4194698.28
1.46   16.50
    4 1
'Link_37                                ' 'AG' 581218.91 4194698.28 581182.45 4194703.95
3.43   16.50
    5 1
'Link_38                                ' 'AG' 581182.45 4194703.95 581147.06 4194712.03
5.65   16.50
    6 1
'Link_39                                ' 'AG' 581147.06 4194712.03 581113.36 4194722.92
7.50   16.50
    7 1
'Link_40                                ' 'AG' 581113.36 4194722.92 581083.70 4194732.94
8.34   16.50
    8 1
'Link_41                                ' 'AG' 581083.70 4194732.94 581047.71 4194744.98
8.96   16.50
    9 1
'Link_42                                ' 'AG' 581047.71 4194744.98 580996.23 4194763.17
10.00   16.50
    10 1
'Link_43                                ' 'AG' 580996.23 4194763.17 580973.34 4194770.55
10.00   16.50
    11 1
'Link_44                                ' 'AG' 580973.34 4194770.55 581411.95 4194675.15
4.08   16.50
    12 1
'Link_45                                ' 'AG' 581411.95 4194675.15 581361.08 4194663.74
-5.00   16.50
 1     0.00
      1   692.28 20.16
      2   692.28 20.16
      3   692.28 20.16
      4   692.28 20.16
```

```
     5   692.28 20.16
     6   692.28 20.16
     7   692.28 20.16
     8   692.28 20.16
     9   692.28 20.16
    10   692.28 20.16
    11   692.28 20.16
    12   692.28 20.16
2     0.00
     1   257.84 23.07
     2   257.84 23.07
     3   257.84 23.07
     4   257.84 23.07
     5   257.84 23.07
     6   257.84 23.07
     7   257.84 23.07
     8   257.84 23.07
     9   257.84 23.07
    10   257.84 23.07
    11   257.84 23.07
    12   257.84 23.07
3     0.00
     1   271.27 23.30
     2   271.27 23.30
     3   271.27 23.30
     4   271.27 23.30
     5   271.27 23.30
     6   271.27 23.30
     7   271.27 23.30
     8   271.27 23.30
     9   271.27 23.30
    10   271.27 23.30
    11   271.27 23.30
    12   271.27 23.30
4     0.00
     1   145.06 25.05
     2   145.06 25.05
     3   145.06 25.05
     4   145.06 25.05
     5   145.06 25.05
     6   145.06 25.05
     7   145.06 25.05
     8   145.06 25.05
     9   145.06 25.05
    10   145.06 25.05
    11   145.06 25.05
    12   145.06 25.05
5     0.00
     1   304.68 20.91
     2   304.68 20.91
     3   304.68 20.91
     4   304.68 20.91
     5   304.68 20.91
     6   304.68 20.91
```

```
      7   304.68 20.91
      8   304.68 20.91
      9   304.68 20.91
     10   304.68 20.91
     11   304.68 20.91
     12   304.68 20.91
 6     0.00
      1   531.18 20.02
      2   531.18 20.02
      3   531.18 20.02
      4   531.18 20.02
      5   531.18 20.02
      6   531.18 20.02
      7   531.18 20.02
      8   531.18 20.02
      9   531.18 20.02
     10   531.18 20.02
     11   531.18 20.02
     12   531.18 20.02
 7     0.00
      1  2287.28 18.76
      2  2287.28 18.76
      3  2287.28 18.76
      4  2287.28 18.76
      5  2287.28 18.76
      6  2287.28 18.76
      7  2287.28 18.76
      8  2287.28 18.76
      9  2287.28 18.76
     10  2287.28 18.76
     11  2287.28 18.76
     12  2287.28 18.76
 8     0.00
      1  4771.20 18.29
      2  4771.20 18.29
      3  4771.20 18.29
      4  4771.20 18.29
      5  4771.20 18.29
      6  4771.20 18.29
      7  4771.20 18.29
      8  4771.20 18.29
      9  4771.20 18.29
     10  4771.20 18.29
     11  4771.20 18.29
     12  4771.20 18.29
 9     0.00
      1  4349.58 18.50
      2  4349.58 18.50
      3  4349.58 18.50
      4  4349.58 18.50
      5  4349.58 18.50
      6  4349.58 18.50
      7  4349.58 18.50
      8  4349.58 18.50
```

```
     9  4349.58 18.50
    10  4349.58 18.50
    11  4349.58 18.50
    12  4349.58 18.50
10     0.00
     1  2655.07 19.04
     2  2655.07 19.04
     3  2655.07 19.04
     4  2655.07 19.04
     5  2655.07 19.04
     6  2655.07 19.04
     7  2655.07 19.04
     8  2655.07 19.04
     9  2655.07 19.04
    10  2655.07 19.04
    11  2655.07 19.04
    12  2655.07 19.04
11     0.00
     1  2847.53 18.88
     2  2847.53 18.88
     3  2847.53 18.88
     4  2847.53 18.88
     5  2847.53 18.88
     6  2847.53 18.88
     7  2847.53 18.88
     8  2847.53 18.88
     9  2847.53 18.88
    10  2847.53 18.88
    11  2847.53 18.88
    12  2847.53 18.88
12     0.00
     1  3589.32 18.75
     2  3589.32 18.75
     3  3589.32 18.75
     4  3589.32 18.75
     5  3589.32 18.75
     6  3589.32 18.75
     7  3589.32 18.75
     8  3589.32 18.75
     9  3589.32 18.75
    10  3589.32 18.75
    11  3589.32 18.75
    12  3589.32 18.75
13     0.00
     1  3759.31 18.67
     2  3759.31 18.67
     3  3759.31 18.67
     4  3759.31 18.67
     5  3759.31 18.67
     6  3759.31 18.67
     7  3759.31 18.67
     8  3759.31 18.67
     9  3759.31 18.67
    10  3759.31 18.67
```

```
    11  3759.31 18.67
    12  3759.31 18.67
14     0.00
     1  3691.88 18.69
     2  3691.88 18.69
     3  3691.88 18.69
     4  3691.88 18.69
     5  3691.88 18.69
     6  3691.88 18.69
     7  3691.88 18.69
     8  3691.88 18.69
     9  3691.88 18.69
    10  3691.88 18.69
    11  3691.88 18.69
    12  3691.88 18.69
15     0.00
     1  4295.27 18.51
     2  4295.27 18.51
     3  4295.27 18.51
     4  4295.27 18.51
     5  4295.27 18.51
     6  4295.27 18.51
     7  4295.27 18.51
     8  4295.27 18.51
     9  4295.27 18.51
    10  4295.27 18.51
    11  4295.27 18.51
    12  4295.27 18.51
16     0.00
     1  4390.04 18.37
     2  4390.04 18.37
     3  4390.04 18.37
     4  4390.04 18.37
     5  4390.04 18.37
     6  4390.04 18.37
     7  4390.04 18.37
     8  4390.04 18.37
     9  4390.04 18.37
    10  4390.04 18.37
    11  4390.04 18.37
    12  4390.04 18.37
17     0.00
     1  4538.01 18.48
     2  4538.01 18.48
     3  4538.01 18.48
     4  4538.01 18.48
     5  4538.01 18.48
     6  4538.01 18.48
     7  4538.01 18.48
     8  4538.01 18.48
     9  4538.01 18.48
    10  4538.01 18.48
    11  4538.01 18.48
    12  4538.01 18.48
```

```
18     0.00
     1  5044.72 18.32
     2  5044.72 18.32
     3  5044.72 18.32
     4  5044.72 18.32
     5  5044.72 18.32
     6  5044.72 18.32
     7  5044.72 18.32
     8  5044.72 18.32
     9  5044.72 18.32
    10  5044.72 18.32
    11  5044.72 18.32
    12  5044.72 18.32
19     0.00
     1  3518.83 18.39
     2  3518.83 18.39
     3  3518.83 18.39
     4  3518.83 18.39
     5  3518.83 18.39
     6  3518.83 18.39
     7  3518.83 18.39
     8  3518.83 18.39
     9  3518.83 18.39
    10  3518.83 18.39
    11  3518.83 18.39
    12  3518.83 18.39
20     0.00
     1  2639.91 18.26
     2  2639.91 18.26
     3  2639.91 18.26
     4  2639.91 18.26
     5  2639.91 18.26
     6  2639.91 18.26
     7  2639.91 18.26
     8  2639.91 18.26
     9  2639.91 18.26
    10  2639.91 18.26
    11  2639.91 18.26
    12  2639.91 18.26
21     0.00
     1  1998.91 18.64
     2  1998.91 18.64
     3  1998.91 18.64
     4  1998.91 18.64
     5  1998.91 18.64
     6  1998.91 18.64
     7  1998.91 18.64
     8  1998.91 18.64
     9  1998.91 18.64
    10  1998.91 18.64
    11  1998.91 18.64
    12  1998.91 18.64
22     0.00
     1  2006.26 18.78
```

```
     2  2006.26 18.78
     3  2006.26 18.78
     4  2006.26 18.78
     5  2006.26 18.78
     6  2006.26 18.78
     7  2006.26 18.78
     8  2006.26 18.78
     9  2006.26 18.78
    10  2006.26 18.78
    11  2006.26 18.78
    12  2006.26 18.78
23     0.00
     1  1507.92 18.80
     2  1507.92 18.80
     3  1507.92 18.80
     4  1507.92 18.80
     5  1507.92 18.80
     6  1507.92 18.80
     7  1507.92 18.80
     8  1507.92 18.80
     9  1507.92 18.80
    10  1507.92 18.80
    11  1507.92 18.80
    12  1507.92 18.80
24     0.00
     1  1156.64 18.51
     2  1156.64 18.51
     3  1156.64 18.51
     4  1156.64 18.51
     5  1156.64 18.51
     6  1156.64 18.51
     7  1156.64 18.51
     8  1156.64 18.51
     9  1156.64 18.51
    10  1156.64 18.51
    11  1156.64 18.51
    12  1156.64 18.51
```

```
'WB24FromSB680, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_34                                ' 'AG' 581374.92 4194714.74 581289.73 4194698.73
-1.25   16.50
    2 1
'Link_35                                ' 'AG' 581289.73 4194698.73 581252.03 4194697.16
-0.38   16.50
    3 1
'Link_36                                ' 'AG' 581252.03 4194697.16 581218.91 4194698.28
1.46   16.50
    4 1
'Link_37                                ' 'AG' 581218.91 4194698.28 581182.45 4194703.95
3.43   16.50
    5 1
'Link_38                                ' 'AG' 581182.45 4194703.95 581147.06 4194712.03
5.65   16.50
    6 1
'Link_39                                ' 'AG' 581147.06 4194712.03 581113.36 4194722.92
7.50   16.50
    7 1
'Link_40                                ' 'AG' 581113.36 4194722.92 581083.70 4194732.94
8.34   16.50
    8 1
'Link_41                                ' 'AG' 581083.70 4194732.94 581047.71 4194744.98
8.96   16.50
    9 1
'Link_42                                ' 'AG' 581047.71 4194744.98 580996.23 4194763.17
10.00   16.50
    10 1
'Link_43                                ' 'AG' 580996.23 4194763.17 580973.34 4194770.55
10.00   16.50
    11 1
'Link_44                                ' 'AG' 580973.34 4194770.55 581411.95 4194675.15
4.08   16.50
    12 1
'Link_45                                ' 'AG' 581411.95 4194675.15 581361.08 4194663.74
-5.00   16.50
 1     0.00
      1   692.28 7.66
      2   692.28 7.66
      3   692.28 7.66
      4   692.28 7.66
```

```
      5   692.28 7.66
      6   692.28 7.66
      7   692.28 7.66
      8   692.28 7.66
      9   692.28 7.66
     10   692.28 7.66
     11   692.28 7.66
     12   692.28 7.66
2     0.00
      1   257.84 13.49
      2   257.84 13.49
      3   257.84 13.49
      4   257.84 13.49
      5   257.84 13.49
      6   257.84 13.49
      7   257.84 13.49
      8   257.84 13.49
      9   257.84 13.49
     10   257.84 13.49
     11   257.84 13.49
     12   257.84 13.49
3     0.00
      1   271.27 15.54
      2   271.27 15.54
      3   271.27 15.54
      4   271.27 15.54
      5   271.27 15.54
      6   271.27 15.54
      7   271.27 15.54
      8   271.27 15.54
      9   271.27 15.54
     10   271.27 15.54
     11   271.27 15.54
     12   271.27 15.54
4     0.00
      1   145.06 26.12
      2   145.06 26.12
      3   145.06 26.12
      4   145.06 26.12
      5   145.06 26.12
      6   145.06 26.12
      7   145.06 26.12
      8   145.06 26.12
      9   145.06 26.12
     10   145.06 26.12
     11   145.06 26.12
     12   145.06 26.12
5     0.00
      1   304.68 10.09
      2   304.68 10.09
      3   304.68 10.09
      4   304.68 10.09
      5   304.68 10.09
      6   304.68 10.09
```

```
      7   304.68 10.09
      8   304.68 10.09
      9   304.68 10.09
     10   304.68 10.09
     11   304.68 10.09
     12   304.68 10.09
 6     0.00
      1   531.18 7.97
      2   531.18 7.97
      3   531.18 7.97
      4   531.18 7.97
      5   531.18 7.97
      6   531.18 7.97
      7   531.18 7.97
      8   531.18 7.97
      9   531.18 7.97
     10   531.18 7.97
     11   531.18 7.97
     12   531.18 7.97
 7     0.00
      1  2287.28 4.19
      2  2287.28 4.19
      3  2287.28 4.19
      4  2287.28 4.19
      5  2287.28 4.19
      6  2287.28 4.19
      7  2287.28 4.19
      8  2287.28 4.19
      9  2287.28 4.19
     10  2287.28 4.19
     11  2287.28 4.19
     12  2287.28 4.19
 8     0.00
      1  4771.20 2.83
      2  4771.20 2.83
      3  4771.20 2.83
      4  4771.20 2.83
      5  4771.20 2.83
      6  4771.20 2.83
      7  4771.20 2.83
      8  4771.20 2.83
      9  4771.20 2.83
     10  4771.20 2.83
     11  4771.20 2.83
     12  4771.20 2.83
 9     0.00
      1  4349.58 3.27
      2  4349.58 3.27
      3  4349.58 3.27
      4  4349.58 3.27
      5  4349.58 3.27
      6  4349.58 3.27
      7  4349.58 3.27
      8  4349.58 3.27
```

```
     9  4349.58 3.27
    10  4349.58 3.27
    11  4349.58 3.27
    12  4349.58 3.27
10     0.00
     1  2655.07 4.52
     2  2655.07 4.52
     3  2655.07 4.52
     4  2655.07 4.52
     5  2655.07 4.52
     6  2655.07 4.52
     7  2655.07 4.52
     8  2655.07 4.52
     9  2655.07 4.52
    10  2655.07 4.52
    11  2655.07 4.52
    12  2655.07 4.52
11     0.00
     1  2847.53 4.13
     2  2847.53 4.13
     3  2847.53 4.13
     4  2847.53 4.13
     5  2847.53 4.13
     6  2847.53 4.13
     7  2847.53 4.13
     8  2847.53 4.13
     9  2847.53 4.13
    10  2847.53 4.13
    11  2847.53 4.13
    12  2847.53 4.13
12     0.00
     1  3589.32 3.79
     2  3589.32 3.79
     3  3589.32 3.79
     4  3589.32 3.79
     5  3589.32 3.79
     6  3589.32 3.79
     7  3589.32 3.79
     8  3589.32 3.79
     9  3589.32 3.79
    10  3589.32 3.79
    11  3589.32 3.79
    12  3589.32 3.79
13     0.00
     1  3759.31 3.52
     2  3759.31 3.52
     3  3759.31 3.52
     4  3759.31 3.52
     5  3759.31 3.52
     6  3759.31 3.52
     7  3759.31 3.52
     8  3759.31 3.52
     9  3759.31 3.52
    10  3759.31 3.52
```

```
    11  3759.31 3.52
    12  3759.31 3.52
14     0.00
     1  3691.88 3.57
     2  3691.88 3.57
     3  3691.88 3.57
     4  3691.88 3.57
     5  3691.88 3.57
     6  3691.88 3.57
     7  3691.88 3.57
     8  3691.88 3.57
     9  3691.88 3.57
    10  3691.88 3.57
    11  3691.88 3.57
    12  3691.88 3.57
15     0.00
     1  4295.27 3.09
     2  4295.27 3.09
     3  4295.27 3.09
     4  4295.27 3.09
     5  4295.27 3.09
     6  4295.27 3.09
     7  4295.27 3.09
     8  4295.27 3.09
     9  4295.27 3.09
    10  4295.27 3.09
    11  4295.27 3.09
    12  4295.27 3.09
16     0.00
     1  4390.04 2.75
     2  4390.04 2.75
     3  4390.04 2.75
     4  4390.04 2.75
     5  4390.04 2.75
     6  4390.04 2.75
     7  4390.04 2.75
     8  4390.04 2.75
     9  4390.04 2.75
    10  4390.04 2.75
    11  4390.04 2.75
    12  4390.04 2.75
17     0.00
     1  4538.01 3.03
     2  4538.01 3.03
     3  4538.01 3.03
     4  4538.01 3.03
     5  4538.01 3.03
     6  4538.01 3.03
     7  4538.01 3.03
     8  4538.01 3.03
     9  4538.01 3.03
    10  4538.01 3.03
    11  4538.01 3.03
    12  4538.01 3.03
```

```
18     0.00
     1  5044.72 2.62
     2  5044.72 2.62
     3  5044.72 2.62
     4  5044.72 2.62
     5  5044.72 2.62
     6  5044.72 2.62
     7  5044.72 2.62
     8  5044.72 2.62
     9  5044.72 2.62
    10  5044.72 2.62
    11  5044.72 2.62
    12  5044.72 2.62
19     0.00
     1  3518.83 2.77
     2  3518.83 2.77
     3  3518.83 2.77
     4  3518.83 2.77
     5  3518.83 2.77
     6  3518.83 2.77
     7  3518.83 2.77
     8  3518.83 2.77
     9  3518.83 2.77
    10  3518.83 2.77
    11  3518.83 2.77
    12  3518.83 2.77
20     0.00
     1  2639.91 2.45
     2  2639.91 2.45
     3  2639.91 2.45
     4  2639.91 2.45
     5  2639.91 2.45
     6  2639.91 2.45
     7  2639.91 2.45
     8  2639.91 2.45
     9  2639.91 2.45
    10  2639.91 2.45
    11  2639.91 2.45
    12  2639.91 2.45
21     0.00
     1  1998.91 3.53
     2  1998.91 3.53
     3  1998.91 3.53
     4  1998.91 3.53
     5  1998.91 3.53
     6  1998.91 3.53
     7  1998.91 3.53
     8  1998.91 3.53
     9  1998.91 3.53
    10  1998.91 3.53
    11  1998.91 3.53
    12  1998.91 3.53
22     0.00
     1  2006.26 3.81
```

```
     2  2006.26 3.81
     3  2006.26 3.81
     4  2006.26 3.81
     5  2006.26 3.81
     6  2006.26 3.81
     7  2006.26 3.81
     8  2006.26 3.81
     9  2006.26 3.81
    10  2006.26 3.81
    11  2006.26 3.81
    12  2006.26 3.81
23     0.00
     1  1507.92 3.64
     2  1507.92 3.64
     3  1507.92 3.64
     4  1507.92 3.64
     5  1507.92 3.64
     6  1507.92 3.64
     7  1507.92 3.64
     8  1507.92 3.64
     9  1507.92 3.64
    10  1507.92 3.64
    11  1507.92 3.64
    12  1507.92 3.64
24     0.00
     1  1156.64 3.02
     2  1156.64 3.02
     3  1156.64 3.02
     4  1156.64 3.02
     5  1156.64 3.02
     6  1156.64 3.02
     7  1156.64 3.02
     8  1156.64 3.02
     9  1156.64 3.02
    10  1156.64 3.02
    11  1156.64 3.02
    12  1156.64 3.02
```

```
'WB24FromSB680, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 12
    1 1
'Link_34                                ' 'AG' 581374.92 4194714.74 581289.73 4194698.73
-1.25   16.50
    2 1
'Link_35                                ' 'AG' 581289.73 4194698.73 581252.03 4194697.16
-0.38   16.50
    3 1
'Link_36                                ' 'AG' 581252.03 4194697.16 581218.91 4194698.28
1.46   16.50
    4 1
'Link_37                                ' 'AG' 581218.91 4194698.28 581182.45 4194703.95
3.43   16.50
    5 1
'Link_38                                ' 'AG' 581182.45 4194703.95 581147.06 4194712.03
5.65   16.50
    6 1
'Link_39                                ' 'AG' 581147.06 4194712.03 581113.36 4194722.92
7.50   16.50
    7 1
'Link_40                                ' 'AG' 581113.36 4194722.92 581083.70 4194732.94
8.34   16.50
    8 1
'Link_41                                ' 'AG' 581083.70 4194732.94 581047.71 4194744.98
8.96   16.50
    9 1
'Link_42                                ' 'AG' 581047.71 4194744.98 580996.23 4194763.17
10.00   16.50
    10 1
'Link_43                                ' 'AG' 580996.23 4194763.17 580973.34 4194770.55
10.00   16.50
    11 1
'Link_44                                ' 'AG' 580973.34 4194770.55 581411.95 4194675.15
4.08   16.50
    12 1
'Link_45                                ' 'AG' 581411.95 4194675.15 581361.08 4194663.74
-5.00   16.50
 1     0.00
      1    64.88 70.39
      2    64.88 70.39
      3    64.88 70.39
      4    64.88 70.39
```

```
      5    64.88 70.39
      6    64.88 70.39
      7    64.88 70.39
      8    64.88 70.39
      9    64.88 70.39
     10    64.88 70.39
     11    64.88 70.39
     12    64.88 70.39
2     0.00
      1    54.52 62.19
      2    54.52 62.19
      3    54.52 62.19
      4    54.52 62.19
      5    54.52 62.19
      6    54.52 62.19
      7    54.52 62.19
      8    54.52 62.19
      9    54.52 62.19
     10    54.52 62.19
     11    54.52 62.19
     12    54.52 62.19
3     0.00
      1    71.49 58.32
      2    71.49 58.32
      3    71.49 58.32
      4    71.49 58.32
      5    71.49 58.32
      6    71.49 58.32
      7    71.49 58.32
      8    71.49 58.32
      9    71.49 58.32
     10    71.49 58.32
     11    71.49 58.32
     12    71.49 58.32
4     0.00
      1    51.70 76.15
      2    51.70 76.15
      3    51.70 76.15
      4    51.70 76.15
      5    51.70 76.15
      6    51.70 76.15
      7    51.70 76.15
      8    51.70 76.15
      9    51.70 76.15
     10    51.70 76.15
     11    51.70 76.15
     12    51.70 76.15
5     0.00
      1    40.53 69.86
      2    40.53 69.86
      3    40.53 69.86
      4    40.53 69.86
      5    40.53 69.86
      6    40.53 69.86
```

```
      7    40.53 69.86
      8    40.53 69.86
      9    40.53 69.86
     10    40.53 69.86
     11    40.53 69.86
     12    40.53 69.86
6     0.00
      1    43.45 84.31
      2    43.45 84.31
      3    43.45 84.31
      4    43.45 84.31
      5    43.45 84.31
      6    43.45 84.31
      7    43.45 84.31
      8    43.45 84.31
      9    43.45 84.31
     10    43.45 84.31
     11    43.45 84.31
     12    43.45 84.31
7     0.00
      1    73.25 84.70
      2    73.25 84.70
      3    73.25 84.70
      4    73.25 84.70
      5    73.25 84.70
      6    73.25 84.70
      7    73.25 84.70
      8    73.25 84.70
      9    73.25 84.70
     10    73.25 84.70
     11    73.25 84.70
     12    73.25 84.70
8     0.00
      1    71.52 79.73
      2    71.52 79.73
      3    71.52 79.73
      4    71.52 79.73
      5    71.52 79.73
      6    71.52 79.73
      7    71.52 79.73
      8    71.52 79.73
      9    71.52 79.73
     10    71.52 79.73
     11    71.52 79.73
     12    71.52 79.73
9     0.00
      1    96.27 75.90
      2    96.27 75.90
      3    96.27 75.90
      4    96.27 75.90
      5    96.27 75.90
      6    96.27 75.90
      7    96.27 75.90
      8    96.27 75.90
```

```
     9    96.27 75.90
    10    96.27 75.90
    11    96.27 75.90
    12    96.27 75.90
10     0.00
     1   103.07 79.07
     2   103.07 79.07
     3   103.07 79.07
     4   103.07 79.07
     5   103.07 79.07
     6   103.07 79.07
     7   103.07 79.07
     8   103.07 79.07
     9   103.07 79.07
    10   103.07 79.07
    11   103.07 79.07
    12   103.07 79.07
11     0.00
     1    95.78 78.46
     2    95.78 78.46
     3    95.78 78.46
     4    95.78 78.46
     5    95.78 78.46
     6    95.78 78.46
     7    95.78 78.46
     8    95.78 78.46
     9    95.78 78.46
    10    95.78 78.46
    11    95.78 78.46
    12    95.78 78.46
12     0.00
     1   102.17 79.38
     2   102.17 79.38
     3   102.17 79.38
     4   102.17 79.38
     5   102.17 79.38
     6   102.17 79.38
     7   102.17 79.38
     8   102.17 79.38
     9   102.17 79.38
    10   102.17 79.38
    11   102.17 79.38
    12   102.17 79.38
13     0.00
     1    89.31 82.55
     2    89.31 82.55
     3    89.31 82.55
     4    89.31 82.55
     5    89.31 82.55
     6    89.31 82.55
     7    89.31 82.55
     8    89.31 82.55
     9    89.31 82.55
    10    89.31 82.55
```

```
    11    89.31 82.55
    12    89.31 82.55
14     0.00
     1    91.05 81.56
     2    91.05 81.56
     3    91.05 81.56
     4    91.05 81.56
     5    91.05 81.56
     6    91.05 81.56
     7    91.05 81.56
     8    91.05 81.56
     9    91.05 81.56
    10    91.05 81.56
    11    91.05 81.56
    12    91.05 81.56
15     0.00
     1    75.02 84.91
     2    75.02 84.91
     3    75.02 84.91
     4    75.02 84.91
     5    75.02 84.91
     6    75.02 84.91
     7    75.02 84.91
     8    75.02 84.91
     9    75.02 84.91
    10    75.02 84.91
    11    75.02 84.91
    12    75.02 84.91
16     0.00
     1    58.30 82.97
     2    58.30 82.97
     3    58.30 82.97
     4    58.30 82.97
     5    58.30 82.97
     6    58.30 82.97
     7    58.30 82.97
     8    58.30 82.97
     9    58.30 82.97
    10    58.30 82.97
    11    58.30 82.97
    12    58.30 82.97
17     0.00
     1    75.10 85.04
     2    75.10 85.04
     3    75.10 85.04
     4    75.10 85.04
     5    75.10 85.04
     6    75.10 85.04
     7    75.10 85.04
     8    75.10 85.04
     9    75.10 85.04
    10    75.10 85.04
    11    75.10 85.04
    12    75.10 85.04
```

```
18     0.00
     1    66.05 73.36
     2    66.05 73.36
     3    66.05 73.36
     4    66.05 73.36
     5    66.05 73.36
     6    66.05 73.36
     7    66.05 73.36
     8    66.05 73.36
     9    66.05 73.36
    10    66.05 73.36
    11    66.05 73.36
    12    66.05 73.36
19     0.00
     1    52.76 75.88
     2    52.76 75.88
     3    52.76 75.88
     4    52.76 75.88
     5    52.76 75.88
     6    52.76 75.88
     7    52.76 75.88
     8    52.76 75.88
     9    52.76 75.88
    10    52.76 75.88
    11    52.76 75.88
    12    52.76 75.88
20     0.00
     1    24.50 83.24
     2    24.50 83.24
     3    24.50 83.24
     4    24.50 83.24
     5    24.50 83.24
     6    24.50 83.24
     7    24.50 83.24
     8    24.50 83.24
     9    24.50 83.24
    10    24.50 83.24
    11    24.50 83.24
    12    24.50 83.24
21     0.00
     1    52.39 75.67
     2    52.39 75.67
     3    52.39 75.67
     4    52.39 75.67
     5    52.39 75.67
     6    52.39 75.67
     7    52.39 75.67
     8    52.39 75.67
     9    52.39 75.67
    10    52.39 75.67
    11    52.39 75.67
    12    52.39 75.67
22     0.00
     1    56.13 81.67
```

```
     2    56.13 81.67
     3    56.13 81.67
     4    56.13 81.67
     5    56.13 81.67
     6    56.13 81.67
     7    56.13 81.67
     8    56.13 81.67
     9    56.13 81.67
    10    56.13 81.67
    11    56.13 81.67
    12    56.13 81.67
23     0.00
     1    41.77 75.82
     2    41.77 75.82
     3    41.77 75.82
     4    41.77 75.82
     5    41.77 75.82
     6    41.77 75.82
     7    41.77 75.82
     8    41.77 75.82
     9    41.77 75.82
    10    41.77 75.82
    11    41.77 75.82
    12    41.77 75.82
24     0.00
     1    20.88 77.61
     2    20.88 77.61
     3    20.88 77.61
     4    20.88 77.61
     5    20.88 77.61
     6    20.88 77.61
     7    20.88 77.61
     8    20.88 77.61
     9    20.88 77.61
    10    20.88 77.61
    11    20.88 77.61
    12    20.88 77.61
```

Westbound 24 from Walnut Creek

```
'WB24fromWC, TOGGNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_1                                 ' 'AG' 581350.03 4194737.17 581336.06 4194736.29
-1.64    9.68
    2 1
'Link_2                                 ' 'AG' 581336.06 4194736.29 581315.10 4194735.51
-1.25    9.68
    3 1
'Link_3                                 ' 'AG' 581315.10 4194735.51 581296.81 4194734.19
0.18    9.68
    4 1
'Link_4                                 ' 'AG' 581296.81 4194734.19 581278.10 4194733.83
1.58    9.68
    5 1
'Link_5                                 ' 'AG' 581278.10 4194733.83 581256.66 4194733.99
2.27    9.68
    6 1
'Link_6                                 ' 'AG' 581256.66 4194733.99 581239.36 4194734.53
3.12    9.68
    7 1
'Link_7                                 ' 'AG' 581239.36 4194734.53 581223.40 4194735.14
3.83    9.68
    8 1
'Link_8                                 ' 'AG' 581223.40 4194735.14 581201.76 4194736.28
4.41    9.68
    9 1
'Link_9                                 ' 'AG' 581201.76 4194736.28 581187.97 4194738.09
5.07    9.68
    10 1
'Link_10                                ' 'AG' 581187.97 4194738.09 581170.61 4194739.90
6.62    9.68
    11 1
'Link_11                                ' 'AG' 581170.61 4194739.90 581146.74 4194743.11
8.83    9.68
    12 1
'Link_12                                ' 'AG' 581146.74 4194743.11 581128.69 4194746.38
10.00    9.68
    13 1
'Link_13                                ' 'AG' 581128.69 4194746.38 581109.38 4194750.70
10.00    9.68
    14 1
'Link_14                                ' 'AG' 581109.38 4194750.70 581089.22 4194754.93
```

```
10.00    9.68
    15 1
'Link_15                                ' 'AG' 581089.22 4194754.93 581075.77 4194758.64
10.00    9.68
    16 1
'Link_16                                ' 'AG' 581075.77 4194758.64 581065.15 4194762.03
10.00    9.68
    17 1
'Link_17                                ' 'AG' 581065.15 4194762.03 581029.34 4194771.80
10.00    9.68
    18 1
'Link_18                                ' 'AG' 581029.34 4194771.80 580998.75 4194780.04
10.00    9.68
 1     0.00
      1   111.65 75.13
      2   111.65 75.13
      3   111.65 75.13
      4   111.65 75.13
      5   111.65 75.13
      6   111.65 75.13
      7   111.65 75.13
      8   111.65 75.13
      9   111.65 75.13
     10   111.65 75.13
     11   111.65 75.13
     12   111.65 75.13
     13   111.65 75.13
     14   111.65 75.13
     15   111.65 75.13
     16   111.65 75.13
     17   111.65 75.13
     18   111.65 75.13
 2     0.00
      1    36.18 76.69
      2    36.18 76.69
      3    36.18 76.69
      4    36.18 76.69
      5    36.18 76.69
      6    36.18 76.69
      7    36.18 76.69
      8    36.18 76.69
      9    36.18 76.69
     10    36.18 76.69
     11    36.18 76.69
     12    36.18 76.69
     13    36.18 76.69
     14    36.18 76.69
     15    36.18 76.69
     16    36.18 76.69
     17    36.18 76.69
     18    36.18 76.69
 3     0.00
      1    35.55 112.31
      2    35.55 112.31
```

```
      3    35.55 112.31
      4    35.55 112.31
      5    35.55 112.31
      6    35.55 112.31
      7    35.55 112.31
      8    35.55 112.31
      9    35.55 112.31
     10    35.55 112.31
     11    35.55 112.31
     12    35.55 112.31
     13    35.55 112.31
     14    35.55 112.31
     15    35.55 112.31
     16    35.55 112.31
     17    35.55 112.31
     18    35.55 112.31
4     0.00
      1    16.62 83.28
      2    16.62 83.28
      3    16.62 83.28
      4    16.62 83.28
      5    16.62 83.28
      6    16.62 83.28
      7    16.62 83.28
      8    16.62 83.28
      9    16.62 83.28
     10    16.62 83.28
     11    16.62 83.28
     12    16.62 83.28
     13    16.62 83.28
     14    16.62 83.28
     15    16.62 83.28
     16    16.62 83.28
     17    16.62 83.28
     18    16.62 83.28
5     0.00
      1    47.01 81.29
      2    47.01 81.29
      3    47.01 81.29
      4    47.01 81.29
      5    47.01 81.29
      6    47.01 81.29
      7    47.01 81.29
      8    47.01 81.29
      9    47.01 81.29
     10    47.01 81.29
     11    47.01 81.29
     12    47.01 81.29
     13    47.01 81.29
     14    47.01 81.29
     15    47.01 81.29
     16    47.01 81.29
     17    47.01 81.29
     18    47.01 81.29
```

```
6     0.00
     1    86.80 81.93
     2    86.80 81.93
     3    86.80 81.93
     4    86.80 81.93
     5    86.80 81.93
     6    86.80 81.93
     7    86.80 81.93
     8    86.80 81.93
     9    86.80 81.93
    10    86.80 81.93
    11    86.80 81.93
    12    86.80 81.93
    13    86.80 81.93
    14    86.80 81.93
    15    86.80 81.93
    16    86.80 81.93
    17    86.80 81.93
    18    86.80 81.93
7     0.00
     1   394.01 74.71
     2   394.01 74.71
     3   394.01 74.71
     4   394.01 74.71
     5   394.01 74.71
     6   394.01 74.71
     7   394.01 74.71
     8   394.01 74.71
     9   394.01 74.71
    10   394.01 74.71
    11   394.01 74.71
    12   394.01 74.71
    13   394.01 74.71
    14   394.01 74.71
    15   394.01 74.71
    16   394.01 74.71
    17   394.01 74.71
    18   394.01 74.71
8     0.00
     1   836.35 74.64
     2   836.35 74.64
     3   836.35 74.64
     4   836.35 74.64
     5   836.35 74.64
     6   836.35 74.64
     7   836.35 74.64
     8   836.35 74.64
     9   836.35 74.64
    10   836.35 74.64
    11   836.35 74.64
    12   836.35 74.64
    13   836.35 74.64
    14   836.35 74.64
    15   836.35 74.64
```

```
    16   836.35 74.64
    17   836.35 74.64
    18   836.35 74.64
9     0.00
     1   756.92 77.22
     2   756.92 77.22
     3   756.92 77.22
     4   756.92 77.22
     5   756.92 77.22
     6   756.92 77.22
     7   756.92 77.22
     8   756.92 77.22
     9   756.92 77.22
    10   756.92 77.22
    11   756.92 77.22
    12   756.92 77.22
    13   756.92 77.22
    14   756.92 77.22
    15   756.92 77.22
    16   756.92 77.22
    17   756.92 77.22
    18   756.92 77.22
10    0.00
     1   454.15 78.00
     2   454.15 78.00
     3   454.15 78.00
     4   454.15 78.00
     5   454.15 78.00
     6   454.15 78.00
     7   454.15 78.00
     8   454.15 78.00
     9   454.15 78.00
    10   454.15 78.00
    11   454.15 78.00
    12   454.15 78.00
    13   454.15 78.00
    14   454.15 78.00
    15   454.15 78.00
    16   454.15 78.00
    17   454.15 78.00
    18   454.15 78.00
11    0.00
     1   489.70 77.64
     2   489.70 77.64
     3   489.70 77.64
     4   489.70 77.64
     5   489.70 77.64
     6   489.70 77.64
     7   489.70 77.64
     8   489.70 77.64
     9   489.70 77.64
    10   489.70 77.64
    11   489.70 77.64
    12   489.70 77.64
```

```
    13   489.70 77.64
    14   489.70 77.64
    15   489.70 77.64
    16   489.70 77.64
    17   489.70 77.64
    18   489.70 77.64
12     0.00
     1   620.57 76.53
     2   620.57 76.53
     3   620.57 76.53
     4   620.57 76.53
     5   620.57 76.53
     6   620.57 76.53
     7   620.57 76.53
     8   620.57 76.53
     9   620.57 76.53
    10   620.57 76.53
    11   620.57 76.53
    12   620.57 76.53
    13   620.57 76.53
    14   620.57 76.53
    15   620.57 76.53
    16   620.57 76.53
    17   620.57 76.53
    18   620.57 76.53
13     0.00
     1   653.11 75.64
     2   653.11 75.64
     3   653.11 75.64
     4   653.11 75.64
     5   653.11 75.64
     6   653.11 75.64
     7   653.11 75.64
     8   653.11 75.64
     9   653.11 75.64
    10   653.11 75.64
    11   653.11 75.64
    12   653.11 75.64
    13   653.11 75.64
    14   653.11 75.64
    15   653.11 75.64
    16   653.11 75.64
    17   653.11 75.64
    18   653.11 75.64
14     0.00
     1   640.80 76.37
     2   640.80 76.37
     3   640.80 76.37
     4   640.80 76.37
     5   640.80 76.37
     6   640.80 76.37
     7   640.80 76.37
     8   640.80 76.37
     9   640.80 76.37
```

```
    10   640.80 76.37
    11   640.80 76.37
    12   640.80 76.37
    13   640.80 76.37
    14   640.80 76.37
    15   640.80 76.37
    16   640.80 76.37
    17   640.80 76.37
    18   640.80 76.37
15     0.00
     1   751.03 75.42
     2   751.03 75.42
     3   751.03 75.42
     4   751.03 75.42
     5   751.03 75.42
     6   751.03 75.42
     7   751.03 75.42
     8   751.03 75.42
     9   751.03 75.42
    10   751.03 75.42
    11   751.03 75.42
    12   751.03 75.42
    13   751.03 75.42
    14   751.03 75.42
    15   751.03 75.42
    16   751.03 75.42
    17   751.03 75.42
    18   751.03 75.42
16     0.00
     1   770.87 76.07
     2   770.87 76.07
     3   770.87 76.07
     4   770.87 76.07
     5   770.87 76.07
     6   770.87 76.07
     7   770.87 76.07
     8   770.87 76.07
     9   770.87 76.07
    10   770.87 76.07
    11   770.87 76.07
    12   770.87 76.07
    13   770.87 76.07
    14   770.87 76.07
    15   770.87 76.07
    16   770.87 76.07
    17   770.87 76.07
    18   770.87 76.07
17     0.00
     1   794.22 78.19
     2   794.22 78.19
     3   794.22 78.19
     4   794.22 78.19
     5   794.22 78.19
     6   794.22 78.19
```

```
     7   794.22 78.19
     8   794.22 78.19
     9   794.22 78.19
    10   794.22 78.19
    11   794.22 78.19
    12   794.22 78.19
    13   794.22 78.19
    14   794.22 78.19
    15   794.22 78.19
    16   794.22 78.19
    17   794.22 78.19
    18   794.22 78.19
18     0.00
     1   886.00 75.97
     2   886.00 75.97
     3   886.00 75.97
     4   886.00 75.97
     5   886.00 75.97
     6   886.00 75.97
     7   886.00 75.97
     8   886.00 75.97
     9   886.00 75.97
    10   886.00 75.97
    11   886.00 75.97
    12   886.00 75.97
    13   886.00 75.97
    14   886.00 75.97
    15   886.00 75.97
    16   886.00 75.97
    17   886.00 75.97
    18   886.00 75.97
19     0.00
     1   616.82 75.10
     2   616.82 75.10
     3   616.82 75.10
     4   616.82 75.10
     5   616.82 75.10
     6   616.82 75.10
     7   616.82 75.10
     8   616.82 75.10
     9   616.82 75.10
    10   616.82 75.10
    11   616.82 75.10
    12   616.82 75.10
    13   616.82 75.10
    14   616.82 75.10
    15   616.82 75.10
    16   616.82 75.10
    17   616.82 75.10
    18   616.82 75.10
20     0.00
     1   465.44 75.14
     2   465.44 75.14
     3   465.44 75.14
```

```
     4   465.44 75.14
     5   465.44 75.14
     6   465.44 75.14
     7   465.44 75.14
     8   465.44 75.14
     9   465.44 75.14
    10   465.44 75.14
    11   465.44 75.14
    12   465.44 75.14
    13   465.44 75.14
    14   465.44 75.14
    15   465.44 75.14
    16   465.44 75.14
    17   465.44 75.14
    18   465.44 75.14
21     0.00
     1   346.40 74.67
     2   346.40 74.67
     3   346.40 74.67
     4   346.40 74.67
     5   346.40 74.67
     6   346.40 74.67
     7   346.40 74.67
     8   346.40 74.67
     9   346.40 74.67
    10   346.40 74.67
    11   346.40 74.67
    12   346.40 74.67
    13   346.40 74.67
    14   346.40 74.67
    15   346.40 74.67
    16   346.40 74.67
    17   346.40 74.67
    18   346.40 74.67
22     0.00
     1   347.04 74.52
     2   347.04 74.52
     3   347.04 74.52
     4   347.04 74.52
     5   347.04 74.52
     6   347.04 74.52
     7   347.04 74.52
     8   347.04 74.52
     9   347.04 74.52
    10   347.04 74.52
    11   347.04 74.52
    12   347.04 74.52
    13   347.04 74.52
    14   347.04 74.52
    15   347.04 74.52
    16   347.04 74.52
    17   347.04 74.52
    18   347.04 74.52
23     0.00
```

```
      1   260.91 75.06
      2   260.91 75.06
      3   260.91 75.06
      4   260.91 75.06
      5   260.91 75.06
      6   260.91 75.06
      7   260.91 75.06
      8   260.91 75.06
      9   260.91 75.06
     10   260.91 75.06
     11   260.91 75.06
     12   260.91 75.06
     13   260.91 75.06
     14   260.91 75.06
     15   260.91 75.06
     16   260.91 75.06
     17   260.91 75.06
     18   260.91 75.06
24     0.00
      1   202.12 76.00
      2   202.12 76.00
      3   202.12 76.00
      4   202.12 76.00
      5   202.12 76.00
      6   202.12 76.00
      7   202.12 76.00
      8   202.12 76.00
      9   202.12 76.00
     10   202.12 76.00
     11   202.12 76.00
     12   202.12 76.00
     13   202.12 76.00
     14   202.12 76.00
     15   202.12 76.00
     16   202.12 76.00
     17   202.12 76.00
     18   202.12 76.00
```

```
'WB24fromWC, TOGGExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_1                                 ' 'AG' 581350.03 4194737.17 581336.06 4194736.29
-1.64    9.68
    2 1
'Link_2                                 ' 'AG' 581336.06 4194736.29 581315.10 4194735.51
-1.25    9.68
    3 1
'Link_3                                 ' 'AG' 581315.10 4194735.51 581296.81 4194734.19
0.18    9.68
    4 1
'Link_4                                 ' 'AG' 581296.81 4194734.19 581278.10 4194733.83
1.58    9.68
    5 1
'Link_5                                 ' 'AG' 581278.10 4194733.83 581256.66 4194733.99
2.27    9.68
    6 1
'Link_6                                 ' 'AG' 581256.66 4194733.99 581239.36 4194734.53
3.12    9.68
    7 1
'Link_7                                 ' 'AG' 581239.36 4194734.53 581223.40 4194735.14
3.83    9.68
    8 1
'Link_8                                 ' 'AG' 581223.40 4194735.14 581201.76 4194736.28
4.41    9.68
    9 1
'Link_9                                 ' 'AG' 581201.76 4194736.28 581187.97 4194738.09
5.07    9.68
    10 1
'Link_10                                ' 'AG' 581187.97 4194738.09 581170.61 4194739.90
6.62    9.68
    11 1
'Link_11                                ' 'AG' 581170.61 4194739.90 581146.74 4194743.11
8.83    9.68
    12 1
'Link_12                                ' 'AG' 581146.74 4194743.11 581128.69 4194746.38
10.00    9.68
    13 1
'Link_13                                ' 'AG' 581128.69 4194746.38 581109.38 4194750.70
10.00    9.68
    14 1
'Link_14                                ' 'AG' 581109.38 4194750.70 581089.22 4194754.93
```

```
10.00    9.68
    15 1
'Link_15                                ' 'AG' 581089.22 4194754.93 581075.77 4194758.64
10.00    9.68
    16 1
'Link_16                                ' 'AG' 581075.77 4194758.64 581065.15 4194762.03
10.00    9.68
    17 1
'Link_17                                ' 'AG' 581065.15 4194762.03 581029.34 4194771.80
10.00    9.68
    18 1
'Link_18                                ' 'AG' 581029.34 4194771.80 580998.75 4194780.04
10.00    9.68
 1     0.00
      1   111.65 72.44
      2   111.65 72.44
      3   111.65 72.44
      4   111.65 72.44
      5   111.65 72.44
      6   111.65 72.44
      7   111.65 72.44
      8   111.65 72.44
      9   111.65 72.44
     10   111.65 72.44
     11   111.65 72.44
     12   111.65 72.44
     13   111.65 72.44
     14   111.65 72.44
     15   111.65 72.44
     16   111.65 72.44
     17   111.65 72.44
     18   111.65 72.44
 2     0.00
      1    36.18 74.29
      2    36.18 74.29
      3    36.18 74.29
      4    36.18 74.29
      5    36.18 74.29
      6    36.18 74.29
      7    36.18 74.29
      8    36.18 74.29
      9    36.18 74.29
     10    36.18 74.29
     11    36.18 74.29
     12    36.18 74.29
     13    36.18 74.29
     14    36.18 74.29
     15    36.18 74.29
     16    36.18 74.29
     17    36.18 74.29
     18    36.18 74.29
 3     0.00
      1    35.55 100.15
      2    35.55 100.15
```

```
      3    35.55 100.15
      4    35.55 100.15
      5    35.55 100.15
      6    35.55 100.15
      7    35.55 100.15
      8    35.55 100.15
      9    35.55 100.15
     10    35.55 100.15
     11    35.55 100.15
     12    35.55 100.15
     13    35.55 100.15
     14    35.55 100.15
     15    35.55 100.15
     16    35.55 100.15
     17    35.55 100.15
     18    35.55 100.15
4     0.00
      1    16.62 79.63
      2    16.62 79.63
      3    16.62 79.63
      4    16.62 79.63
      5    16.62 79.63
      6    16.62 79.63
      7    16.62 79.63
      8    16.62 79.63
      9    16.62 79.63
     10    16.62 79.63
     11    16.62 79.63
     12    16.62 79.63
     13    16.62 79.63
     14    16.62 79.63
     15    16.62 79.63
     16    16.62 79.63
     17    16.62 79.63
     18    16.62 79.63
5     0.00
      1    47.01 77.16
      2    47.01 77.16
      3    47.01 77.16
      4    47.01 77.16
      5    47.01 77.16
      6    47.01 77.16
      7    47.01 77.16
      8    47.01 77.16
      9    47.01 77.16
     10    47.01 77.16
     11    47.01 77.16
     12    47.01 77.16
     13    47.01 77.16
     14    47.01 77.16
     15    47.01 77.16
     16    47.01 77.16
     17    47.01 77.16
     18    47.01 77.16
```

```
6     0.00
     1    86.80 79.84
     2    86.80 79.84
     3    86.80 79.84
     4    86.80 79.84
     5    86.80 79.84
     6    86.80 79.84
     7    86.80 79.84
     8    86.80 79.84
     9    86.80 79.84
    10    86.80 79.84
    11    86.80 79.84
    12    86.80 79.84
    13    86.80 79.84
    14    86.80 79.84
    15    86.80 79.84
    16    86.80 79.84
    17    86.80 79.84
    18    86.80 79.84
7     0.00
     1   394.01 72.46
     2   394.01 72.46
     3   394.01 72.46
     4   394.01 72.46
     5   394.01 72.46
     6   394.01 72.46
     7   394.01 72.46
     8   394.01 72.46
     9   394.01 72.46
    10   394.01 72.46
    11   394.01 72.46
    12   394.01 72.46
    13   394.01 72.46
    14   394.01 72.46
    15   394.01 72.46
    16   394.01 72.46
    17   394.01 72.46
    18   394.01 72.46
8     0.00
     1   836.35 71.95
     2   836.35 71.95
     3   836.35 71.95
     4   836.35 71.95
     5   836.35 71.95
     6   836.35 71.95
     7   836.35 71.95
     8   836.35 71.95
     9   836.35 71.95
    10   836.35 71.95
    11   836.35 71.95
    12   836.35 71.95
    13   836.35 71.95
    14   836.35 71.95
    15   836.35 71.95
```

```
    16   836.35 71.95
    17   836.35 71.95
    18   836.35 71.95
9     0.00
     1   756.92 74.88
     2   756.92 74.88
     3   756.92 74.88
     4   756.92 74.88
     5   756.92 74.88
     6   756.92 74.88
     7   756.92 74.88
     8   756.92 74.88
     9   756.92 74.88
    10   756.92 74.88
    11   756.92 74.88
    12   756.92 74.88
    13   756.92 74.88
    14   756.92 74.88
    15   756.92 74.88
    16   756.92 74.88
    17   756.92 74.88
    18   756.92 74.88
10     0.00
     1   454.15 75.60
     2   454.15 75.60
     3   454.15 75.60
     4   454.15 75.60
     5   454.15 75.60
     6   454.15 75.60
     7   454.15 75.60
     8   454.15 75.60
     9   454.15 75.60
    10   454.15 75.60
    11   454.15 75.60
    12   454.15 75.60
    13   454.15 75.60
    14   454.15 75.60
    15   454.15 75.60
    16   454.15 75.60
    17   454.15 75.60
    18   454.15 75.60
11     0.00
     1   489.70 74.54
     2   489.70 74.54
     3   489.70 74.54
     4   489.70 74.54
     5   489.70 74.54
     6   489.70 74.54
     7   489.70 74.54
     8   489.70 74.54
     9   489.70 74.54
    10   489.70 74.54
    11   489.70 74.54
    12   489.70 74.54
```

```
    13   489.70 74.54
    14   489.70 74.54
    15   489.70 74.54
    16   489.70 74.54
    17   489.70 74.54
    18   489.70 74.54
12     0.00
     1   620.57 74.05
     2   620.57 74.05
     3   620.57 74.05
     4   620.57 74.05
     5   620.57 74.05
     6   620.57 74.05
     7   620.57 74.05
     8   620.57 74.05
     9   620.57 74.05
    10   620.57 74.05
    11   620.57 74.05
    12   620.57 74.05
    13   620.57 74.05
    14   620.57 74.05
    15   620.57 74.05
    16   620.57 74.05
    17   620.57 74.05
    18   620.57 74.05
13     0.00
     1   653.11 72.78
     2   653.11 72.78
     3   653.11 72.78
     4   653.11 72.78
     5   653.11 72.78
     6   653.11 72.78
     7   653.11 72.78
     8   653.11 72.78
     9   653.11 72.78
    10   653.11 72.78
    11   653.11 72.78
    12   653.11 72.78
    13   653.11 72.78
    14   653.11 72.78
    15   653.11 72.78
    16   653.11 72.78
    17   653.11 72.78
    18   653.11 72.78
14     0.00
     1   640.80 73.52
     2   640.80 73.52
     3   640.80 73.52
     4   640.80 73.52
     5   640.80 73.52
     6   640.80 73.52
     7   640.80 73.52
     8   640.80 73.52
     9   640.80 73.52
```

```
    10   640.80 73.52
    11   640.80 73.52
    12   640.80 73.52
    13   640.80 73.52
    14   640.80 73.52
    15   640.80 73.52
    16   640.80 73.52
    17   640.80 73.52
    18   640.80 73.52
15     0.00
     1   751.03 72.77
     2   751.03 72.77
     3   751.03 72.77
     4   751.03 72.77
     5   751.03 72.77
     6   751.03 72.77
     7   751.03 72.77
     8   751.03 72.77
     9   751.03 72.77
    10   751.03 72.77
    11   751.03 72.77
    12   751.03 72.77
    13   751.03 72.77
    14   751.03 72.77
    15   751.03 72.77
    16   751.03 72.77
    17   751.03 72.77
    18   751.03 72.77
16     0.00
     1   770.87 73.39
     2   770.87 73.39
     3   770.87 73.39
     4   770.87 73.39
     5   770.87 73.39
     6   770.87 73.39
     7   770.87 73.39
     8   770.87 73.39
     9   770.87 73.39
    10   770.87 73.39
    11   770.87 73.39
    12   770.87 73.39
    13   770.87 73.39
    14   770.87 73.39
    15   770.87 73.39
    16   770.87 73.39
    17   770.87 73.39
    18   770.87 73.39
17     0.00
     1   794.22 74.73
     2   794.22 74.73
     3   794.22 74.73
     4   794.22 74.73
     5   794.22 74.73
     6   794.22 74.73
```

```
     7   794.22 74.73
     8   794.22 74.73
     9   794.22 74.73
    10   794.22 74.73
    11   794.22 74.73
    12   794.22 74.73
    13   794.22 74.73
    14   794.22 74.73
    15   794.22 74.73
    16   794.22 74.73
    17   794.22 74.73
    18   794.22 74.73
18     0.00
     1   886.00 73.52
     2   886.00 73.52
     3   886.00 73.52
     4   886.00 73.52
     5   886.00 73.52
     6   886.00 73.52
     7   886.00 73.52
     8   886.00 73.52
     9   886.00 73.52
    10   886.00 73.52
    11   886.00 73.52
    12   886.00 73.52
    13   886.00 73.52
    14   886.00 73.52
    15   886.00 73.52
    16   886.00 73.52
    17   886.00 73.52
    18   886.00 73.52
19     0.00
     1   616.82 72.57
     2   616.82 72.57
     3   616.82 72.57
     4   616.82 72.57
     5   616.82 72.57
     6   616.82 72.57
     7   616.82 72.57
     8   616.82 72.57
     9   616.82 72.57
    10   616.82 72.57
    11   616.82 72.57
    12   616.82 72.57
    13   616.82 72.57
    14   616.82 72.57
    15   616.82 72.57
    16   616.82 72.57
    17   616.82 72.57
    18   616.82 72.57
20     0.00
     1   465.44 72.73
     2   465.44 72.73
     3   465.44 72.73
```

```
     4   465.44 72.73
     5   465.44 72.73
     6   465.44 72.73
     7   465.44 72.73
     8   465.44 72.73
     9   465.44 72.73
    10   465.44 72.73
    11   465.44 72.73
    12   465.44 72.73
    13   465.44 72.73
    14   465.44 72.73
    15   465.44 72.73
    16   465.44 72.73
    17   465.44 72.73
    18   465.44 72.73
21     0.00
     1   346.40 71.91
     2   346.40 71.91
     3   346.40 71.91
     4   346.40 71.91
     5   346.40 71.91
     6   346.40 71.91
     7   346.40 71.91
     8   346.40 71.91
     9   346.40 71.91
    10   346.40 71.91
    11   346.40 71.91
    12   346.40 71.91
    13   346.40 71.91
    14   346.40 71.91
    15   346.40 71.91
    16   346.40 71.91
    17   346.40 71.91
    18   346.40 71.91
22     0.00
     1   347.04 71.74
     2   347.04 71.74
     3   347.04 71.74
     4   347.04 71.74
     5   347.04 71.74
     6   347.04 71.74
     7   347.04 71.74
     8   347.04 71.74
     9   347.04 71.74
    10   347.04 71.74
    11   347.04 71.74
    12   347.04 71.74
    13   347.04 71.74
    14   347.04 71.74
    15   347.04 71.74
    16   347.04 71.74
    17   347.04 71.74
    18   347.04 71.74
23     0.00
```

```
     1   260.91 72.22
     2   260.91 72.22
     3   260.91 72.22
     4   260.91 72.22
     5   260.91 72.22
     6   260.91 72.22
     7   260.91 72.22
     8   260.91 72.22
     9   260.91 72.22
    10   260.91 72.22
    11   260.91 72.22
    12   260.91 72.22
    13   260.91 72.22
    14   260.91 72.22
    15   260.91 72.22
    16   260.91 72.22
    17   260.91 72.22
    18   260.91 72.22
24     0.00
     1   202.12 72.95
     2   202.12 72.95
     3   202.12 72.95
     4   202.12 72.95
     5   202.12 72.95
     6   202.12 72.95
     7   202.12 72.95
     8   202.12 72.95
     9   202.12 72.95
    10   202.12 72.95
    11   202.12 72.95
    12   202.12 72.95
    13   202.12 72.95
    14   202.12 72.95
    15   202.12 72.95
    16   202.12 72.95
    17   202.12 72.95
    18   202.12 72.95
```

```
'WB24fromWC, PMNonExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                  ' 581104.13 4194395.51   -5.74
'R2_A_1                                  ' 581109.13 4194395.63   -5.82
'R3_A_1                                  ' 581114.13 4194395.75   -5.90
'R4_A_1                                  ' 581099.01 4194400.39   -5.61
'R5_A_1                                  ' 581104.01 4194400.51   -5.70
'R6_A_1                                  ' 581109.01 4194400.63   -5.78
'R7_A_1                                  ' 581114.01 4194400.75   -5.88
'R8_A_1                                  ' 581119.01 4194400.86   -5.96
'R9_A_1                                  ' 581093.89 4194405.27   -5.52
'R10_A_1                                 ' 581098.89 4194405.39   -5.59
'R11_A_1                                 ' 581103.89 4194405.51   -5.69
'R12_A_1                                 ' 581108.89 4194405.62   -5.79
'R13_A_1                                 ' 581113.89 4194405.74   -5.89
'R14_A_1                                 ' 581118.89 4194405.86   -5.98
'R15_A_1                                 ' 581093.77 4194410.27   -5.50
'R16_A_1                                 ' 581098.77 4194410.38   -5.56
'R17_A_1                                 ' 581103.77 4194410.50   -5.64
'R18_A_1                                 ' 581108.77 4194410.62   -5.73
'R19_A_1                                 ' 581113.77 4194410.74   -5.81
'R20_A_1                                 ' 581118.77 4194410.86   -5.90
'R21_A_1                                 ' 581123.76 4194410.98   -5.99
'R22_A_1                                 ' 581093.65 4194415.26   -5.48
'R23_A_1                                 ' 581098.65 4194415.38   -5.53
'R24_A_1                                 ' 581103.65 4194415.50   -5.58
'R25_A_1                                 ' 581108.65 4194415.62   -5.64
'R26_A_1                                 ' 581113.65 4194415.74   -5.71
'R27_A_1                                 ' 581118.65 4194415.86   -5.80
'R28_A_1                                 ' 581123.64 4194415.98   -5.89
'R29_A_1                                 ' 581128.64 4194416.10   -5.99
'R30_A_1                                 ' 581133.64 4194416.22   -6.09
'R31_A_1                                 ' 581138.64 4194416.34   -6.19
'R32_A_1                                 ' 581093.53 4194420.26   -5.41
'R33_A_1                                 ' 581098.53 4194420.38   -5.46
'R34_A_1                                 ' 581103.53 4194420.50   -5.51
'R35_A_1                                 ' 581108.53 4194420.62   -5.57
'R36_A_1                                 ' 581113.53 4194420.74   -5.64
'R37_A_1                                 ' 581118.53 4194420.86   -5.73
'R38_A_1                                 ' 581123.53 4194420.98   -5.83
'R39_A_1                                 ' 581128.52 4194421.10   -5.94
'R40_A_1                                 ' 581133.52 4194421.22   -6.05
'R41_A_1                                 ' 581138.52 4194421.34   -6.16
'R42_A_1                                 ' 581143.52 4194421.46   -6.26
'R43_A_1                                 ' 581148.52 4194421.58   -6.36
'R44_A_1                                 ' 581093.41 4194425.26   -5.31
'R45_A_1                                 ' 581098.41 4194425.38   -5.36
'R46_A_1                                 ' 581103.41 4194425.50   -5.42
'R47_A_1                                 ' 581108.41 4194425.62   -5.50
'R48_A_1                                 ' 581113.41 4194425.74   -5.59
'R49_A_1                                 ' 581118.41 4194425.86   -5.69
'R50_A_1                                 ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_1                                 ' 'AG' 581350.03 4194737.17 581336.06 4194736.29
-1.64    9.68
    2 1
'Link_2                                 ' 'AG' 581336.06 4194736.29 581315.10 4194735.51
-1.25    9.68
    3 1
'Link_3                                 ' 'AG' 581315.10 4194735.51 581296.81 4194734.19
0.18    9.68
    4 1
'Link_4                                 ' 'AG' 581296.81 4194734.19 581278.10 4194733.83
1.58    9.68
    5 1
'Link_5                                 ' 'AG' 581278.10 4194733.83 581256.66 4194733.99
2.27    9.68
    6 1
'Link_6                                 ' 'AG' 581256.66 4194733.99 581239.36 4194734.53
3.12    9.68
    7 1
'Link_7                                 ' 'AG' 581239.36 4194734.53 581223.40 4194735.14
3.83    9.68
    8 1
'Link_8                                 ' 'AG' 581223.40 4194735.14 581201.76 4194736.28
4.41    9.68
    9 1
'Link_9                                 ' 'AG' 581201.76 4194736.28 581187.97 4194738.09
5.07    9.68
    10 1
'Link_10                                ' 'AG' 581187.97 4194738.09 581170.61 4194739.90
6.62    9.68
    11 1
'Link_11                                ' 'AG' 581170.61 4194739.90 581146.74 4194743.11
8.83    9.68
    12 1
'Link_12                                ' 'AG' 581146.74 4194743.11 581128.69 4194746.38
10.00    9.68
    13 1
'Link_13                                ' 'AG' 581128.69 4194746.38 581109.38 4194750.70
10.00    9.68
    14 1
'Link_14                                ' 'AG' 581109.38 4194750.70 581089.22 4194754.93
```

```
10.00    9.68
    15 1
'Link_15                                ' 'AG' 581089.22 4194754.93 581075.77 4194758.64
10.00    9.68
    16 1
'Link_16                                ' 'AG' 581075.77 4194758.64 581065.15 4194762.03
10.00    9.68
    17 1
'Link_17                                ' 'AG' 581065.15 4194762.03 581029.34 4194771.80
10.00    9.68
    18 1
'Link_18                                ' 'AG' 581029.34 4194771.80 580998.75 4194780.04
10.00    9.68
 1     0.00
      1   123.20 20.16
      2   123.20 20.16
      3   123.20 20.16
      4   123.20 20.16
      5   123.20 20.16
      6   123.20 20.16
      7   123.20 20.16
      8   123.20 20.16
      9   123.20 20.16
     10   123.20 20.16
     11   123.20 20.16
     12   123.20 20.16
     13   123.20 20.16
     14   123.20 20.16
     15   123.20 20.16
     16   123.20 20.16
     17   123.20 20.16
     18   123.20 20.16
 2     0.00
      1    45.88 23.07
      2    45.88 23.07
      3    45.88 23.07
      4    45.88 23.07
      5    45.88 23.07
      6    45.88 23.07
      7    45.88 23.07
      8    45.88 23.07
      9    45.88 23.07
     10    45.88 23.07
     11    45.88 23.07
     12    45.88 23.07
     13    45.88 23.07
     14    45.88 23.07
     15    45.88 23.07
     16    45.88 23.07
     17    45.88 23.07
     18    45.88 23.07
 3     0.00
      1    48.28 23.30
      2    48.28 23.30
```

```
      3    48.28 23.30
      4    48.28 23.30
      5    48.28 23.30
      6    48.28 23.30
      7    48.28 23.30
      8    48.28 23.30
      9    48.28 23.30
     10    48.28 23.30
     11    48.28 23.30
     12    48.28 23.30
     13    48.28 23.30
     14    48.28 23.30
     15    48.28 23.30
     16    48.28 23.30
     17    48.28 23.30
     18    48.28 23.30
4     0.00
      1    25.82 25.05
      2    25.82 25.05
      3    25.82 25.05
      4    25.82 25.05
      5    25.82 25.05
      6    25.82 25.05
      7    25.82 25.05
      8    25.82 25.05
      9    25.82 25.05
     10    25.82 25.05
     11    25.82 25.05
     12    25.82 25.05
     13    25.82 25.05
     14    25.82 25.05
     15    25.82 25.05
     16    25.82 25.05
     17    25.82 25.05
     18    25.82 25.05
5     0.00
      1    54.22 20.91
      2    54.22 20.91
      3    54.22 20.91
      4    54.22 20.91
      5    54.22 20.91
      6    54.22 20.91
      7    54.22 20.91
      8    54.22 20.91
      9    54.22 20.91
     10    54.22 20.91
     11    54.22 20.91
     12    54.22 20.91
     13    54.22 20.91
     14    54.22 20.91
     15    54.22 20.91
     16    54.22 20.91
     17    54.22 20.91
     18    54.22 20.91
```

```
6     0.00
     1    94.53 20.02
     2    94.53 20.02
     3    94.53 20.02
     4    94.53 20.02
     5    94.53 20.02
     6    94.53 20.02
     7    94.53 20.02
     8    94.53 20.02
     9    94.53 20.02
    10    94.53 20.02
    11    94.53 20.02
    12    94.53 20.02
    13    94.53 20.02
    14    94.53 20.02
    15    94.53 20.02
    16    94.53 20.02
    17    94.53 20.02
    18    94.53 20.02
7     0.00
     1   407.04 18.76
     2   407.04 18.76
     3   407.04 18.76
     4   407.04 18.76
     5   407.04 18.76
     6   407.04 18.76
     7   407.04 18.76
     8   407.04 18.76
     9   407.04 18.76
    10   407.04 18.76
    11   407.04 18.76
    12   407.04 18.76
    13   407.04 18.76
    14   407.04 18.76
    15   407.04 18.76
    16   407.04 18.76
    17   407.04 18.76
    18   407.04 18.76
8     0.00
     1   849.08 18.29
     2   849.08 18.29
     3   849.08 18.29
     4   849.08 18.29
     5   849.08 18.29
     6   849.08 18.29
     7   849.08 18.29
     8   849.08 18.29
     9   849.08 18.29
    10   849.08 18.29
    11   849.08 18.29
    12   849.08 18.29
    13   849.08 18.29
    14   849.08 18.29
    15   849.08 18.29
```

```
    16   849.08 18.29
    17   849.08 18.29
    18   849.08 18.29
9     0.00
     1   774.05 18.50
     2   774.05 18.50
     3   774.05 18.50
     4   774.05 18.50
     5   774.05 18.50
     6   774.05 18.50
     7   774.05 18.50
     8   774.05 18.50
     9   774.05 18.50
    10   774.05 18.50
    11   774.05 18.50
    12   774.05 18.50
    13   774.05 18.50
    14   774.05 18.50
    15   774.05 18.50
    16   774.05 18.50
    17   774.05 18.50
    18   774.05 18.50
10    0.00
     1   472.49 19.04
     2   472.49 19.04
     3   472.49 19.04
     4   472.49 19.04
     5   472.49 19.04
     6   472.49 19.04
     7   472.49 19.04
     8   472.49 19.04
     9   472.49 19.04
    10   472.49 19.04
    11   472.49 19.04
    12   472.49 19.04
    13   472.49 19.04
    14   472.49 19.04
    15   472.49 19.04
    16   472.49 19.04
    17   472.49 19.04
    18   472.49 19.04
11    0.00
     1   506.74 18.88
     2   506.74 18.88
     3   506.74 18.88
     4   506.74 18.88
     5   506.74 18.88
     6   506.74 18.88
     7   506.74 18.88
     8   506.74 18.88
     9   506.74 18.88
    10   506.74 18.88
    11   506.74 18.88
    12   506.74 18.88
```

```
    13   506.74 18.88
    14   506.74 18.88
    15   506.74 18.88
    16   506.74 18.88
    17   506.74 18.88
    18   506.74 18.88
12     0.00
     1   638.75 18.75
     2   638.75 18.75
     3   638.75 18.75
     4   638.75 18.75
     5   638.75 18.75
     6   638.75 18.75
     7   638.75 18.75
     8   638.75 18.75
     9   638.75 18.75
    10   638.75 18.75
    11   638.75 18.75
    12   638.75 18.75
    13   638.75 18.75
    14   638.75 18.75
    15   638.75 18.75
    16   638.75 18.75
    17   638.75 18.75
    18   638.75 18.75
13     0.00
     1   669.00 18.67
     2   669.00 18.67
     3   669.00 18.67
     4   669.00 18.67
     5   669.00 18.67
     6   669.00 18.67
     7   669.00 18.67
     8   669.00 18.67
     9   669.00 18.67
    10   669.00 18.67
    11   669.00 18.67
    12   669.00 18.67
    13   669.00 18.67
    14   669.00 18.67
    15   669.00 18.67
    16   669.00 18.67
    17   669.00 18.67
    18   669.00 18.67
14     0.00
     1   657.00 18.69
     2   657.00 18.69
     3   657.00 18.69
     4   657.00 18.69
     5   657.00 18.69
     6   657.00 18.69
     7   657.00 18.69
     8   657.00 18.69
     9   657.00 18.69
```

```
    10   657.00 18.69
    11   657.00 18.69
    12   657.00 18.69
    13   657.00 18.69
    14   657.00 18.69
    15   657.00 18.69
    16   657.00 18.69
    17   657.00 18.69
    18   657.00 18.69
15     0.00
     1   764.38 18.51
     2   764.38 18.51
     3   764.38 18.51
     4   764.38 18.51
     5   764.38 18.51
     6   764.38 18.51
     7   764.38 18.51
     8   764.38 18.51
     9   764.38 18.51
    10   764.38 18.51
    11   764.38 18.51
    12   764.38 18.51
    13   764.38 18.51
    14   764.38 18.51
    15   764.38 18.51
    16   764.38 18.51
    17   764.38 18.51
    18   764.38 18.51
16     0.00
     1   781.25 18.37
     2   781.25 18.37
     3   781.25 18.37
     4   781.25 18.37
     5   781.25 18.37
     6   781.25 18.37
     7   781.25 18.37
     8   781.25 18.37
     9   781.25 18.37
    10   781.25 18.37
    11   781.25 18.37
    12   781.25 18.37
    13   781.25 18.37
    14   781.25 18.37
    15   781.25 18.37
    16   781.25 18.37
    17   781.25 18.37
    18   781.25 18.37
17     0.00
     1   807.58 18.48
     2   807.58 18.48
     3   807.58 18.48
     4   807.58 18.48
     5   807.58 18.48
     6   807.58 18.48
```

```
     7   807.58 18.48
     8   807.58 18.48
     9   807.58 18.48
    10   807.58 18.48
    11   807.58 18.48
    12   807.58 18.48
    13   807.58 18.48
    14   807.58 18.48
    15   807.58 18.48
    16   807.58 18.48
    17   807.58 18.48
    18   807.58 18.48
18     0.00
     1   897.75 18.32
     2   897.75 18.32
     3   897.75 18.32
     4   897.75 18.32
     5   897.75 18.32
     6   897.75 18.32
     7   897.75 18.32
     8   897.75 18.32
     9   897.75 18.32
    10   897.75 18.32
    11   897.75 18.32
    12   897.75 18.32
    13   897.75 18.32
    14   897.75 18.32
    15   897.75 18.32
    16   897.75 18.32
    17   897.75 18.32
    18   897.75 18.32
19     0.00
     1   626.21 18.39
     2   626.21 18.39
     3   626.21 18.39
     4   626.21 18.39
     5   626.21 18.39
     6   626.21 18.39
     7   626.21 18.39
     8   626.21 18.39
     9   626.21 18.39
    10   626.21 18.39
    11   626.21 18.39
    12   626.21 18.39
    13   626.21 18.39
    14   626.21 18.39
    15   626.21 18.39
    16   626.21 18.39
    17   626.21 18.39
    18   626.21 18.39
20     0.00
     1   469.80 18.26
     2   469.80 18.26
     3   469.80 18.26
```

```
     4   469.80 18.26
     5   469.80 18.26
     6   469.80 18.26
     7   469.80 18.26
     8   469.80 18.26
     9   469.80 18.26
    10   469.80 18.26
    11   469.80 18.26
    12   469.80 18.26
    13   469.80 18.26
    14   469.80 18.26
    15   469.80 18.26
    16   469.80 18.26
    17   469.80 18.26
    18   469.80 18.26
21     0.00
     1   355.72 18.64
     2   355.72 18.64
     3   355.72 18.64
     4   355.72 18.64
     5   355.72 18.64
     6   355.72 18.64
     7   355.72 18.64
     8   355.72 18.64
     9   355.72 18.64
    10   355.72 18.64
    11   355.72 18.64
    12   355.72 18.64
    13   355.72 18.64
    14   355.72 18.64
    15   355.72 18.64
    16   355.72 18.64
    17   355.72 18.64
    18   355.72 18.64
22     0.00
     1   357.03 18.78
     2   357.03 18.78
     3   357.03 18.78
     4   357.03 18.78
     5   357.03 18.78
     6   357.03 18.78
     7   357.03 18.78
     8   357.03 18.78
     9   357.03 18.78
    10   357.03 18.78
    11   357.03 18.78
    12   357.03 18.78
    13   357.03 18.78
    14   357.03 18.78
    15   357.03 18.78
    16   357.03 18.78
    17   357.03 18.78
    18   357.03 18.78
23     0.00
```

```
      1   268.35 18.80
      2   268.35 18.80
      3   268.35 18.80
      4   268.35 18.80
      5   268.35 18.80
      6   268.35 18.80
      7   268.35 18.80
      8   268.35 18.80
      9   268.35 18.80
     10   268.35 18.80
     11   268.35 18.80
     12   268.35 18.80
     13   268.35 18.80
     14   268.35 18.80
     15   268.35 18.80
     16   268.35 18.80
     17   268.35 18.80
     18   268.35 18.80
24     0.00
      1   205.83 18.51
      2   205.83 18.51
      3   205.83 18.51
      4   205.83 18.51
      5   205.83 18.51
      6   205.83 18.51
      7   205.83 18.51
      8   205.83 18.51
      9   205.83 18.51
     10   205.83 18.51
     11   205.83 18.51
     12   205.83 18.51
     13   205.83 18.51
     14   205.83 18.51
     15   205.83 18.51
     16   205.83 18.51
     17   205.83 18.51
     18   205.83 18.51
```

```
'WB24fromWC, PMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_1                                 ' 'AG' 581350.03 4194737.17 581336.06 4194736.29
-1.64    9.68
    2 1
'Link_2                                 ' 'AG' 581336.06 4194736.29 581315.10 4194735.51
-1.25    9.68
    3 1
'Link_3                                 ' 'AG' 581315.10 4194735.51 581296.81 4194734.19
0.18    9.68
    4 1
'Link_4                                 ' 'AG' 581296.81 4194734.19 581278.10 4194733.83
1.58    9.68
    5 1
'Link_5                                 ' 'AG' 581278.10 4194733.83 581256.66 4194733.99
2.27    9.68
    6 1
'Link_6                                 ' 'AG' 581256.66 4194733.99 581239.36 4194734.53
3.12    9.68
    7 1
'Link_7                                 ' 'AG' 581239.36 4194734.53 581223.40 4194735.14
3.83    9.68
    8 1
'Link_8                                 ' 'AG' 581223.40 4194735.14 581201.76 4194736.28
4.41    9.68
    9 1
'Link_9                                 ' 'AG' 581201.76 4194736.28 581187.97 4194738.09
5.07    9.68
    10 1
'Link_10                                ' 'AG' 581187.97 4194738.09 581170.61 4194739.90
6.62    9.68
    11 1
'Link_11                                ' 'AG' 581170.61 4194739.90 581146.74 4194743.11
8.83    9.68
    12 1
'Link_12                                ' 'AG' 581146.74 4194743.11 581128.69 4194746.38
10.00    9.68
    13 1
'Link_13                                ' 'AG' 581128.69 4194746.38 581109.38 4194750.70
10.00    9.68
    14 1
'Link_14                                ' 'AG' 581109.38 4194750.70 581089.22 4194754.93
```

```
10.00    9.68
    15 1
'Link_15                                ' 'AG' 581089.22 4194754.93 581075.77 4194758.64
10.00    9.68
    16 1
'Link_16                                ' 'AG' 581075.77 4194758.64 581065.15 4194762.03
10.00    9.68
    17 1
'Link_17                                ' 'AG' 581065.15 4194762.03 581029.34 4194771.80
10.00    9.68
    18 1
'Link_18                                ' 'AG' 581029.34 4194771.80 580998.75 4194780.04
10.00    9.68
 1     0.00
      1   123.20 7.66
      2   123.20 7.66
      3   123.20 7.66
      4   123.20 7.66
      5   123.20 7.66
      6   123.20 7.66
      7   123.20 7.66
      8   123.20 7.66
      9   123.20 7.66
     10   123.20 7.66
     11   123.20 7.66
     12   123.20 7.66
     13   123.20 7.66
     14   123.20 7.66
     15   123.20 7.66
     16   123.20 7.66
     17   123.20 7.66
     18   123.20 7.66
 2     0.00
      1    45.88 13.49
      2    45.88 13.49
      3    45.88 13.49
      4    45.88 13.49
      5    45.88 13.49
      6    45.88 13.49
      7    45.88 13.49
      8    45.88 13.49
      9    45.88 13.49
     10    45.88 13.49
     11    45.88 13.49
     12    45.88 13.49
     13    45.88 13.49
     14    45.88 13.49
     15    45.88 13.49
     16    45.88 13.49
     17    45.88 13.49
     18    45.88 13.49
 3     0.00
      1    48.28 15.54
      2    48.28 15.54
```

```
      3    48.28 15.54
      4    48.28 15.54
      5    48.28 15.54
      6    48.28 15.54
      7    48.28 15.54
      8    48.28 15.54
      9    48.28 15.54
     10    48.28 15.54
     11    48.28 15.54
     12    48.28 15.54
     13    48.28 15.54
     14    48.28 15.54
     15    48.28 15.54
     16    48.28 15.54
     17    48.28 15.54
     18    48.28 15.54
4     0.00
      1    25.82 26.12
      2    25.82 26.12
      3    25.82 26.12
      4    25.82 26.12
      5    25.82 26.12
      6    25.82 26.12
      7    25.82 26.12
      8    25.82 26.12
      9    25.82 26.12
     10    25.82 26.12
     11    25.82 26.12
     12    25.82 26.12
     13    25.82 26.12
     14    25.82 26.12
     15    25.82 26.12
     16    25.82 26.12
     17    25.82 26.12
     18    25.82 26.12
5     0.00
      1    54.22 10.09
      2    54.22 10.09
      3    54.22 10.09
      4    54.22 10.09
      5    54.22 10.09
      6    54.22 10.09
      7    54.22 10.09
      8    54.22 10.09
      9    54.22 10.09
     10    54.22 10.09
     11    54.22 10.09
     12    54.22 10.09
     13    54.22 10.09
     14    54.22 10.09
     15    54.22 10.09
     16    54.22 10.09
     17    54.22 10.09
     18    54.22 10.09
```

```
6     0.00
     1    94.53 7.97
     2    94.53 7.97
     3    94.53 7.97
     4    94.53 7.97
     5    94.53 7.97
     6    94.53 7.97
     7    94.53 7.97
     8    94.53 7.97
     9    94.53 7.97
    10    94.53 7.97
    11    94.53 7.97
    12    94.53 7.97
    13    94.53 7.97
    14    94.53 7.97
    15    94.53 7.97
    16    94.53 7.97
    17    94.53 7.97
    18    94.53 7.97
7     0.00
     1   407.04 4.19
     2   407.04 4.19
     3   407.04 4.19
     4   407.04 4.19
     5   407.04 4.19
     6   407.04 4.19
     7   407.04 4.19
     8   407.04 4.19
     9   407.04 4.19
    10   407.04 4.19
    11   407.04 4.19
    12   407.04 4.19
    13   407.04 4.19
    14   407.04 4.19
    15   407.04 4.19
    16   407.04 4.19
    17   407.04 4.19
    18   407.04 4.19
8     0.00
     1   849.08 2.83
     2   849.08 2.83
     3   849.08 2.83
     4   849.08 2.83
     5   849.08 2.83
     6   849.08 2.83
     7   849.08 2.83
     8   849.08 2.83
     9   849.08 2.83
    10   849.08 2.83
    11   849.08 2.83
    12   849.08 2.83
    13   849.08 2.83
    14   849.08 2.83
    15   849.08 2.83
```

```
    16   849.08 2.83
    17   849.08 2.83
    18   849.08 2.83
9     0.00
     1   774.05 3.27
     2   774.05 3.27
     3   774.05 3.27
     4   774.05 3.27
     5   774.05 3.27
     6   774.05 3.27
     7   774.05 3.27
     8   774.05 3.27
     9   774.05 3.27
    10   774.05 3.27
    11   774.05 3.27
    12   774.05 3.27
    13   774.05 3.27
    14   774.05 3.27
    15   774.05 3.27
    16   774.05 3.27
    17   774.05 3.27
    18   774.05 3.27
10    0.00
     1   472.49 4.52
     2   472.49 4.52
     3   472.49 4.52
     4   472.49 4.52
     5   472.49 4.52
     6   472.49 4.52
     7   472.49 4.52
     8   472.49 4.52
     9   472.49 4.52
    10   472.49 4.52
    11   472.49 4.52
    12   472.49 4.52
    13   472.49 4.52
    14   472.49 4.52
    15   472.49 4.52
    16   472.49 4.52
    17   472.49 4.52
    18   472.49 4.52
11    0.00
     1   506.74 4.13
     2   506.74 4.13
     3   506.74 4.13
     4   506.74 4.13
     5   506.74 4.13
     6   506.74 4.13
     7   506.74 4.13
     8   506.74 4.13
     9   506.74 4.13
    10   506.74 4.13
    11   506.74 4.13
    12   506.74 4.13
```

```
    13   506.74 4.13
    14   506.74 4.13
    15   506.74 4.13
    16   506.74 4.13
    17   506.74 4.13
    18   506.74 4.13
12     0.00
     1   638.75 3.79
     2   638.75 3.79
     3   638.75 3.79
     4   638.75 3.79
     5   638.75 3.79
     6   638.75 3.79
     7   638.75 3.79
     8   638.75 3.79
     9   638.75 3.79
    10   638.75 3.79
    11   638.75 3.79
    12   638.75 3.79
    13   638.75 3.79
    14   638.75 3.79
    15   638.75 3.79
    16   638.75 3.79
    17   638.75 3.79
    18   638.75 3.79
13     0.00
     1   669.00 3.52
     2   669.00 3.52
     3   669.00 3.52
     4   669.00 3.52
     5   669.00 3.52
     6   669.00 3.52
     7   669.00 3.52
     8   669.00 3.52
     9   669.00 3.52
    10   669.00 3.52
    11   669.00 3.52
    12   669.00 3.52
    13   669.00 3.52
    14   669.00 3.52
    15   669.00 3.52
    16   669.00 3.52
    17   669.00 3.52
    18   669.00 3.52
14     0.00
     1   657.00 3.57
     2   657.00 3.57
     3   657.00 3.57
     4   657.00 3.57
     5   657.00 3.57
     6   657.00 3.57
     7   657.00 3.57
     8   657.00 3.57
     9   657.00 3.57
```

```
    10   657.00 3.57
    11   657.00 3.57
    12   657.00 3.57
    13   657.00 3.57
    14   657.00 3.57
    15   657.00 3.57
    16   657.00 3.57
    17   657.00 3.57
    18   657.00 3.57
15     0.00
     1   764.38 3.09
     2   764.38 3.09
     3   764.38 3.09
     4   764.38 3.09
     5   764.38 3.09
     6   764.38 3.09
     7   764.38 3.09
     8   764.38 3.09
     9   764.38 3.09
    10   764.38 3.09
    11   764.38 3.09
    12   764.38 3.09
    13   764.38 3.09
    14   764.38 3.09
    15   764.38 3.09
    16   764.38 3.09
    17   764.38 3.09
    18   764.38 3.09
16     0.00
     1   781.25 2.75
     2   781.25 2.75
     3   781.25 2.75
     4   781.25 2.75
     5   781.25 2.75
     6   781.25 2.75
     7   781.25 2.75
     8   781.25 2.75
     9   781.25 2.75
    10   781.25 2.75
    11   781.25 2.75
    12   781.25 2.75
    13   781.25 2.75
    14   781.25 2.75
    15   781.25 2.75
    16   781.25 2.75
    17   781.25 2.75
    18   781.25 2.75
17     0.00
     1   807.58 3.03
     2   807.58 3.03
     3   807.58 3.03
     4   807.58 3.03
     5   807.58 3.03
     6   807.58 3.03
```

```
      7   807.58 3.03
      8   807.58 3.03
      9   807.58 3.03
     10   807.58 3.03
     11   807.58 3.03
     12   807.58 3.03
     13   807.58 3.03
     14   807.58 3.03
     15   807.58 3.03
     16   807.58 3.03
     17   807.58 3.03
     18   807.58 3.03
18     0.00
      1   897.75 2.62
      2   897.75 2.62
      3   897.75 2.62
      4   897.75 2.62
      5   897.75 2.62
      6   897.75 2.62
      7   897.75 2.62
      8   897.75 2.62
      9   897.75 2.62
     10   897.75 2.62
     11   897.75 2.62
     12   897.75 2.62
     13   897.75 2.62
     14   897.75 2.62
     15   897.75 2.62
     16   897.75 2.62
     17   897.75 2.62
     18   897.75 2.62
19     0.00
      1   626.21 2.77
      2   626.21 2.77
      3   626.21 2.77
      4   626.21 2.77
      5   626.21 2.77
      6   626.21 2.77
      7   626.21 2.77
      8   626.21 2.77
      9   626.21 2.77
     10   626.21 2.77
     11   626.21 2.77
     12   626.21 2.77
     13   626.21 2.77
     14   626.21 2.77
     15   626.21 2.77
     16   626.21 2.77
     17   626.21 2.77
     18   626.21 2.77
20     0.00
      1   469.80 2.45
      2   469.80 2.45
      3   469.80 2.45
```

```
     4   469.80 2.45
     5   469.80 2.45
     6   469.80 2.45
     7   469.80 2.45
     8   469.80 2.45
     9   469.80 2.45
    10   469.80 2.45
    11   469.80 2.45
    12   469.80 2.45
    13   469.80 2.45
    14   469.80 2.45
    15   469.80 2.45
    16   469.80 2.45
    17   469.80 2.45
    18   469.80 2.45
21     0.00
     1   355.72 3.53
     2   355.72 3.53
     3   355.72 3.53
     4   355.72 3.53
     5   355.72 3.53
     6   355.72 3.53
     7   355.72 3.53
     8   355.72 3.53
     9   355.72 3.53
    10   355.72 3.53
    11   355.72 3.53
    12   355.72 3.53
    13   355.72 3.53
    14   355.72 3.53
    15   355.72 3.53
    16   355.72 3.53
    17   355.72 3.53
    18   355.72 3.53
22     0.00
     1   357.03 3.81
     2   357.03 3.81
     3   357.03 3.81
     4   357.03 3.81
     5   357.03 3.81
     6   357.03 3.81
     7   357.03 3.81
     8   357.03 3.81
     9   357.03 3.81
    10   357.03 3.81
    11   357.03 3.81
    12   357.03 3.81
    13   357.03 3.81
    14   357.03 3.81
    15   357.03 3.81
    16   357.03 3.81
    17   357.03 3.81
    18   357.03 3.81
23     0.00
```

```
      1   268.35 3.64
      2   268.35 3.64
      3   268.35 3.64
      4   268.35 3.64
      5   268.35 3.64
      6   268.35 3.64
      7   268.35 3.64
      8   268.35 3.64
      9   268.35 3.64
     10   268.35 3.64
     11   268.35 3.64
     12   268.35 3.64
     13   268.35 3.64
     14   268.35 3.64
     15   268.35 3.64
     16   268.35 3.64
     17   268.35 3.64
     18   268.35 3.64
24     0.00
      1   205.83 3.02
      2   205.83 3.02
      3   205.83 3.02
      4   205.83 3.02
      5   205.83 3.02
      6   205.83 3.02
      7   205.83 3.02
      8   205.83 3.02
      9   205.83 3.02
     10   205.83 3.02
     11   205.83 3.02
     12   205.83 3.02
     13   205.83 3.02
     14   205.83 3.02
     15   205.83 3.02
     16   205.83 3.02
     17   205.83 3.02
     18   205.83 3.02
```

```
'WB24fromWC, DPMExh, scaled 1000x 000' 60.00 108.000 0.00 0.00 60 1.0000 0
1 1 05 12 31 05
2903 05 2903 05
0 0 'R'
'R1_A_1                                ' 581104.13 4194395.51   -5.74
'R2_A_1                                ' 581109.13 4194395.63   -5.82
'R3_A_1                                ' 581114.13 4194395.75   -5.90
'R4_A_1                                ' 581099.01 4194400.39   -5.61
'R5_A_1                                ' 581104.01 4194400.51   -5.70
'R6_A_1                                ' 581109.01 4194400.63   -5.78
'R7_A_1                                ' 581114.01 4194400.75   -5.88
'R8_A_1                                ' 581119.01 4194400.86   -5.96
'R9_A_1                                ' 581093.89 4194405.27   -5.52
'R10_A_1                               ' 581098.89 4194405.39   -5.59
'R11_A_1                               ' 581103.89 4194405.51   -5.69
'R12_A_1                               ' 581108.89 4194405.62   -5.79
'R13_A_1                               ' 581113.89 4194405.74   -5.89
'R14_A_1                               ' 581118.89 4194405.86   -5.98
'R15_A_1                               ' 581093.77 4194410.27   -5.50
'R16_A_1                               ' 581098.77 4194410.38   -5.56
'R17_A_1                               ' 581103.77 4194410.50   -5.64
'R18_A_1                               ' 581108.77 4194410.62   -5.73
'R19_A_1                               ' 581113.77 4194410.74   -5.81
'R20_A_1                               ' 581118.77 4194410.86   -5.90
'R21_A_1                               ' 581123.76 4194410.98   -5.99
'R22_A_1                               ' 581093.65 4194415.26   -5.48
'R23_A_1                               ' 581098.65 4194415.38   -5.53
'R24_A_1                               ' 581103.65 4194415.50   -5.58
'R25_A_1                               ' 581108.65 4194415.62   -5.64
'R26_A_1                               ' 581113.65 4194415.74   -5.71
'R27_A_1                               ' 581118.65 4194415.86   -5.80
'R28_A_1                               ' 581123.64 4194415.98   -5.89
'R29_A_1                               ' 581128.64 4194416.10   -5.99
'R30_A_1                               ' 581133.64 4194416.22   -6.09
'R31_A_1                               ' 581138.64 4194416.34   -6.19
'R32_A_1                               ' 581093.53 4194420.26   -5.41
'R33_A_1                               ' 581098.53 4194420.38   -5.46
'R34_A_1                               ' 581103.53 4194420.50   -5.51
'R35_A_1                               ' 581108.53 4194420.62   -5.57
'R36_A_1                               ' 581113.53 4194420.74   -5.64
'R37_A_1                               ' 581118.53 4194420.86   -5.73
'R38_A_1                               ' 581123.53 4194420.98   -5.83
'R39_A_1                               ' 581128.52 4194421.10   -5.94
'R40_A_1                               ' 581133.52 4194421.22   -6.05
'R41_A_1                               ' 581138.52 4194421.34   -6.16
'R42_A_1                               ' 581143.52 4194421.46   -6.26
'R43_A_1                               ' 581148.52 4194421.58   -6.36
'R44_A_1                               ' 581093.41 4194425.26   -5.31
'R45_A_1                               ' 581098.41 4194425.38   -5.36
'R46_A_1                               ' 581103.41 4194425.50   -5.42
'R47_A_1                               ' 581108.41 4194425.62   -5.50
'R48_A_1                               ' 581113.41 4194425.74   -5.59
'R49_A_1                               ' 581118.41 4194425.86   -5.69
'R50_A_1                               ' 581123.41 4194425.98   -5.79
```

```
'R51_A_1                                ' 581128.40 4194426.10   -5.89
'R52_A_1                                ' 581133.40 4194426.22   -6.01
'R53_A_1                                ' 581138.40 4194426.34   -6.13
'R54_A_1                                ' 581143.40 4194426.46   -6.24
'R55_A_1                                ' 581148.40 4194426.58   -6.33
'R56_A_1                                ' 581153.40 4194426.69   -6.39
'R57_A_1                                ' 581158.40 4194426.81   -6.47
'R58_A_1                                ' 581093.29 4194430.26   -5.23
'R59_A_1                                ' 581098.29 4194430.38   -5.30
'R60_A_1                                ' 581103.29 4194430.50   -5.37
 2 'P'
 1 1 1 1 1 1 1
'CAL3QHCR RUN' 18
    1 1
'Link_1                                 ' 'AG' 581350.03 4194737.17 581336.06 4194736.29
-1.64    9.68
    2 1
'Link_2                                 ' 'AG' 581336.06 4194736.29 581315.10 4194735.51
-1.25    9.68
    3 1
'Link_3                                 ' 'AG' 581315.10 4194735.51 581296.81 4194734.19
0.18    9.68
    4 1
'Link_4                                 ' 'AG' 581296.81 4194734.19 581278.10 4194733.83
1.58    9.68
    5 1
'Link_5                                 ' 'AG' 581278.10 4194733.83 581256.66 4194733.99
2.27    9.68
    6 1
'Link_6                                 ' 'AG' 581256.66 4194733.99 581239.36 4194734.53
3.12    9.68
    7 1
'Link_7                                 ' 'AG' 581239.36 4194734.53 581223.40 4194735.14
3.83    9.68
    8 1
'Link_8                                 ' 'AG' 581223.40 4194735.14 581201.76 4194736.28
4.41    9.68
    9 1
'Link_9                                 ' 'AG' 581201.76 4194736.28 581187.97 4194738.09
5.07    9.68
    10 1
'Link_10                                ' 'AG' 581187.97 4194738.09 581170.61 4194739.90
6.62    9.68
    11 1
'Link_11                                ' 'AG' 581170.61 4194739.90 581146.74 4194743.11
8.83    9.68
    12 1
'Link_12                                ' 'AG' 581146.74 4194743.11 581128.69 4194746.38
10.00    9.68
    13 1
'Link_13                                ' 'AG' 581128.69 4194746.38 581109.38 4194750.70
10.00    9.68
    14 1
'Link_14                                ' 'AG' 581109.38 4194750.70 581089.22 4194754.93
```

```
10.00    9.68
    15 1
'Link_15                                ' 'AG' 581089.22 4194754.93 581075.77 4194758.64
10.00    9.68
    16 1
'Link_16                                ' 'AG' 581075.77 4194758.64 581065.15 4194762.03
10.00    9.68
    17 1
'Link_17                                ' 'AG' 581065.15 4194762.03 581029.34 4194771.80
10.00    9.68
    18 1
'Link_18                                ' 'AG' 581029.34 4194771.80 580998.75 4194780.04
10.00    9.68
 1     0.00
      1    11.55 70.39
      2    11.55 70.39
      3    11.55 70.39
      4    11.55 70.39
      5    11.55 70.39
      6    11.55 70.39
      7    11.55 70.39
      8    11.55 70.39
      9    11.55 70.39
     10    11.55 70.39
     11    11.55 70.39
     12    11.55 70.39
     13    11.55 70.39
     14    11.55 70.39
     15    11.55 70.39
     16    11.55 70.39
     17    11.55 70.39
     18    11.55 70.39
 2     0.00
      1     9.70 62.19
      2     9.70 62.19
      3     9.70 62.19
      4     9.70 62.19
      5     9.70 62.19
      6     9.70 62.19
      7     9.70 62.19
      8     9.70 62.19
      9     9.70 62.19
     10     9.70 62.19
     11     9.70 62.19
     12     9.70 62.19
     13     9.70 62.19
     14     9.70 62.19
     15     9.70 62.19
     16     9.70 62.19
     17     9.70 62.19
     18     9.70 62.19
 3     0.00
      1    12.72 58.32
      2    12.72 58.32
```

```
      3    12.72 58.32
      4    12.72 58.32
      5    12.72 58.32
      6    12.72 58.32
      7    12.72 58.32
      8    12.72 58.32
      9    12.72 58.32
     10    12.72 58.32
     11    12.72 58.32
     12    12.72 58.32
     13    12.72 58.32
     14    12.72 58.32
     15    12.72 58.32
     16    12.72 58.32
     17    12.72 58.32
     18    12.72 58.32
4     0.00
      1     9.20 76.15
      2     9.20 76.15
      3     9.20 76.15
      4     9.20 76.15
      5     9.20 76.15
      6     9.20 76.15
      7     9.20 76.15
      8     9.20 76.15
      9     9.20 76.15
     10     9.20 76.15
     11     9.20 76.15
     12     9.20 76.15
     13     9.20 76.15
     14     9.20 76.15
     15     9.20 76.15
     16     9.20 76.15
     17     9.20 76.15
     18     9.20 76.15
5     0.00
      1     7.21 69.86
      2     7.21 69.86
      3     7.21 69.86
      4     7.21 69.86
      5     7.21 69.86
      6     7.21 69.86
      7     7.21 69.86
      8     7.21 69.86
      9     7.21 69.86
     10     7.21 69.86
     11     7.21 69.86
     12     7.21 69.86
     13     7.21 69.86
     14     7.21 69.86
     15     7.21 69.86
     16     7.21 69.86
     17     7.21 69.86
     18     7.21 69.86
```

```
6     0.00
     1     7.73 84.31
     2     7.73 84.31
     3     7.73 84.31
     4     7.73 84.31
     5     7.73 84.31
     6     7.73 84.31
     7     7.73 84.31
     8     7.73 84.31
     9     7.73 84.31
    10     7.73 84.31
    11     7.73 84.31
    12     7.73 84.31
    13     7.73 84.31
    14     7.73 84.31
    15     7.73 84.31
    16     7.73 84.31
    17     7.73 84.31
    18     7.73 84.31
7     0.00
     1    13.04 84.70
     2    13.04 84.70
     3    13.04 84.70
     4    13.04 84.70
     5    13.04 84.70
     6    13.04 84.70
     7    13.04 84.70
     8    13.04 84.70
     9    13.04 84.70
    10    13.04 84.70
    11    13.04 84.70
    12    13.04 84.70
    13    13.04 84.70
    14    13.04 84.70
    15    13.04 84.70
    16    13.04 84.70
    17    13.04 84.70
    18    13.04 84.70
8     0.00
     1    12.73 79.73
     2    12.73 79.73
     3    12.73 79.73
     4    12.73 79.73
     5    12.73 79.73
     6    12.73 79.73
     7    12.73 79.73
     8    12.73 79.73
     9    12.73 79.73
    10    12.73 79.73
    11    12.73 79.73
    12    12.73 79.73
    13    12.73 79.73
    14    12.73 79.73
    15    12.73 79.73
```

```
    16    12.73 79.73
    17    12.73 79.73
    18    12.73 79.73
9     0.00
     1    17.13 75.90
     2    17.13 75.90
     3    17.13 75.90
     4    17.13 75.90
     5    17.13 75.90
     6    17.13 75.90
     7    17.13 75.90
     8    17.13 75.90
     9    17.13 75.90
    10    17.13 75.90
    11    17.13 75.90
    12    17.13 75.90
    13    17.13 75.90
    14    17.13 75.90
    15    17.13 75.90
    16    17.13 75.90
    17    17.13 75.90
    18    17.13 75.90
10     0.00
     1    18.34 79.07
     2    18.34 79.07
     3    18.34 79.07
     4    18.34 79.07
     5    18.34 79.07
     6    18.34 79.07
     7    18.34 79.07
     8    18.34 79.07
     9    18.34 79.07
    10    18.34 79.07
    11    18.34 79.07
    12    18.34 79.07
    13    18.34 79.07
    14    18.34 79.07
    15    18.34 79.07
    16    18.34 79.07
    17    18.34 79.07
    18    18.34 79.07
11     0.00
     1    17.05 78.46
     2    17.05 78.46
     3    17.05 78.46
     4    17.05 78.46
     5    17.05 78.46
     6    17.05 78.46
     7    17.05 78.46
     8    17.05 78.46
     9    17.05 78.46
    10    17.05 78.46
    11    17.05 78.46
    12    17.05 78.46
```

```
    13    17.05 78.46
    14    17.05 78.46
    15    17.05 78.46
    16    17.05 78.46
    17    17.05 78.46
    18    17.05 78.46
12     0.00
     1    18.18 79.38
     2    18.18 79.38
     3    18.18 79.38
     4    18.18 79.38
     5    18.18 79.38
     6    18.18 79.38
     7    18.18 79.38
     8    18.18 79.38
     9    18.18 79.38
    10    18.18 79.38
    11    18.18 79.38
    12    18.18 79.38
    13    18.18 79.38
    14    18.18 79.38
    15    18.18 79.38
    16    18.18 79.38
    17    18.18 79.38
    18    18.18 79.38
13     0.00
     1    15.89 82.55
     2    15.89 82.55
     3    15.89 82.55
     4    15.89 82.55
     5    15.89 82.55
     6    15.89 82.55
     7    15.89 82.55
     8    15.89 82.55
     9    15.89 82.55
    10    15.89 82.55
    11    15.89 82.55
    12    15.89 82.55
    13    15.89 82.55
    14    15.89 82.55
    15    15.89 82.55
    16    15.89 82.55
    17    15.89 82.55
    18    15.89 82.55
14     0.00
     1    16.20 81.56
     2    16.20 81.56
     3    16.20 81.56
     4    16.20 81.56
     5    16.20 81.56
     6    16.20 81.56
     7    16.20 81.56
     8    16.20 81.56
     9    16.20 81.56
```

```
    10    16.20 81.56
    11    16.20 81.56
    12    16.20 81.56
    13    16.20 81.56
    14    16.20 81.56
    15    16.20 81.56
    16    16.20 81.56
    17    16.20 81.56
    18    16.20 81.56
15     0.00
     1    13.35 84.91
     2    13.35 84.91
     3    13.35 84.91
     4    13.35 84.91
     5    13.35 84.91
     6    13.35 84.91
     7    13.35 84.91
     8    13.35 84.91
     9    13.35 84.91
    10    13.35 84.91
    11    13.35 84.91
    12    13.35 84.91
    13    13.35 84.91
    14    13.35 84.91
    15    13.35 84.91
    16    13.35 84.91
    17    13.35 84.91
    18    13.35 84.91
16     0.00
     1    10.38 82.97
     2    10.38 82.97
     3    10.38 82.97
     4    10.38 82.97
     5    10.38 82.97
     6    10.38 82.97
     7    10.38 82.97
     8    10.38 82.97
     9    10.38 82.97
    10    10.38 82.97
    11    10.38 82.97
    12    10.38 82.97
    13    10.38 82.97
    14    10.38 82.97
    15    10.38 82.97
    16    10.38 82.97
    17    10.38 82.97
    18    10.38 82.97
17     0.00
     1    13.36 85.04
     2    13.36 85.04
     3    13.36 85.04
     4    13.36 85.04
     5    13.36 85.04
     6    13.36 85.04
```

```
     7    13.36 85.04
     8    13.36 85.04
     9    13.36 85.04
    10    13.36 85.04
    11    13.36 85.04
    12    13.36 85.04
    13    13.36 85.04
    14    13.36 85.04
    15    13.36 85.04
    16    13.36 85.04
    17    13.36 85.04
    18    13.36 85.04
18     0.00
     1    11.75 73.36
     2    11.75 73.36
     3    11.75 73.36
     4    11.75 73.36
     5    11.75 73.36
     6    11.75 73.36
     7    11.75 73.36
     8    11.75 73.36
     9    11.75 73.36
    10    11.75 73.36
    11    11.75 73.36
    12    11.75 73.36
    13    11.75 73.36
    14    11.75 73.36
    15    11.75 73.36
    16    11.75 73.36
    17    11.75 73.36
    18    11.75 73.36
19     0.00
     1     9.39 75.88
     2     9.39 75.88
     3     9.39 75.88
     4     9.39 75.88
     5     9.39 75.88
     6     9.39 75.88
     7     9.39 75.88
     8     9.39 75.88
     9     9.39 75.88
    10     9.39 75.88
    11     9.39 75.88
    12     9.39 75.88
    13     9.39 75.88
    14     9.39 75.88
    15     9.39 75.88
    16     9.39 75.88
    17     9.39 75.88
    18     9.39 75.88
20     0.00
     1     4.36 83.24
     2     4.36 83.24
     3     4.36 83.24
```

```
     4     4.36 83.24
     5     4.36 83.24
     6     4.36 83.24
     7     4.36 83.24
     8     4.36 83.24
     9     4.36 83.24
    10     4.36 83.24
    11     4.36 83.24
    12     4.36 83.24
    13     4.36 83.24
    14     4.36 83.24
    15     4.36 83.24
    16     4.36 83.24
    17     4.36 83.24
    18     4.36 83.24
21     0.00
     1     9.32 75.67
     2     9.32 75.67
     3     9.32 75.67
     4     9.32 75.67
     5     9.32 75.67
     6     9.32 75.67
     7     9.32 75.67
     8     9.32 75.67
     9     9.32 75.67
    10     9.32 75.67
    11     9.32 75.67
    12     9.32 75.67
    13     9.32 75.67
    14     9.32 75.67
    15     9.32 75.67
    16     9.32 75.67
    17     9.32 75.67
    18     9.32 75.67
22     0.00
     1     9.99 81.67
     2     9.99 81.67
     3     9.99 81.67
     4     9.99 81.67
     5     9.99 81.67
     6     9.99 81.67
     7     9.99 81.67
     8     9.99 81.67
     9     9.99 81.67
    10     9.99 81.67
    11     9.99 81.67
    12     9.99 81.67
    13     9.99 81.67
    14     9.99 81.67
    15     9.99 81.67
    16     9.99 81.67
    17     9.99 81.67
    18     9.99 81.67
23     0.00
```

```
      1     7.43 75.82
      2     7.43 75.82
      3     7.43 75.82
      4     7.43 75.82
      5     7.43 75.82
      6     7.43 75.82
      7     7.43 75.82
      8     7.43 75.82
      9     7.43 75.82
     10     7.43 75.82
     11     7.43 75.82
     12     7.43 75.82
     13     7.43 75.82
     14     7.43 75.82
     15     7.43 75.82
     16     7.43 75.82
     17     7.43 75.82
     18     7.43 75.82
24     0.00
      1     3.72 77.61
      2     3.72 77.61
      3     3.72 77.61
      4     3.72 77.61
      5     3.72 77.61
      6     3.72 77.61
      7     3.72 77.61
      8     3.72 77.61
      9     3.72 77.61
     10     3.72 77.61
     11     3.72 77.61
     12     3.72 77.61
     13     3.72 77.61
     14     3.72 77.61
     15     3.72 77.61
     16     3.72 77.61
     17     3.72 77.61
     18     3.72 77.61
```

Receptors

Receptor ID	UTMx	UTMy	Elevation[1]
R1_A_1	581104.13	4194395.51	-5.74
R2_A_1	581109.13	4194395.63	-5.82
R3_A_1	581114.13	4194395.75	-5.9
R4_A_1	581099.01	4194400.39	-5.61
R5_A_1	581104.01	4194400.51	-5.7
R6_A_1	581109.01	4194400.63	-5.78
R7_A_1	581114.01	4194400.75	-5.88
R8_A_1	581119.01	4194400.86	-5.96
R9_A_1	581093.89	4194405.27	-5.52
R10_A_1	581098.89	4194405.39	-5.59
R11_A_1	581103.89	4194405.51	-5.69
R12_A_1	581108.89	4194405.62	-5.79
R13_A_1	581113.89	4194405.74	-5.89
R14_A_1	581118.89	4194405.86	-5.98
R15_A_1	581093.77	4194410.27	-5.5
R16_A_1	581098.77	4194410.38	-5.56
R17_A_1	581103.77	4194410.5	-5.64
R18_A_1	581108.77	4194410.62	-5.73
R19_A_1	581113.77	4194410.74	-5.81
R20_A_1	581118.77	4194410.86	-5.9
R21_A_1	581123.76	4194410.98	-5.99
R22_A_1	581093.65	4194415.26	-5.48
R23_A_1	581098.65	4194415.38	-5.53
R24_A_1	581103.65	4194415.5	-5.58
R25_A_1	581108.65	4194415.62	-5.64
R26_A_1	581113.65	4194415.74	-5.71
R27_A_1	581118.65	4194415.86	-5.8
R28_A_1	581123.64	4194415.98	-5.89
R29_A_1	581128.64	4194416.1	-5.99
R30_A_1	581133.64	4194416.22	-6.09
R31_A_1	581138.64	4194416.34	-6.19
R32_A_1	581093.53	4194420.26	-5.41
R33_A_1	581098.53	4194420.38	-5.46
R34_A_1	581103.53	4194420.5	-5.51
R35_A_1	581108.53	4194420.62	-5.57
R36_A_1	581113.53	4194420.74	-5.64
R37_A_1	581118.53	4194420.86	-5.73
R38_A_1	581123.53	4194420.98	-5.83
R39_A_1	581128.52	4194421.1	-5.94
R40_A_1	581133.52	4194421.22	-6.05
R41_A_1	581138.52	4194421.34	-6.16
R42_A_1	581143.52	4194421.46	-6.26
R43_A_1	581148.52	4194421.58	-6.36
R44_A_1	581093.41	4194425.26	-5.31
R45_A_1	581098.41	4194425.38	-5.36

Receptor ID	UTMx	UTMy	Elevation[1]
R46_A_1	581103.41	4194425.5	-5.42
R47_A_1	581108.41	4194425.62	-5.5
R48_A_1	581113.41	4194425.74	-5.59
R49_A_1	581118.41	4194425.86	-5.69
R50_A_1	581123.41	4194425.98	-5.79
R51_A_1	581128.4	4194426.1	-5.89
R52_A_1	581133.4	4194426.22	-6.01
R53_A_1	581138.4	4194426.34	-6.13
R54_A_1	581143.4	4194426.46	-6.24
R55_A_1	581148.4	4194426.58	-6.33
R56_A_1	581153.4	4194426.69	-6.39
R57_A_1	581158.4	4194426.81	-6.47
R58_A_1	581093.29	4194430.26	-5.23
R59_A_1	581098.29	4194430.38	-5.3
R60_A_1	581103.29	4194430.5	-5.37
R61_A_1	581108.29	4194430.62	-5.45
R62_A_1	581113.29	4194430.74	-5.55
R63_A_1	581118.29	4194430.86	-5.65
R64_A_1	581123.29	4194430.98	-5.77
R65_A_1	581128.28	4194431.1	-5.87
R66_A_1	581133.28	4194431.22	-5.98
R67_A_1	581138.28	4194431.34	-6.08
R68_A_1	581143.28	4194431.46	-6.17
R69_A_1	581148.28	4194431.57	-6.26
R70_A_1	581153.28	4194431.69	-6.33
R71_A_1	581158.28	4194431.81	-6.42
R72_A_1	581163.27	4194431.93	-6.53
R73_A_1	581168.27	4194432.05	-6.65
R74_A_1	581093.17	4194435.26	-5.18
R75_A_1	581098.17	4194435.38	-5.28
R76_A_1	581103.17	4194435.5	-5.36
R77_A_1	581108.17	4194435.62	-5.43
R78_A_1	581113.17	4194435.74	-5.51
R79_A_1	581118.17	4194435.86	-5.63
R80_A_1	581123.17	4194435.98	-5.76
R81_A_1	581128.17	4194436.1	-5.86
R82_A_1	581133.16	4194436.21	-5.95
R83_A_1	581138.16	4194436.33	-6.02
R84_A_1	581143.16	4194436.45	-6.09
R85_A_1	581148.16	4194436.57	-6.17
R86_A_1	581153.16	4194436.69	-6.27
R87_A_1	581158.16	4194436.81	-6.38
R88_A_1	581163.16	4194436.93	-6.49
R89_A_1	581168.15	4194437.05	-6.63
R90_A_1	581093.06	4194440.26	-5.11

Receptor ID	UTMx	UTMy	Elevation[1]
R91_A_1	581098.05	4194440.38	-5.22
R92_A_1	581103.05	4194440.5	-5.32
R93_A_1	581108.05	4194440.61	-5.41
R94_A_1	581113.05	4194440.73	-5.49
R95_A_1	581118.05	4194440.85	-5.6
R96_A_1	581123.05	4194440.97	-5.72
R97_A_1	581128.05	4194441.09	-5.81
R98_A_1	581133.04	4194441.21	-5.89
R99_A_1	581138.04	4194441.33	-5.95
R100_A_1	581143.04	4194441.45	-6.03
R101_A_1	581148.04	4194441.57	-6.12
R102_A_1	581153.04	4194441.69	-6.23
R103_A_1	581158.04	4194441.81	-6.34
R104_A_1	581163.04	4194441.93	-6.47
R105_A_1	581168.03	4194442.05	-6.6
R106_A_1	581092.94	4194445.26	-5.02
R107_A_1	581097.93	4194445.37	-5.14
R108_A_1	581102.93	4194445.49	-5.26
R109_A_1	581107.93	4194445.61	-5.38
R110_A_1	581112.93	4194445.73	-5.47
R111_A_1	581117.93	4194445.85	-5.57
R112_A_1	581122.93	4194445.97	-5.66
R113_A_1	581127.93	4194446.09	-5.72
R114_A_1	581132.92	4194446.21	-5.8
R115_A_1	581137.92	4194446.33	-5.88
R116_A_1	581142.92	4194446.45	-5.98
R117_A_1	581147.92	4194446.57	-6.08
R118_A_1	581152.92	4194446.69	-6.19
R119_A_1	581157.92	4194446.81	-6.32
R120_A_1	581162.92	4194446.93	-6.45
R121_A_1	581167.91	4194447.05	-6.56
R122_A_1	581092.82	4194450.25	-4.94
R123_A_1	581097.82	4194450.37	-5.07
R124_A_1	581102.81	4194450.49	-5.21
R125_A_1	581107.81	4194450.61	-5.33
R126_A_1	581112.81	4194450.73	-5.43
R127_A_1	581117.81	4194450.85	-5.51
R128_A_1	581122.81	4194450.97	-5.59
R129_A_1	581127.81	4194451.09	-5.65
R130_A_1	581132.81	4194451.21	-5.73
R131_A_1	581137.8	4194451.33	-5.84
R132_A_1	581142.8	4194451.45	-5.95
R133_A_1	581147.8	4194451.57	-6.06
R134_A_1	581152.8	4194451.69	-6.17
R135_A_1	581157.8	4194451.81	-6.29

Receptor ID	UTMx	UTMy	Elevation[1]
R136_A_1	581162.8	4194451.93	-6.41
R137_A_1	581167.79	4194452.05	-6.51
R138_A_1	581092.7	4194455.25	-4.89
R139_A_1	581097.69	4194455.37	-5.02
R140_A_1	581102.69	4194455.49	-5.15
R141_A_1	581107.69	4194455.61	-5.28
R142_A_1	581112.69	4194455.73	-5.37
R143_A_1	581117.69	4194455.85	-5.44
R144_A_1	581122.69	4194455.97	-5.51
R145_A_1	581127.69	4194456.09	-5.59
R146_A_1	581132.68	4194456.21	-5.69
R147_A_1	581137.68	4194456.33	-5.81
R148_A_1	581142.68	4194456.45	-5.93
R149_A_1	581147.68	4194456.57	-6.05
R150_A_1	581152.68	4194456.69	-6.16
R151_A_1	581157.68	4194456.81	-6.26
R152_A_1	581162.68	4194456.93	-6.36
R153_A_1	581167.67	4194457.05	-6.46
R154_A_1	581092.58	4194460.25	-4.84
R155_A_1	581097.58	4194460.37	-4.97
R156_A_1	581102.57	4194460.49	-5.11
R157_A_1	581107.57	4194460.61	-5.23
R158_A_1	581112.57	4194460.73	-5.32
R159_A_1	581117.57	4194460.85	-5.4
R160_A_1	581122.57	4194460.97	-5.47
R161_A_1	581127.57	4194461.09	-5.56
R162_A_1	581132.57	4194461.21	-5.67
R163_A_1	581137.56	4194461.33	-5.79
R164_A_1	581142.56	4194461.45	-5.91
R165_A_1	581147.56	4194461.57	-6.03
R166_A_1	581152.56	4194461.69	-6.12
R167_A_1	581157.56	4194461.81	-6.22
R168_A_1	581162.56	4194461.92	-6.31
R169_A_1	581167.56	4194462.04	-6.42
R170_A_1	581092.46	4194465.25	-4.81
R171_A_1	581097.46	4194465.37	-4.93
R172_A_1	581102.45	4194465.49	-5.06
R173_A_1	581107.45	4194465.61	-5.19
R174_A_1	581112.45	4194465.73	-5.28
R175_A_1	581117.45	4194465.85	-5.38
R176_A_1	581122.45	4194465.97	-5.47
R177_A_1	581127.45	4194466.09	-5.56
R178_A_1	581132.45	4194466.21	-5.67
R179_A_1	581137.44	4194466.32	-5.78
R180_A_1	581142.44	4194466.45	-5.89

Receptor ID	UTMx	UTMy	Elevation[1]
R181_A_1	581147.44	4194466.56	-5.99
R182_A_1	581152.44	4194466.68	-6.08
R183_A_1	581157.44	4194466.8	-6.18
R184_A_1	581162.44	4194466.92	-6.27
R185_A_1	581167.44	4194467.04	-6.38
R186_A_1	581092.34	4194470.25	-4.8
R187_A_1	581097.34	4194470.37	-4.92
R188_A_1	581102.34	4194470.49	-5.05
R189_A_1	581107.33	4194470.61	-5.16
R190_A_1	581112.33	4194470.73	-5.26
R191_A_1	581117.33	4194470.85	-5.36
R192_A_1	581122.33	4194470.97	-5.46
R193_A_1	581127.33	4194471.09	-5.56
R194_A_1	581132.33	4194471.2	-5.67
R195_A_1	581137.33	4194471.32	-5.79
R196_A_1	581142.32	4194471.44	-5.89
R197_A_1	581147.32	4194471.56	-5.99
R198_A_1	581152.32	4194471.68	-6.07
R199_A_1	581157.32	4194471.8	-6.16
R200_A_1	581162.32	4194471.92	-6.27
R201_A_1	581167.32	4194472.04	-6.39
R202_A_1	581092.22	4194475.25	-4.86
R203_A_1	581097.22	4194475.37	-4.96
R204_A_1	581102.22	4194475.49	-5.07
R205_A_1	581107.21	4194475.61	-5.17
R206_A_1	581112.21	4194475.72	-5.26
R207_A_1	581117.21	4194475.84	-5.36
R208_A_1	581122.21	4194475.96	-5.46
R209_A_1	581127.21	4194476.08	-5.56
R210_A_1	581132.21	4194476.2	-5.67
R211_A_1	581137.21	4194476.32	-5.8
R212_A_1	581142.2	4194476.44	-5.91
R213_A_1	581147.2	4194476.56	-6.01
R214_A_1	581152.2	4194476.68	-6.08
R215_A_1	581157.2	4194476.8	-6.18
R216_A_1	581162.2	4194476.92	-6.3
R217_A_1	581167.2	4194477.04	-6.42
R218_A_1	581092.1	4194480.25	-4.92
R219_A_1	581097.1	4194480.36	-5.01
R220_A_1	581102.1	4194480.48	-5.1
R221_A_1	581107.09	4194480.6	-5.19
R222_A_1	581112.09	4194480.72	-5.27
R223_A_1	581117.09	4194480.84	-5.36
R224_A_1	581122.09	4194480.96	-5.46
R225_A_1	581127.09	4194481.08	-5.56

Receptor ID	UTMx	UTMy	Elevation[1]
R226_A_1	581132.09	4194481.2	-5.67
R227_A_1	581137.09	4194481.32	-5.81
R228_A_1	581142.08	4194481.44	-5.93
R229_A_1	581147.08	4194481.56	-6.04
R230_A_1	581152.08	4194481.68	-6.11
R231_A_1	581157.08	4194481.8	-6.21
R232_A_1	581162.08	4194481.92	-6.33
R233_A_1	581167.08	4194482.04	-6.43
R234_A_1	581091.98	4194485.24	-5.01
R235_A_1	581096.98	4194485.36	-5.08
R236_A_1	581101.98	4194485.48	-5.15
R237_A_1	581106.98	4194485.6	-5.23
R238_A_1	581111.97	4194485.72	-5.29
R239_A_1	581116.97	4194485.84	-5.37
R240_A_1	581121.97	4194485.96	-5.45
R241_A_1	581126.97	4194486.08	-5.56
R242_A_1	581131.97	4194486.2	-5.68
R243_A_1	581136.97	4194486.32	-5.81
R244_A_1	581141.97	4194486.44	-5.93
R245_A_1	581146.96	4194486.56	-6.05
R246_A_1	581151.96	4194486.68	-6.15
R247_A_1	581156.96	4194486.8	-6.25
R248_A_1	581161.96	4194486.92	-6.36
R249_A_1	581166.96	4194487.04	-6.41
R250_A_1	581091.86	4194490.24	-5.11
R251_A_1	581096.86	4194490.36	-5.16
R252_A_1	581101.86	4194490.48	-5.21
R253_A_1	581106.86	4194490.6	-5.27
R254_A_1	581111.85	4194490.72	-5.32
R255_A_1	581116.85	4194490.84	-5.39
R256_A_1	581121.85	4194490.96	-5.47
R257_A_1	581126.85	4194491.08	-5.57
R258_A_1	581131.85	4194491.2	-5.69
R259_A_1	581136.85	4194491.32	-5.82
R260_A_1	581141.85	4194491.44	-5.95
R261_A_1	581146.84	4194491.56	-6.08
R262_A_1	581151.84	4194491.68	-6.19
R263_A_1	581156.84	4194491.8	-6.27
R264_A_1	581161.84	4194491.92	-6.33
R265_A_1	581166.84	4194492.04	-6.33
R266_B_1	581167.1	4194271.98	-4.64
R267_B_1	581172.1	4194272.1	-4.64
R268_B_1	581177.1	4194272.22	-4.67
R269_B_1	581182.1	4194272.34	-4.7
R270_B_1	581166.98	4194276.98	-4.71

Receptor ID	UTMx	UTMy	Elevation[1]
R271_B_1	581171.98	4194277.1	-4.7
R272_B_1	581176.98	4194277.22	-4.7
R273_B_1	581181.98	4194277.34	-4.72
R274_B_1	581166.86	4194281.98	-4.79
R275_B_1	581171.86	4194282.1	-4.75
R276_B_1	581176.86	4194282.22	-4.75
R277_B_1	581181.86	4194282.33	-4.75
R278_B_1	581166.74	4194286.97	-4.88
R279_B_1	581171.74	4194287.09	-4.83
R280_B_1	581176.74	4194287.21	-4.81
R281_B_1	581181.74	4194287.33	-4.8
R282_B_1	581166.62	4194291.97	-4.98
R283_B_1	581171.62	4194292.09	-4.93
R284_B_1	581176.62	4194292.21	-4.89
R285_B_1	581181.62	4194292.33	-4.86
R286_B_1	581166.5	4194296.97	-5.07
R287_B_1	581171.5	4194297.09	-5.02
R288_B_1	581176.5	4194297.21	-4.98
R289_B_1	581181.5	4194297.33	-4.94
R290_B_1	581166.38	4194301.97	-5.14
R291_B_1	581171.38	4194302.09	-5.12
R292_B_1	581176.38	4194302.21	-5.08
R293_B_1	581181.38	4194302.33	-5.04
R294_B_1	581166.26	4194306.97	-5.2
R295_B_1	581171.26	4194307.09	-5.19
R296_B_1	581176.26	4194307.21	-5.17
R297_B_1	581181.26	4194307.33	-5.14
R298_B_1	581166.14	4194311.97	-5.25
R299_B_1	581171.14	4194312.09	-5.25
R300_B_1	581176.14	4194312.21	-5.24
R301_B_1	581181.14	4194312.33	-5.23
R302_B_1	581166.03	4194316.97	-5.3
R303_B_1	581171.02	4194317.09	-5.3
R304_B_1	581176.02	4194317.21	-5.3
R305_B_1	581181.02	4194317.32	-5.3
R306_B_1	581105.92	4194320.53	-5.44
R307_B_1	581110.92	4194320.65	-5.5
R308_B_1	581165.91	4194321.96	-5.34
R309_B_1	581170.9	4194322.08	-5.35
R310_B_1	581175.9	4194322.2	-5.35
R311_B_1	581180.9	4194322.32	-5.36
R312_B_1	581105.8	4194325.53	-5.51
R313_B_1	581110.8	4194325.65	-5.57
R314_B_1	581115.8	4194325.77	-5.63
R315_B_1	581165.78	4194326.96	-5.42

Receptor ID	UTMx	UTMy	Elevation[1]
R316_B_1	581170.78	4194327.08	-5.42
R317_B_1	581175.78	4194327.2	-5.42
R318_B_1	581180.78	4194327.32	-5.41
R319_B_1	581090.69	4194330.17	-5.71
R320_B_1	581095.69	4194330.29	-5.74
R321_B_1	581100.68	4194330.41	-5.79
R322_B_1	581105.68	4194330.53	-5.84
R323_B_1	581110.68	4194330.65	-5.87
R324_B_1	581115.68	4194330.77	-5.9
R325_B_1	581120.68	4194330.89	-5.89
R326_B_1	581125.68	4194331.01	-5.88
R327_B_1	581130.68	4194331.12	-5.86
R328_B_1	581135.67	4194331.24	-5.84
R329_B_1	581140.67	4194331.36	-5.82
R330_B_1	581145.67	4194331.48	-5.78
R331_B_1	581150.67	4194331.6	-5.72
R332_B_1	581155.67	4194331.72	-5.66
R333_B_1	581160.67	4194331.84	-5.6
R334_B_1	581165.67	4194331.96	-5.56
R335_B_1	581170.66	4194332.08	-5.53
R336_B_1	581175.66	4194332.2	-5.5
R337_B_1	581180.66	4194332.32	-5.47
R338_B_1	581090.57	4194335.17	-6.01
R339_B_1	581095.57	4194335.29	-6.06
R340_B_1	581100.57	4194335.41	-6.11
R341_B_1	581105.56	4194335.52	-6.15
R342_B_1	581110.56	4194335.65	-6.16
R343_B_1	581115.56	4194335.76	-6.15
R344_B_1	581120.56	4194335.88	-6.11
R345_B_1	581125.56	4194336	-6.07
R346_B_1	581130.56	4194336.12	-6.03
R347_B_1	581135.56	4194336.24	-6.01
R348_B_1	581140.55	4194336.36	-6
R349_B_1	581145.55	4194336.48	-5.98
R350_B_1	581150.55	4194336.6	-5.94
R351_B_1	581155.55	4194336.72	-5.87
R352_B_1	581160.55	4194336.84	-5.79
R353_B_1	581165.55	4194336.96	-5.72
R354_B_1	581170.55	4194337.08	-5.68
R355_B_1	581175.54	4194337.2	-5.63
R356_B_1	581180.54	4194337.32	-5.59
R357_B_1	581090.45	4194340.16	-6.13
R358_B_1	581095.45	4194340.29	-6.18
R359_B_1	581100.45	4194340.4	-6.23
R360_B_1	581105.44	4194340.52	-6.28

Receptor ID	UTMx	UTMy	Elevation[1]
R361_B_1	581110.44	4194340.64	-6.31
R362_B_1	581115.44	4194340.76	-6.32
R363_B_1	581120.44	4194340.88	-6.3
R364_B_1	581125.44	4194341	-6.28
R365_B_1	581130.44	4194341.12	-6.27
R366_B_1	581135.44	4194341.24	-6.25
R367_B_1	581140.43	4194341.36	-6.23
R368_B_1	581145.43	4194341.48	-6.17
R369_B_1	581150.43	4194341.6	-6.11
R370_B_1	581155.43	4194341.72	-6.05
R371_B_1	581160.43	4194341.84	-6.01
R372_B_1	581165.43	4194341.96	-5.97
R373_B_1	581170.43	4194342.08	-5.93
R374_B_1	581175.42	4194342.2	-5.88
R375_B_1	581180.42	4194342.32	-5.84
R376_B_1	581090.33	4194345.16	-6.25
R377_B_1	581095.33	4194345.28	-6.3
R378_B_1	581100.33	4194345.4	-6.35
R379_B_1	581105.32	4194345.52	-6.4
R380_B_1	581110.32	4194345.64	-6.45
R381_B_1	581115.32	4194345.76	-6.48
R382_B_1	581120.32	4194345.88	-6.49
R383_B_1	581125.32	4194346	-6.49
R384_B_1	581130.32	4194346.12	-6.49
R385_B_1	581135.32	4194346.24	-6.47
R386_B_1	581140.31	4194346.36	-6.44
R387_B_1	581145.31	4194346.48	-6.36
R388_B_1	581150.31	4194346.6	-6.29
R389_B_1	581155.31	4194346.72	-6.23
R390_B_1	581160.31	4194346.84	-6.21
R391_B_1	581165.31	4194346.96	-6.2
R392_B_1	581170.31	4194347.08	-6.16
R393_B_1	581175.3	4194347.2	-6.12
R394_B_1	581180.3	4194347.32	-6.08
R395_B_1	581100.21	4194350.4	-6.35
R396_B_1	581105.21	4194350.52	-6.42
R397_B_1	581110.2	4194350.64	-6.48
R398_B_1	581115.2	4194350.76	-6.55
R399_B_1	581120.2	4194350.88	-6.57
R400_B_1	581125.2	4194351	-6.59
R401_B_1	581130.2	4194351.12	-6.6
R402_B_1	581135.2	4194351.24	-6.59
R403_B_1	581140.19	4194351.36	-6.57
R404_B_1	581145.19	4194351.48	-6.52
R405_B_1	581150.19	4194351.6	-6.47

Receptor ID	UTMx	UTMy	Elevation[1]
R406_B_1	581155.19	4194351.72	-6.41
R407_B_1	581160.19	4194351.84	-6.39
R408_B_1	581165.19	4194351.96	-6.36
R409_B_1	581170.19	4194352.08	-6.35
R410_B_1	581175.18	4194352.19	-6.32
R411_B_1	581180.18	4194352.31	-6.28
R412_B_1	581110.08	4194355.64	-6.52
R413_B_1	581115.08	4194355.76	-6.61
R414_B_1	581120.08	4194355.88	-6.66
R415_B_1	581125.08	4194356	-6.69
R416_B_1	581130.08	4194356.12	-6.7
R417_B_1	581135.08	4194356.24	-6.7
R418_B_1	581140.08	4194356.36	-6.7
R419_B_1	581145.07	4194356.48	-6.67
R420_B_1	581150.07	4194356.6	-6.63
R421_B_1	581155.07	4194356.72	-6.58
R422_B_1	581160.07	4194356.84	-6.55
R423_B_1	581165.07	4194356.95	-6.52
R424_B_1	581170.07	4194357.07	-6.51
R425_B_1	581175.07	4194357.19	-6.49
R426_B_1	581180.06	4194357.31	-6.47
R427_B_1	581114.96	4194360.76	-6.57
R428_B_1	581119.96	4194360.88	-6.64
R429_B_1	581124.96	4194361	-6.68
R430_B_1	581129.96	4194361.12	-6.7
R431_B_1	581134.96	4194361.24	-6.7
R432_B_1	581139.96	4194361.36	-6.69
R433_B_1	581144.95	4194361.48	-6.68
R434_B_1	581149.95	4194361.59	-6.67
R435_B_1	581154.95	4194361.71	-6.64
R436_B_1	581159.95	4194361.83	-6.62
R437_B_1	581164.95	4194361.95	-6.6
R438_B_1	581169.95	4194362.07	-6.58
R439_B_1	581174.95	4194362.19	-6.58
R440_B_1	581179.94	4194362.31	-6.61
R441_B_1	581119.84	4194365.88	-6.61
R442_B_1	581124.84	4194366	-6.68
R443_B_1	581129.84	4194366.11	-6.7
R444_B_1	581134.84	4194366.23	-6.7
R445_B_1	581139.84	4194366.35	-6.69
R446_B_1	581144.84	4194366.47	-6.69
R447_B_1	581149.83	4194366.59	-6.69
R448_B_1	581154.83	4194366.71	-6.7
R449_B_1	581159.83	4194366.83	-6.69
R450_B_1	581164.83	4194366.95	-6.68

Receptor ID	UTMx	UTMy	Elevation[1]
R451_B_1	581169.83	4194367.07	-6.65
R452_B_1	581174.83	4194367.19	-6.68
R453_B_1	581179.83	4194367.31	-6.74
R454_B_1	581124.72	4194370.99	-6.63
R455_B_1	581129.72	4194371.11	-6.64
R456_B_1	581134.72	4194371.23	-6.64
R457_B_1	581139.72	4194371.35	-6.64
R458_B_1	581144.72	4194371.47	-6.63
R459_B_1	581149.71	4194371.59	-6.64
R460_B_1	581154.71	4194371.71	-6.66
R461_B_1	581159.71	4194371.83	-6.7
R462_B_1	581164.71	4194371.95	-6.74
R463_B_1	581169.71	4194372.07	-6.76
R464_B_1	581174.71	4194372.19	-6.8
R465_B_1	581179.71	4194372.31	-6.86
R466_B_1	581129.6	4194376.11	-6.59
R467_B_1	581134.6	4194376.23	-6.59
R468_B_1	581139.6	4194376.35	-6.58
R469_B_1	581144.6	4194376.47	-6.58
R470_B_1	581149.59	4194376.59	-6.59
R471_B_1	581154.59	4194376.71	-6.63
R472_B_1	581159.59	4194376.83	-6.71
R473_B_1	581164.59	4194376.95	-6.8
R474_B_1	581169.59	4194377.07	-6.87
R475_B_1	581174.59	4194377.19	-6.93
R476_B_1	581179.59	4194377.31	-6.97
R477_B_1	581134.48	4194381.23	-6.49
R478_B_1	581139.48	4194381.35	-6.51
R479_B_1	581144.48	4194381.47	-6.55
R480_B_1	581149.47	4194381.59	-6.59
R481_B_1	581154.47	4194381.71	-6.66
R482_B_1	581159.47	4194381.83	-6.73
R483_B_1	581164.47	4194381.95	-6.81
R484_B_1	581169.47	4194382.07	-6.89
R485_B_1	581174.47	4194382.19	-6.96
R486_B_1	581179.47	4194382.31	-7.02
R487_B_1	581144.36	4194386.47	-6.52
R488_B_1	581149.36	4194386.59	-6.6
R489_B_1	581154.35	4194386.71	-6.68
R490_B_1	581159.35	4194386.83	-6.75
R491_B_1	581164.35	4194386.95	-6.82
R492_B_1	581169.35	4194387.06	-6.91
R493_B_1	581174.35	4194387.19	-6.99
R494_B_1	581179.35	4194387.31	-7.05
R495_B_1	581149.24	4194391.59	-6.57

Receptor ID	UTMx	UTMy	Elevation[1]
R496_B_1	581154.23	4194391.71	-6.65
R497_B_1	581159.23	4194391.82	-6.73
R498_B_1	581164.23	4194391.94	-6.8
R499_B_1	581169.23	4194392.06	-6.88
R500_B_1	581174.23	4194392.18	-6.94
R501_B_1	581179.23	4194392.3	-7
R502_B_1	581159.11	4194396.82	-6.7
R503_B_1	581164.11	4194396.94	-6.79
R504_B_1	581169.11	4194397.06	-6.84
R505_B_1	581174.11	4194397.18	-6.9
R506_B_1	581179.11	4194397.3	-6.95
R507_B_1	581173.99	4194402.18	-6.92
R508_B_1	581178.99	4194402.3	-7
R509_C_1	581072.37	4194259.71	-4.81
R510_C_1	581077.37	4194259.83	-4.7
R511_C_1	581082.36	4194259.95	-4.68
R512_C_1	581087.36	4194260.07	-4.74
R513_C_1	581067.25	4194264.59	-5.1
R514_C_1	581072.25	4194264.71	-4.94
R515_C_1	581077.25	4194264.83	-4.83
R516_C_1	581082.25	4194264.95	-4.8
R517_C_1	581087.24	4194265.07	-4.86
R518_C_1	581062.13	4194269.47	-5.26
R519_C_1	581067.13	4194269.59	-5.21
R520_C_1	581072.13	4194269.71	-5.09
R521_C_1	581077.13	4194269.83	-4.99
R522_C_1	581082.13	4194269.95	-4.91
R523_C_1	581087.12	4194270.07	-4.92
R524_C_1	581052.01	4194274.23	-5.29
R525_C_1	581057.01	4194274.35	-5.3
R526_C_1	581062.01	4194274.47	-5.3
R527_C_1	581067.01	4194274.59	-5.28
R528_C_1	581072.01	4194274.71	-5.21
R529_C_1	581077.01	4194274.83	-5.12
R530_C_1	581082.01	4194274.95	-5.02
R531_C_1	581087	4194275.06	-4.99
R532_C_1	581046.9	4194279.11	-5.29
R533_C_1	581051.89	4194279.23	-5.29
R534_C_1	581056.89	4194279.35	-5.29
R535_C_1	581061.89	4194279.47	-5.3
R536_C_1	581066.89	4194279.58	-5.3
R537_C_1	581071.89	4194279.7	-5.25
R538_C_1	581076.89	4194279.82	-5.19
R539_C_1	581081.89	4194279.94	-5.11
R540_C_1	581086.88	4194280.06	-5.08

Receptor ID	UTMx	UTMy	Elevation[1]
R541_C_1	581051.77	4194284.22	-5.29
R542_C_1	581056.77	4194284.34	-5.29
R543_C_1	581061.77	4194284.46	-5.29
R544_C_1	581066.77	4194284.58	-5.3
R545_C_1	581071.77	4194284.7	-5.28
R546_C_1	581076.77	4194284.82	-5.25
R547_C_1	581081.77	4194284.94	-5.19
R548_C_1	581086.77	4194285.06	-5.16
R549_C_1	581056.65	4194289.34	-5.28
R550_C_1	581061.65	4194289.46	-5.28
R551_C_1	581066.65	4194289.58	-5.29
R552_C_1	581071.65	4194289.7	-5.29
R553_C_1	581076.65	4194289.82	-5.27
R554_C_1	581081.65	4194289.94	-5.24
R555_C_1	581086.65	4194290.06	-5.21
R556_C_1	581061.53	4194294.46	-5.29
R557_C_1	581066.53	4194294.58	-5.29
R558_C_1	581071.53	4194294.7	-5.29
R559_C_1	581076.53	4194294.82	-5.29
R560_C_1	581081.53	4194294.94	-5.27
R561_C_1	581086.53	4194295.06	-5.25
R562_C_1	581061.41	4194299.46	-5.37
R563_C_1	581066.41	4194299.58	-5.35
R564_C_1	581071.41	4194299.7	-5.32
R565_C_1	581076.41	4194299.82	-5.29
R566_C_1	581081.41	4194299.94	-5.28
R567_C_1	581086.41	4194300.06	-5.26
R568_C_1	581066.29	4194304.58	-5.4
R569_C_1	581071.29	4194304.7	-5.34
R570_C_1	581076.29	4194304.82	-5.29
R571_C_1	581081.29	4194304.94	-5.28
R572_C_1	581086.29	4194305.06	-5.28
R573_C_1	581071.17	4194309.69	-5.39
R574_C_1	581076.17	4194309.81	-5.33
R575_C_1	581081.17	4194309.94	-5.32
R576_C_1	581086.17	4194310.05	-5.31
R577_C_1	581071.05	4194314.69	-5.45
R578_C_1	581076.05	4194314.81	-5.38
R579_C_1	581081.05	4194314.93	-5.37
R580_C_1	581086.05	4194315.05	-5.34
R581_C_1	581075.93	4194319.81	-5.46
R582_C_1	581080.93	4194319.93	-5.42
R583_C_1	581085.93	4194320.05	-5.38
R584_C_1	581080.81	4194324.93	-5.49
R585_C_1	581085.81	4194325.05	-5.44

Receptor ID	UTMx	UTMy	Elevation[1]
R586_C_1	581080.69	4194329.93	-5.71
R587_C_1	581085.69	4194330.05	-5.71
R588_C_1	581085.57	4194335.05	-5.96
R1_A_2	581104.13	4194395.51	-2.74
R2_A_2	581109.13	4194395.63	-2.82
R3_A_2	581114.13	4194395.75	-2.9
R4_A_2	581099.01	4194400.39	-2.61
R5_A_2	581104.01	4194400.51	-2.7
R6_A_2	581109.01	4194400.63	-2.78
R7_A_2	581114.01	4194400.75	-2.88
R8_A_2	581119.01	4194400.86	-2.96
R9_A_2	581093.89	4194405.27	-2.52
R10_A_2	581098.89	4194405.39	-2.59
R11_A_2	581103.89	4194405.51	-2.69
R12_A_2	581108.89	4194405.62	-2.79
R13_A_2	581113.89	4194405.74	-2.89
R14_A_2	581118.89	4194405.86	-2.98
R15_A_2	581093.77	4194410.27	-2.5
R16_A_2	581098.77	4194410.38	-2.56
R17_A_2	581103.77	4194410.5	-2.64
R18_A_2	581108.77	4194410.62	-2.73
R19_A_2	581113.77	4194410.74	-2.81
R20_A_2	581118.77	4194410.86	-2.9
R21_A_2	581123.76	4194410.98	-2.99
R22_A_2	581093.65	4194415.26	-2.48
R23_A_2	581098.65	4194415.38	-2.53
R24_A_2	581103.65	4194415.5	-2.58
R25_A_2	581108.65	4194415.62	-2.64
R26_A_2	581113.65	4194415.74	-2.71
R27_A_2	581118.65	4194415.86	-2.8
R28_A_2	581123.64	4194415.98	-2.89
R29_A_2	581128.64	4194416.1	-2.99
R30_A_2	581133.64	4194416.22	-3.09
R31_A_2	581138.64	4194416.34	-3.19
R32_A_2	581093.53	4194420.26	-2.41
R33_A_2	581098.53	4194420.38	-2.46
R34_A_2	581103.53	4194420.5	-2.51
R35_A_2	581108.53	4194420.62	-2.57
R36_A_2	581113.53	4194420.74	-2.64
R37_A_2	581118.53	4194420.86	-2.73
R38_A_2	581123.53	4194420.98	-2.83
R39_A_2	581128.52	4194421.1	-2.94
R40_A_2	581133.52	4194421.22	-3.05
R41_A_2	581138.52	4194421.34	-3.16
R42_A_2	581143.52	4194421.46	-3.26

Receptor ID	UTMx	UTMy	Elevation[1]
R43_A_2	581148.52	4194421.58	-3.36
R44_A_2	581093.41	4194425.26	-2.31
R45_A_2	581098.41	4194425.38	-2.36
R46_A_2	581103.41	4194425.5	-2.42
R47_A_2	581108.41	4194425.62	-2.5
R48_A_2	581113.41	4194425.74	-2.59
R49_A_2	581118.41	4194425.86	-2.69
R50_A_2	581123.41	4194425.98	-2.79
R51_A_2	581128.4	4194426.1	-2.89
R52_A_2	581133.4	4194426.22	-3.01
R53_A_2	581138.4	4194426.34	-3.13
R54_A_2	581143.4	4194426.46	-3.24
R55_A_2	581148.4	4194426.58	-3.33
R56_A_2	581153.4	4194426.69	-3.39
R57_A_2	581158.4	4194426.81	-3.47
R58_A_2	581093.29	4194430.26	-2.23
R59_A_2	581098.29	4194430.38	-2.3
R60_A_2	581103.29	4194430.5	-2.37
R61_A_2	581108.29	4194430.62	-2.45
R62_A_2	581113.29	4194430.74	-2.55
R63_A_2	581118.29	4194430.86	-2.65
R64_A_2	581123.29	4194430.98	-2.77
R65_A_2	581128.28	4194431.1	-2.87
R66_A_2	581133.28	4194431.22	-2.98
R67_A_2	581138.28	4194431.34	-3.08
R68_A_2	581143.28	4194431.46	-3.17
R69_A_2	581148.28	4194431.57	-3.26
R70_A_2	581153.28	4194431.69	-3.33
R71_A_2	581158.28	4194431.81	-3.42
R72_A_2	581163.27	4194431.93	-3.53
R73_A_2	581168.27	4194432.05	-3.65
R74_A_2	581093.17	4194435.26	-2.18
R75_A_2	581098.17	4194435.38	-2.28
R76_A_2	581103.17	4194435.5	-2.36
R77_A_2	581108.17	4194435.62	-2.43
R78_A_2	581113.17	4194435.74	-2.51
R79_A_2	581118.17	4194435.86	-2.63
R80_A_2	581123.17	4194435.98	-2.76
R81_A_2	581128.17	4194436.1	-2.86
R82_A_2	581133.16	4194436.21	-2.95
R83_A_2	581138.16	4194436.33	-3.02
R84_A_2	581143.16	4194436.45	-3.09
R85_A_2	581148.16	4194436.57	-3.17
R86_A_2	581153.16	4194436.69	-3.27
R87_A_2	581158.16	4194436.81	-3.38

Receptor ID	UTMx	UTMy	Elevation[1]
R88_A_2	581163.16	4194436.93	-3.49
R89_A_2	581168.15	4194437.05	-3.63
R90_A_2	581093.06	4194440.26	-2.11
R91_A_2	581098.05	4194440.38	-2.22
R92_A_2	581103.05	4194440.5	-2.32
R93_A_2	581108.05	4194440.61	-2.41
R94_A_2	581113.05	4194440.73	-2.49
R95_A_2	581118.05	4194440.85	-2.6
R96_A_2	581123.05	4194440.97	-2.72
R97_A_2	581128.05	4194441.09	-2.81
R98_A_2	581133.04	4194441.21	-2.89
R99_A_2	581138.04	4194441.33	-2.95
R100_A_2	581143.04	4194441.45	-3.03
R101_A_2	581148.04	4194441.57	-3.12
R102_A_2	581153.04	4194441.69	-3.23
R103_A_2	581158.04	4194441.81	-3.34
R104_A_2	581163.04	4194441.93	-3.47
R105_A_2	581168.03	4194442.05	-3.6
R106_A_2	581092.94	4194445.26	-2.02
R107_A_2	581097.93	4194445.37	-2.14
R108_A_2	581102.93	4194445.49	-2.26
R109_A_2	581107.93	4194445.61	-2.38
R110_A_2	581112.93	4194445.73	-2.47
R111_A_2	581117.93	4194445.85	-2.57
R112_A_2	581122.93	4194445.97	-2.66
R113_A_2	581127.93	4194446.09	-2.72
R114_A_2	581132.92	4194446.21	-2.8
R115_A_2	581137.92	4194446.33	-2.88
R116_A_2	581142.92	4194446.45	-2.98
R117_A_2	581147.92	4194446.57	-3.08
R118_A_2	581152.92	4194446.69	-3.19
R119_A_2	581157.92	4194446.81	-3.32
R120_A_2	581162.92	4194446.93	-3.45
R121_A_2	581167.91	4194447.05	-3.56
R122_A_2	581092.82	4194450.25	-1.94
R123_A_2	581097.82	4194450.37	-2.07
R124_A_2	581102.81	4194450.49	-2.21
R125_A_2	581107.81	4194450.61	-2.33
R126_A_2	581112.81	4194450.73	-2.43
R127_A_2	581117.81	4194450.85	-2.51
R128_A_2	581122.81	4194450.97	-2.59
R129_A_2	581127.81	4194451.09	-2.65
R130_A_2	581132.81	4194451.21	-2.73
R131_A_2	581137.8	4194451.33	-2.84
R132_A_2	581142.8	4194451.45	-2.95

Receptor ID	UTMx	UTMy	Elevation[1]
R133_A_2	581147.8	4194451.57	-3.06
R134_A_2	581152.8	4194451.69	-3.17
R135_A_2	581157.8	4194451.81	-3.29
R136_A_2	581162.8	4194451.93	-3.41
R137_A_2	581167.79	4194452.05	-3.51
R138_A_2	581092.7	4194455.25	-1.89
R139_A_2	581097.69	4194455.37	-2.02
R140_A_2	581102.69	4194455.49	-2.15
R141_A_2	581107.69	4194455.61	-2.28
R142_A_2	581112.69	4194455.73	-2.37
R143_A_2	581117.69	4194455.85	-2.44
R144_A_2	581122.69	4194455.97	-2.51
R145_A_2	581127.69	4194456.09	-2.59
R146_A_2	581132.68	4194456.21	-2.69
R147_A_2	581137.68	4194456.33	-2.81
R148_A_2	581142.68	4194456.45	-2.93
R149_A_2	581147.68	4194456.57	-3.05
R150_A_2	581152.68	4194456.69	-3.16
R151_A_2	581157.68	4194456.81	-3.26
R152_A_2	581162.68	4194456.93	-3.36
R153_A_2	581167.67	4194457.05	-3.46
R154_A_2	581092.58	4194460.25	-1.84
R155_A_2	581097.58	4194460.37	-1.97
R156_A_2	581102.57	4194460.49	-2.11
R157_A_2	581107.57	4194460.61	-2.23
R158_A_2	581112.57	4194460.73	-2.32
R159_A_2	581117.57	4194460.85	-2.4
R160_A_2	581122.57	4194460.97	-2.47
R161_A_2	581127.57	4194461.09	-2.56
R162_A_2	581132.57	4194461.21	-2.67
R163_A_2	581137.56	4194461.33	-2.79
R164_A_2	581142.56	4194461.45	-2.91
R165_A_2	581147.56	4194461.57	-3.03
R166_A_2	581152.56	4194461.69	-3.12
R167_A_2	581157.56	4194461.81	-3.22
R168_A_2	581162.56	4194461.92	-3.31
R169_A_2	581167.56	4194462.04	-3.42
R170_A_2	581092.46	4194465.25	-1.81
R171_A_2	581097.46	4194465.37	-1.93
R172_A_2	581102.45	4194465.49	-2.06
R173_A_2	581107.45	4194465.61	-2.19
R174_A_2	581112.45	4194465.73	-2.28
R175_A_2	581117.45	4194465.85	-2.38
R176_A_2	581122.45	4194465.97	-2.47
R177_A_2	581127.45	4194466.09	-2.56

Receptor ID	UTMx	UTMy	Elevation[1]
R178_A_2	581132.45	4194466.21	-2.67
R179_A_2	581137.44	4194466.32	-2.78
R180_A_2	581142.44	4194466.45	-2.89
R181_A_2	581147.44	4194466.56	-2.99
R182_A_2	581152.44	4194466.68	-3.08
R183_A_2	581157.44	4194466.8	-3.18
R184_A_2	581162.44	4194466.92	-3.27
R185_A_2	581167.44	4194467.04	-3.38
R186_A_2	581092.34	4194470.25	-1.8
R187_A_2	581097.34	4194470.37	-1.92
R188_A_2	581102.34	4194470.49	-2.05
R189_A_2	581107.33	4194470.61	-2.16
R190_A_2	581112.33	4194470.73	-2.26
R191_A_2	581117.33	4194470.85	-2.36
R192_A_2	581122.33	4194470.97	-2.46
R193_A_2	581127.33	4194471.09	-2.56
R194_A_2	581132.33	4194471.2	-2.67
R195_A_2	581137.33	4194471.32	-2.79
R196_A_2	581142.32	4194471.44	-2.89
R197_A_2	581147.32	4194471.56	-2.99
R198_A_2	581152.32	4194471.68	-3.07
R199_A_2	581157.32	4194471.8	-3.16
R200_A_2	581162.32	4194471.92	-3.27
R201_A_2	581167.32	4194472.04	-3.39
R202_A_2	581092.22	4194475.25	-1.86
R203_A_2	581097.22	4194475.37	-1.96
R204_A_2	581102.22	4194475.49	-2.07
R205_A_2	581107.21	4194475.61	-2.17
R206_A_2	581112.21	4194475.72	-2.26
R207_A_2	581117.21	4194475.84	-2.36
R208_A_2	581122.21	4194475.96	-2.46
R209_A_2	581127.21	4194476.08	-2.56
R210_A_2	581132.21	4194476.2	-2.67
R211_A_2	581137.21	4194476.32	-2.8
R212_A_2	581142.2	4194476.44	-2.91
R213_A_2	581147.2	4194476.56	-3.01
R214_A_2	581152.2	4194476.68	-3.08
R215_A_2	581157.2	4194476.8	-3.18
R216_A_2	581162.2	4194476.92	-3.3
R217_A_2	581167.2	4194477.04	-3.42
R218_A_2	581092.1	4194480.25	-1.92
R219_A_2	581097.1	4194480.36	-2.01
R220_A_2	581102.1	4194480.48	-2.1
R221_A_2	581107.09	4194480.6	-2.19
R222_A_2	581112.09	4194480.72	-2.27

Receptor ID	UTMx	UTMy	Elevation[1]
R223_A_2	581117.09	4194480.84	-2.36
R224_A_2	581122.09	4194480.96	-2.46
R225_A_2	581127.09	4194481.08	-2.56
R226_A_2	581132.09	4194481.2	-2.67
R227_A_2	581137.09	4194481.32	-2.81
R228_A_2	581142.08	4194481.44	-2.93
R229_A_2	581147.08	4194481.56	-3.04
R230_A_2	581152.08	4194481.68	-3.11
R231_A_2	581157.08	4194481.8	-3.21
R232_A_2	581162.08	4194481.92	-3.33
R233_A_2	581167.08	4194482.04	-3.43
R234_A_2	581091.98	4194485.24	-2.01
R235_A_2	581096.98	4194485.36	-2.08
R236_A_2	581101.98	4194485.48	-2.15
R237_A_2	581106.98	4194485.6	-2.23
R238_A_2	581111.97	4194485.72	-2.29
R239_A_2	581116.97	4194485.84	-2.37
R240_A_2	581121.97	4194485.96	-2.45
R241_A_2	581126.97	4194486.08	-2.56
R242_A_2	581131.97	4194486.2	-2.68
R243_A_2	581136.97	4194486.32	-2.81
R244_A_2	581141.97	4194486.44	-2.93
R245_A_2	581146.96	4194486.56	-3.05
R246_A_2	581151.96	4194486.68	-3.15
R247_A_2	581156.96	4194486.8	-3.25
R248_A_2	581161.96	4194486.92	-3.36
R249_A_2	581166.96	4194487.04	-3.41
R250_A_2	581091.86	4194490.24	-2.11
R251_A_2	581096.86	4194490.36	-2.16
R252_A_2	581101.86	4194490.48	-2.21
R253_A_2	581106.86	4194490.6	-2.27
R254_A_2	581111.85	4194490.72	-2.32
R255_A_2	581116.85	4194490.84	-2.39
R256_A_2	581121.85	4194490.96	-2.47
R257_A_2	581126.85	4194491.08	-2.57
R258_A_2	581131.85	4194491.2	-2.69
R259_A_2	581136.85	4194491.32	-2.82
R260_A_2	581141.85	4194491.44	-2.95
R261_A_2	581146.84	4194491.56	-3.08
R262_A_2	581151.84	4194491.68	-3.19
R263_A_2	581156.84	4194491.8	-3.27
R264_A_2	581161.84	4194491.92	-3.33
R265_A_2	581166.84	4194492.04	-3.33
R266_B_2	581167.1	4194271.98	-1.64
R267_B_2	581172.1	4194272.1	-1.64

Receptor ID	UTMx	UTMy	Elevation[1]
R268_B_2	581177.1	4194272.22	-1.67
R269_B_2	581182.1	4194272.34	-1.7
R270_B_2	581166.98	4194276.98	-1.71
R271_B_2	581171.98	4194277.1	-1.7
R272_B_2	581176.98	4194277.22	-1.7
R273_B_2	581181.98	4194277.34	-1.72
R274_B_2	581166.86	4194281.98	-1.79
R275_B_2	581171.86	4194282.1	-1.75
R276_B_2	581176.86	4194282.22	-1.75
R277_B_2	581181.86	4194282.33	-1.75
R278_B_2	581166.74	4194286.97	-1.88
R279_B_2	581171.74	4194287.09	-1.83
R280_B_2	581176.74	4194287.21	-1.81
R281_B_2	581181.74	4194287.33	-1.8
R282_B_2	581166.62	4194291.97	-1.98
R283_B_2	581171.62	4194292.09	-1.93
R284_B_2	581176.62	4194292.21	-1.89
R285_B_2	581181.62	4194292.33	-1.86
R286_B_2	581166.5	4194296.97	-2.07
R287_B_2	581171.5	4194297.09	-2.02
R288_B_2	581176.5	4194297.21	-1.98
R289_B_2	581181.5	4194297.33	-1.94
R290_B_2	581166.38	4194301.97	-2.14
R291_B_2	581171.38	4194302.09	-2.12
R292_B_2	581176.38	4194302.21	-2.08
R293_B_2	581181.38	4194302.33	-2.04
R294_B_2	581166.26	4194306.97	-2.2
R295_B_2	581171.26	4194307.09	-2.19
R296_B_2	581176.26	4194307.21	-2.17
R297_B_2	581181.26	4194307.33	-2.14
R298_B_2	581166.14	4194311.97	-2.25
R299_B_2	581171.14	4194312.09	-2.25
R300_B_2	581176.14	4194312.21	-2.24
R301_B_2	581181.14	4194312.33	-2.23
R302_B_2	581166.03	4194316.97	-2.3
R303_B_2	581171.02	4194317.09	-2.3
R304_B_2	581176.02	4194317.21	-2.3
R305_B_2	581181.02	4194317.32	-2.3
R306_B_2	581105.92	4194320.53	-2.44
R307_B_2	581110.92	4194320.65	-2.5
R308_B_2	581165.91	4194321.96	-2.34
R309_B_2	581170.9	4194322.08	-2.35
R310_B_2	581175.9	4194322.2	-2.35
R311_B_2	581180.9	4194322.32	-2.36
R312_B_2	581105.8	4194325.53	-2.51

Receptor ID	UTMx	UTMy	Elevation[1]
R313_B_2	581110.8	4194325.65	-2.57
R314_B_2	581115.8	4194325.77	-2.63
R315_B_2	581165.78	4194326.96	-2.42
R316_B_2	581170.78	4194327.08	-2.42
R317_B_2	581175.78	4194327.2	-2.42
R318_B_2	581180.78	4194327.32	-2.41
R319_B_2	581090.69	4194330.17	-2.71
R320_B_2	581095.69	4194330.29	-2.74
R321_B_2	581100.68	4194330.41	-2.79
R322_B_2	581105.68	4194330.53	-2.84
R323_B_2	581110.68	4194330.65	-2.87
R324_B_2	581115.68	4194330.77	-2.9
R325_B_2	581120.68	4194330.89	-2.89
R326_B_2	581125.68	4194331.01	-2.88
R327_B_2	581130.68	4194331.12	-2.86
R328_B_2	581135.67	4194331.24	-2.84
R329_B_2	581140.67	4194331.36	-2.82
R330_B_2	581145.67	4194331.48	-2.78
R331_B_2	581150.67	4194331.6	-2.72
R332_B_2	581155.67	4194331.72	-2.66
R333_B_2	581160.67	4194331.84	-2.6
R334_B_2	581165.67	4194331.96	-2.56
R335_B_2	581170.66	4194332.08	-2.53
R336_B_2	581175.66	4194332.2	-2.5
R337_B_2	581180.66	4194332.32	-2.47
R338_B_2	581090.57	4194335.17	-3.01
R339_B_2	581095.57	4194335.29	-3.06
R340_B_2	581100.57	4194335.41	-3.11
R341_B_2	581105.56	4194335.52	-3.15
R342_B_2	581110.56	4194335.65	-3.16
R343_B_2	581115.56	4194335.76	-3.15
R344_B_2	581120.56	4194335.88	-3.11
R345_B_2	581125.56	4194336	-3.07
R346_B_2	581130.56	4194336.12	-3.03
R347_B_2	581135.56	4194336.24	-3.01
R348_B_2	581140.55	4194336.36	-3
R349_B_2	581145.55	4194336.48	-2.98
R350_B_2	581150.55	4194336.6	-2.94
R351_B_2	581155.55	4194336.72	-2.87
R352_B_2	581160.55	4194336.84	-2.79
R353_B_2	581165.55	4194336.96	-2.72
R354_B_2	581170.55	4194337.08	-2.68
R355_B_2	581175.54	4194337.2	-2.63
R356_B_2	581180.54	4194337.32	-2.59
R357_B_2	581090.45	4194340.16	-3.13

Receptor ID	UTMx	UTMy	Elevation[1]
R358_B_2	581095.45	4194340.29	-3.18
R359_B_2	581100.45	4194340.4	-3.23
R360_B_2	581105.44	4194340.52	-3.28
R361_B_2	581110.44	4194340.64	-3.31
R362_B_2	581115.44	4194340.76	-3.32
R363_B_2	581120.44	4194340.88	-3.3
R364_B_2	581125.44	4194341	-3.28
R365_B_2	581130.44	4194341.12	-3.27
R366_B_2	581135.44	4194341.24	-3.25
R367_B_2	581140.43	4194341.36	-3.23
R368_B_2	581145.43	4194341.48	-3.17
R369_B_2	581150.43	4194341.6	-3.11
R370_B_2	581155.43	4194341.72	-3.05
R371_B_2	581160.43	4194341.84	-3.01
R372_B_2	581165.43	4194341.96	-2.97
R373_B_2	581170.43	4194342.08	-2.93
R374_B_2	581175.42	4194342.2	-2.88
R375_B_2	581180.42	4194342.32	-2.84
R376_B_2	581090.33	4194345.16	-3.25
R377_B_2	581095.33	4194345.28	-3.3
R378_B_2	581100.33	4194345.4	-3.35
R379_B_2	581105.32	4194345.52	-3.4
R380_B_2	581110.32	4194345.64	-3.45
R381_B_2	581115.32	4194345.76	-3.48
R382_B_2	581120.32	4194345.88	-3.49
R383_B_2	581125.32	4194346	-3.49
R384_B_2	581130.32	4194346.12	-3.49
R385_B_2	581135.32	4194346.24	-3.47
R386_B_2	581140.31	4194346.36	-3.44
R387_B_2	581145.31	4194346.48	-3.36
R388_B_2	581150.31	4194346.6	-3.29
R389_B_2	581155.31	4194346.72	-3.23
R390_B_2	581160.31	4194346.84	-3.21
R391_B_2	581165.31	4194346.96	-3.2
R392_B_2	581170.31	4194347.08	-3.16
R393_B_2	581175.3	4194347.2	-3.12
R394_B_2	581180.3	4194347.32	-3.08
R395_B_2	581100.21	4194350.4	-3.35
R396_B_2	581105.21	4194350.52	-3.42
R397_B_2	581110.2	4194350.64	-3.48
R398_B_2	581115.2	4194350.76	-3.55
R399_B_2	581120.2	4194350.88	-3.57
R400_B_2	581125.2	4194351	-3.59
R401_B_2	581130.2	4194351.12	-3.6
R402_B_2	581135.2	4194351.24	-3.59

Receptor ID	UTMx	UTMy	Elevation[1]
R403_B_2	581140.19	4194351.36	-3.57
R404_B_2	581145.19	4194351.48	-3.52
R405_B_2	581150.19	4194351.6	-3.47
R406_B_2	581155.19	4194351.72	-3.41
R407_B_2	581160.19	4194351.84	-3.39
R408_B_2	581165.19	4194351.96	-3.36
R409_B_2	581170.19	4194352.08	-3.35
R410_B_2	581175.18	4194352.19	-3.32
R411_B_2	581180.18	4194352.31	-3.28
R412_B_2	581110.08	4194355.64	-3.52
R413_B_2	581115.08	4194355.76	-3.61
R414_B_2	581120.08	4194355.88	-3.66
R415_B_2	581125.08	4194356	-3.69
R416_B_2	581130.08	4194356.12	-3.7
R417_B_2	581135.08	4194356.24	-3.7
R418_B_2	581140.08	4194356.36	-3.7
R419_B_2	581145.07	4194356.48	-3.67
R420_B_2	581150.07	4194356.6	-3.63
R421_B_2	581155.07	4194356.72	-3.58
R422_B_2	581160.07	4194356.84	-3.55
R423_B_2	581165.07	4194356.95	-3.52
R424_B_2	581170.07	4194357.07	-3.51
R425_B_2	581175.07	4194357.19	-3.49
R426_B_2	581180.06	4194357.31	-3.47
R427_B_2	581114.96	4194360.76	-3.57
R428_B_2	581119.96	4194360.88	-3.64
R429_B_2	581124.96	4194361	-3.68
R430_B_2	581129.96	4194361.12	-3.7
R431_B_2	581134.96	4194361.24	-3.7
R432_B_2	581139.96	4194361.36	-3.69
R433_B_2	581144.95	4194361.48	-3.68
R434_B_2	581149.95	4194361.59	-3.67
R435_B_2	581154.95	4194361.71	-3.64
R436_B_2	581159.95	4194361.83	-3.62
R437_B_2	581164.95	4194361.95	-3.6
R438_B_2	581169.95	4194362.07	-3.58
R439_B_2	581174.95	4194362.19	-3.58
R440_B_2	581179.94	4194362.31	-3.61
R441_B_2	581119.84	4194365.88	-3.61
R442_B_2	581124.84	4194366	-3.68
R443_B_2	581129.84	4194366.11	-3.7
R444_B_2	581134.84	4194366.23	-3.7
R445_B_2	581139.84	4194366.35	-3.69
R446_B_2	581144.84	4194366.47	-3.69
R447_B_2	581149.83	4194366.59	-3.69

Receptor ID	UTMx	UTMy	Elevation[1]
R448_B_2	581154.83	4194366.71	-3.7
R449_B_2	581159.83	4194366.83	-3.69
R450_B_2	581164.83	4194366.95	-3.68
R451_B_2	581169.83	4194367.07	-3.65
R452_B_2	581174.83	4194367.19	-3.68
R453_B_2	581179.83	4194367.31	-3.74
R454_B_2	581124.72	4194370.99	-3.63
R455_B_2	581129.72	4194371.11	-3.64
R456_B_2	581134.72	4194371.23	-3.64
R457_B_2	581139.72	4194371.35	-3.64
R458_B_2	581144.72	4194371.47	-3.63
R459_B_2	581149.71	4194371.59	-3.64
R460_B_2	581154.71	4194371.71	-3.66
R461_B_2	581159.71	4194371.83	-3.7
R462_B_2	581164.71	4194371.95	-3.74
R463_B_2	581169.71	4194372.07	-3.76
R464_B_2	581174.71	4194372.19	-3.8
R465_B_2	581179.71	4194372.31	-3.86
R466_B_2	581129.6	4194376.11	-3.59
R467_B_2	581134.6	4194376.23	-3.59
R468_B_2	581139.6	4194376.35	-3.58
R469_B_2	581144.6	4194376.47	-3.58
R470_B_2	581149.59	4194376.59	-3.59
R471_B_2	581154.59	4194376.71	-3.63
R472_B_2	581159.59	4194376.83	-3.71
R473_B_2	581164.59	4194376.95	-3.8
R474_B_2	581169.59	4194377.07	-3.87
R475_B_2	581174.59	4194377.19	-3.93
R476_B_2	581179.59	4194377.31	-3.97
R477_B_2	581134.48	4194381.23	-3.49
R478_B_2	581139.48	4194381.35	-3.51
R479_B_2	581144.48	4194381.47	-3.55
R480_B_2	581149.47	4194381.59	-3.59
R481_B_2	581154.47	4194381.71	-3.66
R482_B_2	581159.47	4194381.83	-3.73
R483_B_2	581164.47	4194381.95	-3.81
R484_B_2	581169.47	4194382.07	-3.89
R485_B_2	581174.47	4194382.19	-3.96
R486_B_2	581179.47	4194382.31	-4.02
R487_B_2	581144.36	4194386.47	-3.52
R488_B_2	581149.36	4194386.59	-3.6
R489_B_2	581154.35	4194386.71	-3.68
R490_B_2	581159.35	4194386.83	-3.75
R491_B_2	581164.35	4194386.95	-3.82
R492_B_2	581169.35	4194387.06	-3.91

Receptor ID	UTMx	UTMy	Elevation[1]
R493_B_2	581174.35	4194387.19	-3.99
R494_B_2	581179.35	4194387.31	-4.05
R495_B_2	581149.24	4194391.59	-3.57
R496_B_2	581154.23	4194391.71	-3.65
R497_B_2	581159.23	4194391.82	-3.73
R498_B_2	581164.23	4194391.94	-3.8
R499_B_2	581169.23	4194392.06	-3.88
R500_B_2	581174.23	4194392.18	-3.94
R501_B_2	581179.23	4194392.3	-4
R502_B_2	581159.11	4194396.82	-3.7
R503_B_2	581164.11	4194396.94	-3.79
R504_B_2	581169.11	4194397.06	-3.84
R505_B_2	581174.11	4194397.18	-3.9
R506_B_2	581179.11	4194397.3	-3.95
R507_B_2	581173.99	4194402.18	-3.92
R508_B_2	581178.99	4194402.3	-4
R509_C_2	581072.37	4194259.71	-1.81
R510_C_2	581077.37	4194259.83	-1.7
R511_C_2	581082.36	4194259.95	-1.68
R512_C_2	581087.36	4194260.07	-1.74
R513_C_2	581067.25	4194264.59	-2.1
R514_C_2	581072.25	4194264.71	-1.94
R515_C_2	581077.25	4194264.83	-1.83
R516_C_2	581082.25	4194264.95	-1.8
R517_C_2	581087.24	4194265.07	-1.86
R518_C_2	581062.13	4194269.47	-2.26
R519_C_2	581067.13	4194269.59	-2.21
R520_C_2	581072.13	4194269.71	-2.09
R521_C_2	581077.13	4194269.83	-1.99
R522_C_2	581082.13	4194269.95	-1.91
R523_C_2	581087.12	4194270.07	-1.92
R524_C_2	581052.01	4194274.23	-2.29
R525_C_2	581057.01	4194274.35	-2.3
R526_C_2	581062.01	4194274.47	-2.3
R527_C_2	581067.01	4194274.59	-2.28
R528_C_2	581072.01	4194274.71	-2.21
R529_C_2	581077.01	4194274.83	-2.12
R530_C_2	581082.01	4194274.95	-2.02
R531_C_2	581087	4194275.06	-1.99
R532_C_2	581046.9	4194279.11	-2.29
R533_C_2	581051.89	4194279.23	-2.29
R534_C_2	581056.89	4194279.35	-2.29
R535_C_2	581061.89	4194279.47	-2.3
R536_C_2	581066.89	4194279.58	-2.3
R537_C_2	581071.89	4194279.7	-2.25

Receptor ID	UTMx	UTMy	Elevation[1]
R538_C_2	581076.89	4194279.82	-2.19
R539_C_2	581081.89	4194279.94	-2.11
R540_C_2	581086.88	4194280.06	-2.08
R541_C_2	581051.77	4194284.22	-2.29
R542_C_2	581056.77	4194284.34	-2.29
R543_C_2	581061.77	4194284.46	-2.29
R544_C_2	581066.77	4194284.58	-2.3
R545_C_2	581071.77	4194284.7	-2.28
R546_C_2	581076.77	4194284.82	-2.25
R547_C_2	581081.77	4194284.94	-2.19
R548_C_2	581086.77	4194285.06	-2.16
R549_C_2	581056.65	4194289.34	-2.28
R550_C_2	581061.65	4194289.46	-2.28
R551_C_2	581066.65	4194289.58	-2.29
R552_C_2	581071.65	4194289.7	-2.29
R553_C_2	581076.65	4194289.82	-2.27
R554_C_2	581081.65	4194289.94	-2.24
R555_C_2	581086.65	4194290.06	-2.21
R556_C_2	581061.53	4194294.46	-2.29
R557_C_2	581066.53	4194294.58	-2.29
R558_C_2	581071.53	4194294.7	-2.29
R559_C_2	581076.53	4194294.82	-2.29
R560_C_2	581081.53	4194294.94	-2.27
R561_C_2	581086.53	4194295.06	-2.25
R562_C_2	581061.41	4194299.46	-2.37
R563_C_2	581066.41	4194299.58	-2.35
R564_C_2	581071.41	4194299.7	-2.32
R565_C_2	581076.41	4194299.82	-2.29
R566_C_2	581081.41	4194299.94	-2.28
R567_C_2	581086.41	4194300.06	-2.26
R568_C_2	581066.29	4194304.58	-2.4
R569_C_2	581071.29	4194304.7	-2.34
R570_C_2	581076.29	4194304.82	-2.29
R571_C_2	581081.29	4194304.94	-2.28
R572_C_2	581086.29	4194305.06	-2.28
R573_C_2	581071.17	4194309.69	-2.39
R574_C_2	581076.17	4194309.81	-2.33
R575_C_2	581081.17	4194309.94	-2.32
R576_C_2	581086.17	4194310.05	-2.31
R577_C_2	581071.05	4194314.69	-2.45
R578_C_2	581076.05	4194314.81	-2.38
R579_C_2	581081.05	4194314.93	-2.37
R580_C_2	581086.05	4194315.05	-2.34
R581_C_2	581075.93	4194319.81	-2.46
R582_C_2	581080.93	4194319.93	-2.42

Receptor ID	UTMx	UTMy	Elevation[1]
R583_C_2	581085.93	4194320.05	-2.38
R584_C_2	581080.81	4194324.93	-2.49
R585_C_2	581085.81	4194325.05	-2.44
R586_C_2	581080.69	4194329.93	-2.71
R587_C_2	581085.69	4194330.05	-2.71
R588_C_2	581085.57	4194335.05	-2.96
R1_A_3	581104.13	4194395.51	0.26
R2_A_3	581109.13	4194395.63	0.18
R3_A_3	581114.13	4194395.75	0.1
R4_A_3	581099.01	4194400.39	0.39
R5_A_3	581104.01	4194400.51	0.3
R6_A_3	581109.01	4194400.63	0.22
R7_A_3	581114.01	4194400.75	0.12
R8_A_3	581119.01	4194400.86	0.04
R9_A_3	581093.89	4194405.27	0.48
R10_A_3	581098.89	4194405.39	0.41
R11_A_3	581103.89	4194405.51	0.31
R12_A_3	581108.89	4194405.62	0.21
R13_A_3	581113.89	4194405.74	0.11
R14_A_3	581118.89	4194405.86	0.02
R15_A_3	581093.77	4194410.27	0.5
R16_A_3	581098.77	4194410.38	0.44
R17_A_3	581103.77	4194410.5	0.36
R18_A_3	581108.77	4194410.62	0.27
R19_A_3	581113.77	4194410.74	0.19
R20_A_3	581118.77	4194410.86	0.1
R21_A_3	581123.76	4194410.98	0.01
R22_A_3	581093.65	4194415.26	0.52
R23_A_3	581098.65	4194415.38	0.47
R24_A_3	581103.65	4194415.5	0.42
R25_A_3	581108.65	4194415.62	0.36
R26_A_3	581113.65	4194415.74	0.29
R27_A_3	581118.65	4194415.86	0.2
R28_A_3	581123.64	4194415.98	0.11
R29_A_3	581128.64	4194416.1	0.01
R30_A_3	581133.64	4194416.22	-0.09
R31_A_3	581138.64	4194416.34	-0.19
R32_A_3	581093.53	4194420.26	0.59
R33_A_3	581098.53	4194420.38	0.54
R34_A_3	581103.53	4194420.5	0.49
R35_A_3	581108.53	4194420.62	0.43
R36_A_3	581113.53	4194420.74	0.36
R37_A_3	581118.53	4194420.86	0.27
R38_A_3	581123.53	4194420.98	0.17
R39_A_3	581128.52	4194421.1	0.06

Receptor ID	UTMx	UTMy	Elevation[1]
R40_A_3	581133.52	4194421.22	-0.05
R41_A_3	581138.52	4194421.34	-0.16
R42_A_3	581143.52	4194421.46	-0.26
R43_A_3	581148.52	4194421.58	-0.36
R44_A_3	581093.41	4194425.26	0.69
R45_A_3	581098.41	4194425.38	0.64
R46_A_3	581103.41	4194425.5	0.58
R47_A_3	581108.41	4194425.62	0.5
R48_A_3	581113.41	4194425.74	0.41
R49_A_3	581118.41	4194425.86	0.31
R50_A_3	581123.41	4194425.98	0.21
R51_A_3	581128.4	4194426.1	0.11
R52_A_3	581133.4	4194426.22	-0.01
R53_A_3	581138.4	4194426.34	-0.13
R54_A_3	581143.4	4194426.46	-0.24
R55_A_3	581148.4	4194426.58	-0.33
R56_A_3	581153.4	4194426.69	-0.39
R57_A_3	581158.4	4194426.81	-0.47
R58_A_3	581093.29	4194430.26	0.77
R59_A_3	581098.29	4194430.38	0.7
R60_A_3	581103.29	4194430.5	0.63
R61_A_3	581108.29	4194430.62	0.55
R62_A_3	581113.29	4194430.74	0.45
R63_A_3	581118.29	4194430.86	0.35
R64_A_3	581123.29	4194430.98	0.23
R65_A_3	581128.28	4194431.1	0.13
R66_A_3	581133.28	4194431.22	0.02
R67_A_3	581138.28	4194431.34	-0.08
R68_A_3	581143.28	4194431.46	-0.17
R69_A_3	581148.28	4194431.57	-0.26
R70_A_3	581153.28	4194431.69	-0.33
R71_A_3	581158.28	4194431.81	-0.42
R72_A_3	581163.27	4194431.93	-0.53
R73_A_3	581168.27	4194432.05	-0.65
R74_A_3	581093.17	4194435.26	0.82
R75_A_3	581098.17	4194435.38	0.72
R76_A_3	581103.17	4194435.5	0.64
R77_A_3	581108.17	4194435.62	0.57
R78_A_3	581113.17	4194435.74	0.49
R79_A_3	581118.17	4194435.86	0.37
R80_A_3	581123.17	4194435.98	0.24
R81_A_3	581128.17	4194436.1	0.14
R82_A_3	581133.16	4194436.21	0.05
R83_A_3	581138.16	4194436.33	-0.02
R84_A_3	581143.16	4194436.45	-0.09

Receptor ID	UTMx	UTMy	Elevation[1]
R85_A_3	581148.16	4194436.57	-0.17
R86_A_3	581153.16	4194436.69	-0.27
R87_A_3	581158.16	4194436.81	-0.38
R88_A_3	581163.16	4194436.93	-0.49
R89_A_3	581168.15	4194437.05	-0.63
R90_A_3	581093.06	4194440.26	0.89
R91_A_3	581098.05	4194440.38	0.78
R92_A_3	581103.05	4194440.5	0.68
R93_A_3	581108.05	4194440.61	0.59
R94_A_3	581113.05	4194440.73	0.51
R95_A_3	581118.05	4194440.85	0.4
R96_A_3	581123.05	4194440.97	0.28
R97_A_3	581128.05	4194441.09	0.19
R98_A_3	581133.04	4194441.21	0.11
R99_A_3	581138.04	4194441.33	0.05
R100_A_3	581143.04	4194441.45	-0.03
R101_A_3	581148.04	4194441.57	-0.12
R102_A_3	581153.04	4194441.69	-0.23
R103_A_3	581158.04	4194441.81	-0.34
R104_A_3	581163.04	4194441.93	-0.47
R105_A_3	581168.03	4194442.05	-0.6
R106_A_3	581092.94	4194445.26	0.98
R107_A_3	581097.93	4194445.37	0.86
R108_A_3	581102.93	4194445.49	0.74
R109_A_3	581107.93	4194445.61	0.62
R110_A_3	581112.93	4194445.73	0.53
R111_A_3	581117.93	4194445.85	0.43
R112_A_3	581122.93	4194445.97	0.34
R113_A_3	581127.93	4194446.09	0.28
R114_A_3	581132.92	4194446.21	0.2
R115_A_3	581137.92	4194446.33	0.12
R116_A_3	581142.92	4194446.45	0.02
R117_A_3	581147.92	4194446.57	-0.08
R118_A_3	581152.92	4194446.69	-0.19
R119_A_3	581157.92	4194446.81	-0.32
R120_A_3	581162.92	4194446.93	-0.45
R121_A_3	581167.91	4194447.05	-0.56
R122_A_3	581092.82	4194450.25	1.06
R123_A_3	581097.82	4194450.37	0.93
R124_A_3	581102.81	4194450.49	0.79
R125_A_3	581107.81	4194450.61	0.67
R126_A_3	581112.81	4194450.73	0.57
R127_A_3	581117.81	4194450.85	0.49
R128_A_3	581122.81	4194450.97	0.41
R129_A_3	581127.81	4194451.09	0.35

Receptor ID	UTMx	UTMy	Elevation[1]
R130_A_3	581132.81	4194451.21	0.27
R131_A_3	581137.8	4194451.33	0.16
R132_A_3	581142.8	4194451.45	0.05
R133_A_3	581147.8	4194451.57	-0.06
R134_A_3	581152.8	4194451.69	-0.17
R135_A_3	581157.8	4194451.81	-0.29
R136_A_3	581162.8	4194451.93	-0.41
R137_A_3	581167.79	4194452.05	-0.51
R138_A_3	581092.7	4194455.25	1.11
R139_A_3	581097.69	4194455.37	0.98
R140_A_3	581102.69	4194455.49	0.85
R141_A_3	581107.69	4194455.61	0.72
R142_A_3	581112.69	4194455.73	0.63
R143_A_3	581117.69	4194455.85	0.56
R144_A_3	581122.69	4194455.97	0.49
R145_A_3	581127.69	4194456.09	0.41
R146_A_3	581132.68	4194456.21	0.31
R147_A_3	581137.68	4194456.33	0.19
R148_A_3	581142.68	4194456.45	0.07
R149_A_3	581147.68	4194456.57	-0.05
R150_A_3	581152.68	4194456.69	-0.16
R151_A_3	581157.68	4194456.81	-0.26
R152_A_3	581162.68	4194456.93	-0.36
R153_A_3	581167.67	4194457.05	-0.46
R154_A_3	581092.58	4194460.25	1.16
R155_A_3	581097.58	4194460.37	1.03
R156_A_3	581102.57	4194460.49	0.89
R157_A_3	581107.57	4194460.61	0.77
R158_A_3	581112.57	4194460.73	0.68
R159_A_3	581117.57	4194460.85	0.6
R160_A_3	581122.57	4194460.97	0.53
R161_A_3	581127.57	4194461.09	0.44
R162_A_3	581132.57	4194461.21	0.33
R163_A_3	581137.56	4194461.33	0.21
R164_A_3	581142.56	4194461.45	0.09
R165_A_3	581147.56	4194461.57	-0.03
R166_A_3	581152.56	4194461.69	-0.12
R167_A_3	581157.56	4194461.81	-0.22
R168_A_3	581162.56	4194461.92	-0.31
R169_A_3	581167.56	4194462.04	-0.42
R170_A_3	581092.46	4194465.25	1.19
R171_A_3	581097.46	4194465.37	1.07
R172_A_3	581102.45	4194465.49	0.94
R173_A_3	581107.45	4194465.61	0.81
R174_A_3	581112.45	4194465.73	0.72

Receptor ID	UTMx	UTMy	Elevation[1]
R175_A_3	581117.45	4194465.85	0.62
R176_A_3	581122.45	4194465.97	0.53
R177_A_3	581127.45	4194466.09	0.44
R178_A_3	581132.45	4194466.21	0.33
R179_A_3	581137.44	4194466.32	0.22
R180_A_3	581142.44	4194466.45	0.11
R181_A_3	581147.44	4194466.56	0.01
R182_A_3	581152.44	4194466.68	-0.08
R183_A_3	581157.44	4194466.8	-0.18
R184_A_3	581162.44	4194466.92	-0.27
R185_A_3	581167.44	4194467.04	-0.38
R186_A_3	581092.34	4194470.25	1.2
R187_A_3	581097.34	4194470.37	1.08
R188_A_3	581102.34	4194470.49	0.95
R189_A_3	581107.33	4194470.61	0.84
R190_A_3	581112.33	4194470.73	0.74
R191_A_3	581117.33	4194470.85	0.64
R192_A_3	581122.33	4194470.97	0.54
R193_A_3	581127.33	4194471.09	0.44
R194_A_3	581132.33	4194471.2	0.33
R195_A_3	581137.33	4194471.32	0.21
R196_A_3	581142.32	4194471.44	0.11
R197_A_3	581147.32	4194471.56	0.01
R198_A_3	581152.32	4194471.68	-0.07
R199_A_3	581157.32	4194471.8	-0.16
R200_A_3	581162.32	4194471.92	-0.27
R201_A_3	581167.32	4194472.04	-0.39
R202_A_3	581092.22	4194475.25	1.14
R203_A_3	581097.22	4194475.37	1.04
R204_A_3	581102.22	4194475.49	0.93
R205_A_3	581107.21	4194475.61	0.83
R206_A_3	581112.21	4194475.72	0.74
R207_A_3	581117.21	4194475.84	0.64
R208_A_3	581122.21	4194475.96	0.54
R209_A_3	581127.21	4194476.08	0.44
R210_A_3	581132.21	4194476.2	0.33
R211_A_3	581137.21	4194476.32	0.2
R212_A_3	581142.2	4194476.44	0.09
R213_A_3	581147.2	4194476.56	-0.01
R214_A_3	581152.2	4194476.68	-0.08
R215_A_3	581157.2	4194476.8	-0.18
R216_A_3	581162.2	4194476.92	-0.3
R217_A_3	581167.2	4194477.04	-0.42
R218_A_3	581092.1	4194480.25	1.08
R219_A_3	581097.1	4194480.36	0.99

Receptor ID	UTMx	UTMy	Elevation[1]
R220_A_3	581102.1	4194480.48	0.9
R221_A_3	581107.09	4194480.6	0.81
R222_A_3	581112.09	4194480.72	0.73
R223_A_3	581117.09	4194480.84	0.64
R224_A_3	581122.09	4194480.96	0.54
R225_A_3	581127.09	4194481.08	0.44
R226_A_3	581132.09	4194481.2	0.33
R227_A_3	581137.09	4194481.32	0.19
R228_A_3	581142.08	4194481.44	0.07
R229_A_3	581147.08	4194481.56	-0.04
R230_A_3	581152.08	4194481.68	-0.11
R231_A_3	581157.08	4194481.8	-0.21
R232_A_3	581162.08	4194481.92	-0.33
R233_A_3	581167.08	4194482.04	-0.43
R234_A_3	581091.98	4194485.24	0.99
R235_A_3	581096.98	4194485.36	0.92
R236_A_3	581101.98	4194485.48	0.85
R237_A_3	581106.98	4194485.6	0.77
R238_A_3	581111.97	4194485.72	0.71
R239_A_3	581116.97	4194485.84	0.63
R240_A_3	581121.97	4194485.96	0.55
R241_A_3	581126.97	4194486.08	0.44
R242_A_3	581131.97	4194486.2	0.32
R243_A_3	581136.97	4194486.32	0.19
R244_A_3	581141.97	4194486.44	0.07
R245_A_3	581146.96	4194486.56	-0.05
R246_A_3	581151.96	4194486.68	-0.15
R247_A_3	581156.96	4194486.8	-0.25
R248_A_3	581161.96	4194486.92	-0.36
R249_A_3	581166.96	4194487.04	-0.41
R250_A_3	581091.86	4194490.24	0.89
R251_A_3	581096.86	4194490.36	0.84
R252_A_3	581101.86	4194490.48	0.79
R253_A_3	581106.86	4194490.6	0.73
R254_A_3	581111.85	4194490.72	0.68
R255_A_3	581116.85	4194490.84	0.61
R256_A_3	581121.85	4194490.96	0.53
R257_A_3	581126.85	4194491.08	0.43
R258_A_3	581131.85	4194491.2	0.31
R259_A_3	581136.85	4194491.32	0.18
R260_A_3	581141.85	4194491.44	0.05
R261_A_3	581146.84	4194491.56	-0.08
R262_A_3	581151.84	4194491.68	-0.19
R263_A_3	581156.84	4194491.8	-0.27
R264_A_3	581161.84	4194491.92	-0.33

Receptor ID	UTMx	UTMy	Elevation[1]
R265_A_3	581166.84	4194492.04	-0.33
R266_B_3	581167.1	4194271.98	1.36
R267_B_3	581172.1	4194272.1	1.36
R268_B_3	581177.1	4194272.22	1.33
R269_B_3	581182.1	4194272.34	1.3
R270_B_3	581166.98	4194276.98	1.29
R271_B_3	581171.98	4194277.1	1.3
R272_B_3	581176.98	4194277.22	1.3
R273_B_3	581181.98	4194277.34	1.28
R274_B_3	581166.86	4194281.98	1.21
R275_B_3	581171.86	4194282.1	1.25
R276_B_3	581176.86	4194282.22	1.25
R277_B_3	581181.86	4194282.33	1.25
R278_B_3	581166.74	4194286.97	1.12
R279_B_3	581171.74	4194287.09	1.17
R280_B_3	581176.74	4194287.21	1.19
R281_B_3	581181.74	4194287.33	1.2
R282_B_3	581166.62	4194291.97	1.02
R283_B_3	581171.62	4194292.09	1.07
R284_B_3	581176.62	4194292.21	1.11
R285_B_3	581181.62	4194292.33	1.14
R286_B_3	581166.5	4194296.97	0.93
R287_B_3	581171.5	4194297.09	0.98
R288_B_3	581176.5	4194297.21	1.02
R289_B_3	581181.5	4194297.33	1.06
R290_B_3	581166.38	4194301.97	0.86
R291_B_3	581171.38	4194302.09	0.88
R292_B_3	581176.38	4194302.21	0.92
R293_B_3	581181.38	4194302.33	0.96
R294_B_3	581166.26	4194306.97	0.8
R295_B_3	581171.26	4194307.09	0.81
R296_B_3	581176.26	4194307.21	0.83
R297_B_3	581181.26	4194307.33	0.86
R298_B_3	581166.14	4194311.97	0.75
R299_B_3	581171.14	4194312.09	0.75
R300_B_3	581176.14	4194312.21	0.76
R301_B_3	581181.14	4194312.33	0.77
R302_B_3	581166.03	4194316.97	0.7
R303_B_3	581171.02	4194317.09	0.7
R304_B_3	581176.02	4194317.21	0.7
R305_B_3	581181.02	4194317.32	0.7
R306_B_3	581105.92	4194320.53	0.56
R307_B_3	581110.92	4194320.65	0.5
R308_B_3	581165.91	4194321.96	0.66
R309_B_3	581170.9	4194322.08	0.65

Receptor ID	UTMx	UTMy	Elevation[1]
R310_B_3	581175.9	4194322.2	0.65
R311_B_3	581180.9	4194322.32	0.64
R312_B_3	581105.8	4194325.53	0.49
R313_B_3	581110.8	4194325.65	0.43
R314_B_3	581115.8	4194325.77	0.37
R315_B_3	581165.78	4194326.96	0.58
R316_B_3	581170.78	4194327.08	0.58
R317_B_3	581175.78	4194327.2	0.58
R318_B_3	581180.78	4194327.32	0.59
R319_B_3	581090.69	4194330.17	0.29
R320_B_3	581095.69	4194330.29	0.26
R321_B_3	581100.68	4194330.41	0.21
R322_B_3	581105.68	4194330.53	0.16
R323_B_3	581110.68	4194330.65	0.13
R324_B_3	581115.68	4194330.77	0.1
R325_B_3	581120.68	4194330.89	0.11
R326_B_3	581125.68	4194331.01	0.12
R327_B_3	581130.68	4194331.12	0.14
R328_B_3	581135.67	4194331.24	0.16
R329_B_3	581140.67	4194331.36	0.18
R330_B_3	581145.67	4194331.48	0.22
R331_B_3	581150.67	4194331.6	0.28
R332_B_3	581155.67	4194331.72	0.34
R333_B_3	581160.67	4194331.84	0.4
R334_B_3	581165.67	4194331.96	0.44
R335_B_3	581170.66	4194332.08	0.47
R336_B_3	581175.66	4194332.2	0.5
R337_B_3	581180.66	4194332.32	0.53
R338_B_3	581090.57	4194335.17	-0.01
R339_B_3	581095.57	4194335.29	-0.06
R340_B_3	581100.57	4194335.41	-0.11
R341_B_3	581105.56	4194335.52	-0.15
R342_B_3	581110.56	4194335.65	-0.16
R343_B_3	581115.56	4194335.76	-0.15
R344_B_3	581120.56	4194335.88	-0.11
R345_B_3	581125.56	4194336	-0.07
R346_B_3	581130.56	4194336.12	-0.03
R347_B_3	581135.56	4194336.24	-0.01
R348_B_3	581140.55	4194336.36	0
R349_B_3	581145.55	4194336.48	0.02
R350_B_3	581150.55	4194336.6	0.06
R351_B_3	581155.55	4194336.72	0.13
R352_B_3	581160.55	4194336.84	0.21
R353_B_3	581165.55	4194336.96	0.28
R354_B_3	581170.55	4194337.08	0.32

Receptor ID	UTMx	UTMy	Elevation[1]
R355_B_3	581175.54	4194337.2	0.37
R356_B_3	581180.54	4194337.32	0.41
R357_B_3	581090.45	4194340.16	-0.13
R358_B_3	581095.45	4194340.29	-0.18
R359_B_3	581100.45	4194340.4	-0.23
R360_B_3	581105.44	4194340.52	-0.28
R361_B_3	581110.44	4194340.64	-0.31
R362_B_3	581115.44	4194340.76	-0.32
R363_B_3	581120.44	4194340.88	-0.3
R364_B_3	581125.44	4194341	-0.28
R365_B_3	581130.44	4194341.12	-0.27
R366_B_3	581135.44	4194341.24	-0.25
R367_B_3	581140.43	4194341.36	-0.23
R368_B_3	581145.43	4194341.48	-0.17
R369_B_3	581150.43	4194341.6	-0.11
R370_B_3	581155.43	4194341.72	-0.05
R371_B_3	581160.43	4194341.84	-0.01
R372_B_3	581165.43	4194341.96	0.03
R373_B_3	581170.43	4194342.08	0.07
R374_B_3	581175.42	4194342.2	0.12
R375_B_3	581180.42	4194342.32	0.16
R376_B_3	581090.33	4194345.16	-0.25
R377_B_3	581095.33	4194345.28	-0.3
R378_B_3	581100.33	4194345.4	-0.35
R379_B_3	581105.32	4194345.52	-0.4
R380_B_3	581110.32	4194345.64	-0.45
R381_B_3	581115.32	4194345.76	-0.48
R382_B_3	581120.32	4194345.88	-0.49
R383_B_3	581125.32	4194346	-0.49
R384_B_3	581130.32	4194346.12	-0.49
R385_B_3	581135.32	4194346.24	-0.47
R386_B_3	581140.31	4194346.36	-0.44
R387_B_3	581145.31	4194346.48	-0.36
R388_B_3	581150.31	4194346.6	-0.29
R389_B_3	581155.31	4194346.72	-0.23
R390_B_3	581160.31	4194346.84	-0.21
R391_B_3	581165.31	4194346.96	-0.2
R392_B_3	581170.31	4194347.08	-0.16
R393_B_3	581175.3	4194347.2	-0.12
R394_B_3	581180.3	4194347.32	-0.08
R395_B_3	581100.21	4194350.4	-0.35
R396_B_3	581105.21	4194350.52	-0.42
R397_B_3	581110.2	4194350.64	-0.48
R398_B_3	581115.2	4194350.76	-0.55
R399_B_3	581120.2	4194350.88	-0.57

Receptor ID	UTMx	UTMy	Elevation[1]
R400_B_3	581125.2	4194351	-0.59
R401_B_3	581130.2	4194351.12	-0.6
R402_B_3	581135.2	4194351.24	-0.59
R403_B_3	581140.19	4194351.36	-0.57
R404_B_3	581145.19	4194351.48	-0.52
R405_B_3	581150.19	4194351.6	-0.47
R406_B_3	581155.19	4194351.72	-0.41
R407_B_3	581160.19	4194351.84	-0.39
R408_B_3	581165.19	4194351.96	-0.36
R409_B_3	581170.19	4194352.08	-0.35
R410_B_3	581175.18	4194352.19	-0.32
R411_B_3	581180.18	4194352.31	-0.28
R412_B_3	581110.08	4194355.64	-0.52
R413_B_3	581115.08	4194355.76	-0.61
R414_B_3	581120.08	4194355.88	-0.66
R415_B_3	581125.08	4194356	-0.69
R416_B_3	581130.08	4194356.12	-0.7
R417_B_3	581135.08	4194356.24	-0.7
R418_B_3	581140.08	4194356.36	-0.7
R419_B_3	581145.07	4194356.48	-0.67
R420_B_3	581150.07	4194356.6	-0.63
R421_B_3	581155.07	4194356.72	-0.58
R422_B_3	581160.07	4194356.84	-0.55
R423_B_3	581165.07	4194356.95	-0.52
R424_B_3	581170.07	4194357.07	-0.51
R425_B_3	581175.07	4194357.19	-0.49
R426_B_3	581180.06	4194357.31	-0.47
R427_B_3	581114.96	4194360.76	-0.57
R428_B_3	581119.96	4194360.88	-0.64
R429_B_3	581124.96	4194361	-0.68
R430_B_3	581129.96	4194361.12	-0.7
R431_B_3	581134.96	4194361.24	-0.7
R432_B_3	581139.96	4194361.36	-0.69
R433_B_3	581144.95	4194361.48	-0.68
R434_B_3	581149.95	4194361.59	-0.67
R435_B_3	581154.95	4194361.71	-0.64
R436_B_3	581159.95	4194361.83	-0.62
R437_B_3	581164.95	4194361.95	-0.6
R438_B_3	581169.95	4194362.07	-0.58
R439_B_3	581174.95	4194362.19	-0.58
R440_B_3	581179.94	4194362.31	-0.61
R441_B_3	581119.84	4194365.88	-0.61
R442_B_3	581124.84	4194366	-0.68
R443_B_3	581129.84	4194366.11	-0.7
R444_B_3	581134.84	4194366.23	-0.7

Receptor ID	UTMx	UTMy	Elevation[1]
R445_B_3	581139.84	4194366.35	-0.69
R446_B_3	581144.84	4194366.47	-0.69
R447_B_3	581149.83	4194366.59	-0.69
R448_B_3	581154.83	4194366.71	-0.7
R449_B_3	581159.83	4194366.83	-0.69
R450_B_3	581164.83	4194366.95	-0.68
R451_B_3	581169.83	4194367.07	-0.65
R452_B_3	581174.83	4194367.19	-0.68
R453_B_3	581179.83	4194367.31	-0.74
R454_B_3	581124.72	4194370.99	-0.63
R455_B_3	581129.72	4194371.11	-0.64
R456_B_3	581134.72	4194371.23	-0.64
R457_B_3	581139.72	4194371.35	-0.64
R458_B_3	581144.72	4194371.47	-0.63
R459_B_3	581149.71	4194371.59	-0.64
R460_B_3	581154.71	4194371.71	-0.66
R461_B_3	581159.71	4194371.83	-0.7
R462_B_3	581164.71	4194371.95	-0.74
R463_B_3	581169.71	4194372.07	-0.76
R464_B_3	581174.71	4194372.19	-0.8
R465_B_3	581179.71	4194372.31	-0.86
R466_B_3	581129.6	4194376.11	-0.59
R467_B_3	581134.6	4194376.23	-0.59
R468_B_3	581139.6	4194376.35	-0.58
R469_B_3	581144.6	4194376.47	-0.58
R470_B_3	581149.59	4194376.59	-0.59
R471_B_3	581154.59	4194376.71	-0.63
R472_B_3	581159.59	4194376.83	-0.71
R473_B_3	581164.59	4194376.95	-0.8
R474_B_3	581169.59	4194377.07	-0.87
R475_B_3	581174.59	4194377.19	-0.93
R476_B_3	581179.59	4194377.31	-0.97
R477_B_3	581134.48	4194381.23	-0.49
R478_B_3	581139.48	4194381.35	-0.51
R479_B_3	581144.48	4194381.47	-0.55
R480_B_3	581149.47	4194381.59	-0.59
R481_B_3	581154.47	4194381.71	-0.66
R482_B_3	581159.47	4194381.83	-0.73
R483_B_3	581164.47	4194381.95	-0.81
R484_B_3	581169.47	4194382.07	-0.89
R485_B_3	581174.47	4194382.19	-0.96
R486_B_3	581179.47	4194382.31	-1.02
R487_B_3	581144.36	4194386.47	-0.52
R488_B_3	581149.36	4194386.59	-0.6
R489_B_3	581154.35	4194386.71	-0.68

Receptor ID	UTMx	UTMy	Elevation[1]
R490_B_3	581159.35	4194386.83	-0.75
R491_B_3	581164.35	4194386.95	-0.82
R492_B_3	581169.35	4194387.06	-0.91
R493_B_3	581174.35	4194387.19	-0.99
R494_B_3	581179.35	4194387.31	-1.05
R495_B_3	581149.24	4194391.59	-0.57
R496_B_3	581154.23	4194391.71	-0.65
R497_B_3	581159.23	4194391.82	-0.73
R498_B_3	581164.23	4194391.94	-0.8
R499_B_3	581169.23	4194392.06	-0.88
R500_B_3	581174.23	4194392.18	-0.94
R501_B_3	581179.23	4194392.3	-1
R502_B_3	581159.11	4194396.82	-0.7
R503_B_3	581164.11	4194396.94	-0.79
R504_B_3	581169.11	4194397.06	-0.84
R505_B_3	581174.11	4194397.18	-0.9
R506_B_3	581179.11	4194397.3	-0.95
R507_B_3	581173.99	4194402.18	-0.92
R508_B_3	581178.99	4194402.3	-1
R509_C_3	581072.37	4194259.71	1.19
R510_C_3	581077.37	4194259.83	1.3
R511_C_3	581082.36	4194259.95	1.32
R512_C_3	581087.36	4194260.07	1.26
R513_C_3	581067.25	4194264.59	0.9
R514_C_3	581072.25	4194264.71	1.06
R515_C_3	581077.25	4194264.83	1.17
R516_C_3	581082.25	4194264.95	1.2
R517_C_3	581087.24	4194265.07	1.14
R518_C_3	581062.13	4194269.47	0.74
R519_C_3	581067.13	4194269.59	0.79
R520_C_3	581072.13	4194269.71	0.91
R521_C_3	581077.13	4194269.83	1.01
R522_C_3	581082.13	4194269.95	1.09
R523_C_3	581087.12	4194270.07	1.08
R524_C_3	581052.01	4194274.23	0.71
R525_C_3	581057.01	4194274.35	0.7
R526_C_3	581062.01	4194274.47	0.7
R527_C_3	581067.01	4194274.59	0.72
R528_C_3	581072.01	4194274.71	0.79
R529_C_3	581077.01	4194274.83	0.88
R530_C_3	581082.01	4194274.95	0.98
R531_C_3	581087	4194275.06	1.01
R532_C_3	581046.9	4194279.11	0.71
R533_C_3	581051.89	4194279.23	0.71
R534_C_3	581056.89	4194279.35	0.71

Receptor ID	UTMx	UTMy	Elevation[1]
R535_C_3	581061.89	4194279.47	0.7
R536_C_3	581066.89	4194279.58	0.7
R537_C_3	581071.89	4194279.7	0.75
R538_C_3	581076.89	4194279.82	0.81
R539_C_3	581081.89	4194279.94	0.89
R540_C_3	581086.88	4194280.06	0.92
R541_C_3	581051.77	4194284.22	0.71
R542_C_3	581056.77	4194284.34	0.71
R543_C_3	581061.77	4194284.46	0.71
R544_C_3	581066.77	4194284.58	0.7
R545_C_3	581071.77	4194284.7	0.72
R546_C_3	581076.77	4194284.82	0.75
R547_C_3	581081.77	4194284.94	0.81
R548_C_3	581086.77	4194285.06	0.84
R549_C_3	581056.65	4194289.34	0.72
R550_C_3	581061.65	4194289.46	0.72
R551_C_3	581066.65	4194289.58	0.71
R552_C_3	581071.65	4194289.7	0.71
R553_C_3	581076.65	4194289.82	0.73
R554_C_3	581081.65	4194289.94	0.76
R555_C_3	581086.65	4194290.06	0.79
R556_C_3	581061.53	4194294.46	0.71
R557_C_3	581066.53	4194294.58	0.71
R558_C_3	581071.53	4194294.7	0.71
R559_C_3	581076.53	4194294.82	0.71
R560_C_3	581081.53	4194294.94	0.73
R561_C_3	581086.53	4194295.06	0.75
R562_C_3	581061.41	4194299.46	0.63
R563_C_3	581066.41	4194299.58	0.65
R564_C_3	581071.41	4194299.7	0.68
R565_C_3	581076.41	4194299.82	0.71
R566_C_3	581081.41	4194299.94	0.72
R567_C_3	581086.41	4194300.06	0.74
R568_C_3	581066.29	4194304.58	0.6
R569_C_3	581071.29	4194304.7	0.66
R570_C_3	581076.29	4194304.82	0.71
R571_C_3	581081.29	4194304.94	0.72
R572_C_3	581086.29	4194305.06	0.72
R573_C_3	581071.17	4194309.69	0.61
R574_C_3	581076.17	4194309.81	0.67
R575_C_3	581081.17	4194309.94	0.68
R576_C_3	581086.17	4194310.05	0.69
R577_C_3	581071.05	4194314.69	0.55
R578_C_3	581076.05	4194314.81	0.62
R579_C_3	581081.05	4194314.93	0.63

Receptor ID	UTMx	UTMy	Elevation[1]
R580_C_3	581086.05	4194315.05	0.66
R581_C_3	581075.93	4194319.81	0.54
R582_C_3	581080.93	4194319.93	0.58
R583_C_3	581085.93	4194320.05	0.62
R584_C_3	581080.81	4194324.93	0.51
R585_C_3	581085.81	4194325.05	0.56
R586_C_3	581080.69	4194329.93	0.29
R587_C_3	581085.69	4194330.05	0.29
R588_C_3	581085.57	4194335.05	0.04
R1_A_4	581104.13	4194395.51	3.26
R2_A_4	581109.13	4194395.63	3.18
R3_A_4	581114.13	4194395.75	3.1
R4_A_4	581099.01	4194400.39	3.39
R5_A_4	581104.01	4194400.51	3.3
R6_A_4	581109.01	4194400.63	3.22
R7_A_4	581114.01	4194400.75	3.12
R8_A_4	581119.01	4194400.86	3.04
R9_A_4	581093.89	4194405.27	3.48
R10_A_4	581098.89	4194405.39	3.41
R11_A_4	581103.89	4194405.51	3.31
R12_A_4	581108.89	4194405.62	3.21
R13_A_4	581113.89	4194405.74	3.11
R14_A_4	581118.89	4194405.86	3.02
R15_A_4	581093.77	4194410.27	3.5
R16_A_4	581098.77	4194410.38	3.44
R17_A_4	581103.77	4194410.5	3.36
R18_A_4	581108.77	4194410.62	3.27
R19_A_4	581113.77	4194410.74	3.19
R20_A_4	581118.77	4194410.86	3.1
R21_A_4	581123.76	4194410.98	3.01
R22_A_4	581093.65	4194415.26	3.52
R23_A_4	581098.65	4194415.38	3.47
R24_A_4	581103.65	4194415.5	3.42
R25_A_4	581108.65	4194415.62	3.36
R26_A_4	581113.65	4194415.74	3.29
R27_A_4	581118.65	4194415.86	3.2
R28_A_4	581123.64	4194415.98	3.11
R29_A_4	581128.64	4194416.1	3.01
R30_A_4	581133.64	4194416.22	2.91
R31_A_4	581138.64	4194416.34	2.81
R32_A_4	581093.53	4194420.26	3.59
R33_A_4	581098.53	4194420.38	3.54
R34_A_4	581103.53	4194420.5	3.49
R35_A_4	581108.53	4194420.62	3.43
R36_A_4	581113.53	4194420.74	3.36

Receptor ID	UTMx	UTMy	Elevation[1]
R37_A_4	581118.53	4194420.86	3.27
R38_A_4	581123.53	4194420.98	3.17
R39_A_4	581128.52	4194421.1	3.06
R40_A_4	581133.52	4194421.22	2.95
R41_A_4	581138.52	4194421.34	2.84
R42_A_4	581143.52	4194421.46	2.74
R43_A_4	581148.52	4194421.58	2.64
R44_A_4	581093.41	4194425.26	3.69
R45_A_4	581098.41	4194425.38	3.64
R46_A_4	581103.41	4194425.5	3.58
R47_A_4	581108.41	4194425.62	3.5
R48_A_4	581113.41	4194425.74	3.41
R49_A_4	581118.41	4194425.86	3.31
R50_A_4	581123.41	4194425.98	3.21
R51_A_4	581128.4	4194426.1	3.11
R52_A_4	581133.4	4194426.22	2.99
R53_A_4	581138.4	4194426.34	2.87
R54_A_4	581143.4	4194426.46	2.76
R55_A_4	581148.4	4194426.58	2.67
R56_A_4	581153.4	4194426.69	2.61
R57_A_4	581158.4	4194426.81	2.53
R58_A_4	581093.29	4194430.26	3.77
R59_A_4	581098.29	4194430.38	3.7
R60_A_4	581103.29	4194430.5	3.63
R61_A_4	581108.29	4194430.62	3.55
R62_A_4	581113.29	4194430.74	3.45
R63_A_4	581118.29	4194430.86	3.35
R64_A_4	581123.29	4194430.98	3.23
R65_A_4	581128.28	4194431.1	3.13
R66_A_4	581133.28	4194431.22	3.02
R67_A_4	581138.28	4194431.34	2.92
R68_A_4	581143.28	4194431.46	2.83
R69_A_4	581148.28	4194431.57	2.74
R70_A_4	581153.28	4194431.69	2.67
R71_A_4	581158.28	4194431.81	2.58
R72_A_4	581163.27	4194431.93	2.47
R73_A_4	581168.27	4194432.05	2.35
R74_A_4	581093.17	4194435.26	3.82
R75_A_4	581098.17	4194435.38	3.72
R76_A_4	581103.17	4194435.5	3.64
R77_A_4	581108.17	4194435.62	3.57
R78_A_4	581113.17	4194435.74	3.49
R79_A_4	581118.17	4194435.86	3.37
R80_A_4	581123.17	4194435.98	3.24
R81_A_4	581128.17	4194436.1	3.14

Receptor ID	UTMx	UTMy	Elevation[1]
R82_A_4	581133.16	4194436.21	3.05
R83_A_4	581138.16	4194436.33	2.98
R84_A_4	581143.16	4194436.45	2.91
R85_A_4	581148.16	4194436.57	2.83
R86_A_4	581153.16	4194436.69	2.73
R87_A_4	581158.16	4194436.81	2.62
R88_A_4	581163.16	4194436.93	2.51
R89_A_4	581168.15	4194437.05	2.37
R90_A_4	581093.06	4194440.26	3.89
R91_A_4	581098.05	4194440.38	3.78
R92_A_4	581103.05	4194440.5	3.68
R93_A_4	581108.05	4194440.61	3.59
R94_A_4	581113.05	4194440.73	3.51
R95_A_4	581118.05	4194440.85	3.4
R96_A_4	581123.05	4194440.97	3.28
R97_A_4	581128.05	4194441.09	3.19
R98_A_4	581133.04	4194441.21	3.11
R99_A_4	581138.04	4194441.33	3.05
R100_A_4	581143.04	4194441.45	2.97
R101_A_4	581148.04	4194441.57	2.88
R102_A_4	581153.04	4194441.69	2.77
R103_A_4	581158.04	4194441.81	2.66
R104_A_4	581163.04	4194441.93	2.53
R105_A_4	581168.03	4194442.05	2.4
R106_A_4	581092.94	4194445.26	3.98
R107_A_4	581097.93	4194445.37	3.86
R108_A_4	581102.93	4194445.49	3.74
R109_A_4	581107.93	4194445.61	3.62
R110_A_4	581112.93	4194445.73	3.53
R111_A_4	581117.93	4194445.85	3.43
R112_A_4	581122.93	4194445.97	3.34
R113_A_4	581127.93	4194446.09	3.28
R114_A_4	581132.92	4194446.21	3.2
R115_A_4	581137.92	4194446.33	3.12
R116_A_4	581142.92	4194446.45	3.02
R117_A_4	581147.92	4194446.57	2.92
R118_A_4	581152.92	4194446.69	2.81
R119_A_4	581157.92	4194446.81	2.68
R120_A_4	581162.92	4194446.93	2.55
R121_A_4	581167.91	4194447.05	2.44
R122_A_4	581092.82	4194450.25	4.06
R123_A_4	581097.82	4194450.37	3.93
R124_A_4	581102.81	4194450.49	3.79
R125_A_4	581107.81	4194450.61	3.67
R126_A_4	581112.81	4194450.73	3.57

Receptor ID	UTMx	UTMy	Elevation[1]
R127_A_4	581117.81	4194450.85	3.49
R128_A_4	581122.81	4194450.97	3.41
R129_A_4	581127.81	4194451.09	3.35
R130_A_4	581132.81	4194451.21	3.27
R131_A_4	581137.8	4194451.33	3.16
R132_A_4	581142.8	4194451.45	3.05
R133_A_4	581147.8	4194451.57	2.94
R134_A_4	581152.8	4194451.69	2.83
R135_A_4	581157.8	4194451.81	2.71
R136_A_4	581162.8	4194451.93	2.59
R137_A_4	581167.79	4194452.05	2.49
R138_A_4	581092.7	4194455.25	4.11
R139_A_4	581097.69	4194455.37	3.98
R140_A_4	581102.69	4194455.49	3.85
R141_A_4	581107.69	4194455.61	3.72
R142_A_4	581112.69	4194455.73	3.63
R143_A_4	581117.69	4194455.85	3.56
R144_A_4	581122.69	4194455.97	3.49
R145_A_4	581127.69	4194456.09	3.41
R146_A_4	581132.68	4194456.21	3.31
R147_A_4	581137.68	4194456.33	3.19
R148_A_4	581142.68	4194456.45	3.07
R149_A_4	581147.68	4194456.57	2.95
R150_A_4	581152.68	4194456.69	2.84
R151_A_4	581157.68	4194456.81	2.74
R152_A_4	581162.68	4194456.93	2.64
R153_A_4	581167.67	4194457.05	2.54
R154_A_4	581092.58	4194460.25	4.16
R155_A_4	581097.58	4194460.37	4.03
R156_A_4	581102.57	4194460.49	3.89
R157_A_4	581107.57	4194460.61	3.77
R158_A_4	581112.57	4194460.73	3.68
R159_A_4	581117.57	4194460.85	3.6
R160_A_4	581122.57	4194460.97	3.53
R161_A_4	581127.57	4194461.09	3.44
R162_A_4	581132.57	4194461.21	3.33
R163_A_4	581137.56	4194461.33	3.21
R164_A_4	581142.56	4194461.45	3.09
R165_A_4	581147.56	4194461.57	2.97
R166_A_4	581152.56	4194461.69	2.88
R167_A_4	581157.56	4194461.81	2.78
R168_A_4	581162.56	4194461.92	2.69
R169_A_4	581167.56	4194462.04	2.58
R170_A_4	581092.46	4194465.25	4.19
R171_A_4	581097.46	4194465.37	4.07

Receptor ID	UTMx	UTMy	Elevation[1]
R172_A_4	581102.45	4194465.49	3.94
R173_A_4	581107.45	4194465.61	3.81
R174_A_4	581112.45	4194465.73	3.72
R175_A_4	581117.45	4194465.85	3.62
R176_A_4	581122.45	4194465.97	3.53
R177_A_4	581127.45	4194466.09	3.44
R178_A_4	581132.45	4194466.21	3.33
R179_A_4	581137.44	4194466.32	3.22
R180_A_4	581142.44	4194466.45	3.11
R181_A_4	581147.44	4194466.56	3.01
R182_A_4	581152.44	4194466.68	2.92
R183_A_4	581157.44	4194466.8	2.82
R184_A_4	581162.44	4194466.92	2.73
R185_A_4	581167.44	4194467.04	2.62
R186_A_4	581092.34	4194470.25	4.2
R187_A_4	581097.34	4194470.37	4.08
R188_A_4	581102.34	4194470.49	3.95
R189_A_4	581107.33	4194470.61	3.84
R190_A_4	581112.33	4194470.73	3.74
R191_A_4	581117.33	4194470.85	3.64
R192_A_4	581122.33	4194470.97	3.54
R193_A_4	581127.33	4194471.09	3.44
R194_A_4	581132.33	4194471.2	3.33
R195_A_4	581137.33	4194471.32	3.21
R196_A_4	581142.32	4194471.44	3.11
R197_A_4	581147.32	4194471.56	3.01
R198_A_4	581152.32	4194471.68	2.93
R199_A_4	581157.32	4194471.8	2.84
R200_A_4	581162.32	4194471.92	2.73
R201_A_4	581167.32	4194472.04	2.61
R202_A_4	581092.22	4194475.25	4.14
R203_A_4	581097.22	4194475.37	4.04
R204_A_4	581102.22	4194475.49	3.93
R205_A_4	581107.21	4194475.61	3.83
R206_A_4	581112.21	4194475.72	3.74
R207_A_4	581117.21	4194475.84	3.64
R208_A_4	581122.21	4194475.96	3.54
R209_A_4	581127.21	4194476.08	3.44
R210_A_4	581132.21	4194476.2	3.33
R211_A_4	581137.21	4194476.32	3.2
R212_A_4	581142.2	4194476.44	3.09
R213_A_4	581147.2	4194476.56	2.99
R214_A_4	581152.2	4194476.68	2.92
R215_A_4	581157.2	4194476.8	2.82
R216_A_4	581162.2	4194476.92	2.7

Receptor ID	UTMx	UTMy	Elevation[1]
R217_A_4	581167.2	4194477.04	2.58
R218_A_4	581092.1	4194480.25	4.08
R219_A_4	581097.1	4194480.36	3.99
R220_A_4	581102.1	4194480.48	3.9
R221_A_4	581107.09	4194480.6	3.81
R222_A_4	581112.09	4194480.72	3.73
R223_A_4	581117.09	4194480.84	3.64
R224_A_4	581122.09	4194480.96	3.54
R225_A_4	581127.09	4194481.08	3.44
R226_A_4	581132.09	4194481.2	3.33
R227_A_4	581137.09	4194481.32	3.19
R228_A_4	581142.08	4194481.44	3.07
R229_A_4	581147.08	4194481.56	2.96
R230_A_4	581152.08	4194481.68	2.89
R231_A_4	581157.08	4194481.8	2.79
R232_A_4	581162.08	4194481.92	2.67
R233_A_4	581167.08	4194482.04	2.57
R234_A_4	581091.98	4194485.24	3.99
R235_A_4	581096.98	4194485.36	3.92
R236_A_4	581101.98	4194485.48	3.85
R237_A_4	581106.98	4194485.6	3.77
R238_A_4	581111.97	4194485.72	3.71
R239_A_4	581116.97	4194485.84	3.63
R240_A_4	581121.97	4194485.96	3.55
R241_A_4	581126.97	4194486.08	3.44
R242_A_4	581131.97	4194486.2	3.32
R243_A_4	581136.97	4194486.32	3.19
R244_A_4	581141.97	4194486.44	3.07
R245_A_4	581146.96	4194486.56	2.95
R246_A_4	581151.96	4194486.68	2.85
R247_A_4	581156.96	4194486.8	2.75
R248_A_4	581161.96	4194486.92	2.64
R249_A_4	581166.96	4194487.04	2.59
R250_A_4	581091.86	4194490.24	3.89
R251_A_4	581096.86	4194490.36	3.84
R252_A_4	581101.86	4194490.48	3.79
R253_A_4	581106.86	4194490.6	3.73
R254_A_4	581111.85	4194490.72	3.68
R255_A_4	581116.85	4194490.84	3.61
R256_A_4	581121.85	4194490.96	3.53
R257_A_4	581126.85	4194491.08	3.43
R258_A_4	581131.85	4194491.2	3.31
R259_A_4	581136.85	4194491.32	3.18
R260_A_4	581141.85	4194491.44	3.05
R261_A_4	581146.84	4194491.56	2.92

Receptor ID	UTMx	UTMy	Elevation[1]
R262_A_4	581151.84	4194491.68	2.81
R263_A_4	581156.84	4194491.8	2.73
R264_A_4	581161.84	4194491.92	2.67
R265_A_4	581166.84	4194492.04	2.67
R266_B_4	581167.1	4194271.98	4.36
R267_B_4	581172.1	4194272.1	4.36
R268_B_4	581177.1	4194272.22	4.33
R269_B_4	581182.1	4194272.34	4.3
R270_B_4	581166.98	4194276.98	4.29
R271_B_4	581171.98	4194277.1	4.3
R272_B_4	581176.98	4194277.22	4.3
R273_B_4	581181.98	4194277.34	4.28
R274_B_4	581166.86	4194281.98	4.21
R275_B_4	581171.86	4194282.1	4.25
R276_B_4	581176.86	4194282.22	4.25
R277_B_4	581181.86	4194282.33	4.25
R278_B_4	581166.74	4194286.97	4.12
R279_B_4	581171.74	4194287.09	4.17
R280_B_4	581176.74	4194287.21	4.19
R281_B_4	581181.74	4194287.33	4.2
R282_B_4	581166.62	4194291.97	4.02
R283_B_4	581171.62	4194292.09	4.07
R284_B_4	581176.62	4194292.21	4.11
R285_B_4	581181.62	4194292.33	4.14
R286_B_4	581166.5	4194296.97	3.93
R287_B_4	581171.5	4194297.09	3.98
R288_B_4	581176.5	4194297.21	4.02
R289_B_4	581181.5	4194297.33	4.06
R290_B_4	581166.38	4194301.97	3.86
R291_B_4	581171.38	4194302.09	3.88
R292_B_4	581176.38	4194302.21	3.92
R293_B_4	581181.38	4194302.33	3.96
R294_B_4	581166.26	4194306.97	3.8
R295_B_4	581171.26	4194307.09	3.81
R296_B_4	581176.26	4194307.21	3.83
R297_B_4	581181.26	4194307.33	3.86
R298_B_4	581166.14	4194311.97	3.75
R299_B_4	581171.14	4194312.09	3.75
R300_B_4	581176.14	4194312.21	3.76
R301_B_4	581181.14	4194312.33	3.77
R302_B_4	581166.03	4194316.97	3.7
R303_B_4	581171.02	4194317.09	3.7
R304_B_4	581176.02	4194317.21	3.7
R305_B_4	581181.02	4194317.32	3.7
R306_B_4	581105.92	4194320.53	3.56

Receptor ID	UTMx	UTMy	Elevation[1]
R307_B_4	581110.92	4194320.65	3.5
R308_B_4	581165.91	4194321.96	3.66
R309_B_4	581170.9	4194322.08	3.65
R310_B_4	581175.9	4194322.2	3.65
R311_B_4	581180.9	4194322.32	3.64
R312_B_4	581105.8	4194325.53	3.49
R313_B_4	581110.8	4194325.65	3.43
R314_B_4	581115.8	4194325.77	3.37
R315_B_4	581165.78	4194326.96	3.58
R316_B_4	581170.78	4194327.08	3.58
R317_B_4	581175.78	4194327.2	3.58
R318_B_4	581180.78	4194327.32	3.59
R319_B_4	581090.69	4194330.17	3.29
R320_B_4	581095.69	4194330.29	3.26
R321_B_4	581100.68	4194330.41	3.21
R322_B_4	581105.68	4194330.53	3.16
R323_B_4	581110.68	4194330.65	3.13
R324_B_4	581115.68	4194330.77	3.1
R325_B_4	581120.68	4194330.89	3.11
R326_B_4	581125.68	4194331.01	3.12
R327_B_4	581130.68	4194331.12	3.14
R328_B_4	581135.67	4194331.24	3.16
R329_B_4	581140.67	4194331.36	3.18
R330_B_4	581145.67	4194331.48	3.22
R331_B_4	581150.67	4194331.6	3.28
R332_B_4	581155.67	4194331.72	3.34
R333_B_4	581160.67	4194331.84	3.4
R334_B_4	581165.67	4194331.96	3.44
R335_B_4	581170.66	4194332.08	3.47
R336_B_4	581175.66	4194332.2	3.5
R337_B_4	581180.66	4194332.32	3.53
R338_B_4	581090.57	4194335.17	2.99
R339_B_4	581095.57	4194335.29	2.94
R340_B_4	581100.57	4194335.41	2.89
R341_B_4	581105.56	4194335.52	2.85
R342_B_4	581110.56	4194335.65	2.84
R343_B_4	581115.56	4194335.76	2.85
R344_B_4	581120.56	4194335.88	2.89
R345_B_4	581125.56	4194336	2.93
R346_B_4	581130.56	4194336.12	2.97
R347_B_4	581135.56	4194336.24	2.99
R348_B_4	581140.55	4194336.36	3
R349_B_4	581145.55	4194336.48	3.02
R350_B_4	581150.55	4194336.6	3.06
R351_B_4	581155.55	4194336.72	3.13

Receptor ID	UTMx	UTMy	Elevation[1]
R352_B_4	581160.55	4194336.84	3.21
R353_B_4	581165.55	4194336.96	3.28
R354_B_4	581170.55	4194337.08	3.32
R355_B_4	581175.54	4194337.2	3.37
R356_B_4	581180.54	4194337.32	3.41
R357_B_4	581090.45	4194340.16	2.87
R358_B_4	581095.45	4194340.29	2.82
R359_B_4	581100.45	4194340.4	2.77
R360_B_4	581105.44	4194340.52	2.72
R361_B_4	581110.44	4194340.64	2.69
R362_B_4	581115.44	4194340.76	2.68
R363_B_4	581120.44	4194340.88	2.7
R364_B_4	581125.44	4194341	2.72
R365_B_4	581130.44	4194341.12	2.73
R366_B_4	581135.44	4194341.24	2.75
R367_B_4	581140.43	4194341.36	2.77
R368_B_4	581145.43	4194341.48	2.83
R369_B_4	581150.43	4194341.6	2.89
R370_B_4	581155.43	4194341.72	2.95
R371_B_4	581160.43	4194341.84	2.99
R372_B_4	581165.43	4194341.96	3.03
R373_B_4	581170.43	4194342.08	3.07
R374_B_4	581175.42	4194342.2	3.12
R375_B_4	581180.42	4194342.32	3.16
R376_B_4	581090.33	4194345.16	2.75
R377_B_4	581095.33	4194345.28	2.7
R378_B_4	581100.33	4194345.4	2.65
R379_B_4	581105.32	4194345.52	2.6
R380_B_4	581110.32	4194345.64	2.55
R381_B_4	581115.32	4194345.76	2.52
R382_B_4	581120.32	4194345.88	2.51
R383_B_4	581125.32	4194346	2.51
R384_B_4	581130.32	4194346.12	2.51
R385_B_4	581135.32	4194346.24	2.53
R386_B_4	581140.31	4194346.36	2.56
R387_B_4	581145.31	4194346.48	2.64
R388_B_4	581150.31	4194346.6	2.71
R389_B_4	581155.31	4194346.72	2.77
R390_B_4	581160.31	4194346.84	2.79
R391_B_4	581165.31	4194346.96	2.8
R392_B_4	581170.31	4194347.08	2.84
R393_B_4	581175.3	4194347.2	2.88
R394_B_4	581180.3	4194347.32	2.92
R395_B_4	581100.21	4194350.4	2.65
R396_B_4	581105.21	4194350.52	2.58

Receptor ID	UTMx	UTMy	Elevation[1]
R397_B_4	581110.2	4194350.64	2.52
R398_B_4	581115.2	4194350.76	2.45
R399_B_4	581120.2	4194350.88	2.43
R400_B_4	581125.2	4194351	2.41
R401_B_4	581130.2	4194351.12	2.4
R402_B_4	581135.2	4194351.24	2.41
R403_B_4	581140.19	4194351.36	2.43
R404_B_4	581145.19	4194351.48	2.48
R405_B_4	581150.19	4194351.6	2.53
R406_B_4	581155.19	4194351.72	2.59
R407_B_4	581160.19	4194351.84	2.61
R408_B_4	581165.19	4194351.96	2.64
R409_B_4	581170.19	4194352.08	2.65
R410_B_4	581175.18	4194352.19	2.68
R411_B_4	581180.18	4194352.31	2.72
R412_B_4	581110.08	4194355.64	2.48
R413_B_4	581115.08	4194355.76	2.39
R414_B_4	581120.08	4194355.88	2.34
R415_B_4	581125.08	4194356	2.31
R416_B_4	581130.08	4194356.12	2.3
R417_B_4	581135.08	4194356.24	2.3
R418_B_4	581140.08	4194356.36	2.3
R419_B_4	581145.07	4194356.48	2.33
R420_B_4	581150.07	4194356.6	2.37
R421_B_4	581155.07	4194356.72	2.42
R422_B_4	581160.07	4194356.84	2.45
R423_B_4	581165.07	4194356.95	2.48
R424_B_4	581170.07	4194357.07	2.49
R425_B_4	581175.07	4194357.19	2.51
R426_B_4	581180.06	4194357.31	2.53
R427_B_4	581114.96	4194360.76	2.43
R428_B_4	581119.96	4194360.88	2.36
R429_B_4	581124.96	4194361	2.32
R430_B_4	581129.96	4194361.12	2.3
R431_B_4	581134.96	4194361.24	2.3
R432_B_4	581139.96	4194361.36	2.31
R433_B_4	581144.95	4194361.48	2.32
R434_B_4	581149.95	4194361.59	2.33
R435_B_4	581154.95	4194361.71	2.36
R436_B_4	581159.95	4194361.83	2.38
R437_B_4	581164.95	4194361.95	2.4
R438_B_4	581169.95	4194362.07	2.42
R439_B_4	581174.95	4194362.19	2.42
R440_B_4	581179.94	4194362.31	2.39
R441_B_4	581119.84	4194365.88	2.39

Receptor ID	UTMx	UTMy	Elevation[1]
R442_B_4	581124.84	4194366	2.32
R443_B_4	581129.84	4194366.11	2.3
R444_B_4	581134.84	4194366.23	2.3
R445_B_4	581139.84	4194366.35	2.31
R446_B_4	581144.84	4194366.47	2.31
R447_B_4	581149.83	4194366.59	2.31
R448_B_4	581154.83	4194366.71	2.3
R449_B_4	581159.83	4194366.83	2.31
R450_B_4	581164.83	4194366.95	2.32
R451_B_4	581169.83	4194367.07	2.35
R452_B_4	581174.83	4194367.19	2.32
R453_B_4	581179.83	4194367.31	2.26
R454_B_4	581124.72	4194370.99	2.37
R455_B_4	581129.72	4194371.11	2.36
R456_B_4	581134.72	4194371.23	2.36
R457_B_4	581139.72	4194371.35	2.36
R458_B_4	581144.72	4194371.47	2.37
R459_B_4	581149.71	4194371.59	2.36
R460_B_4	581154.71	4194371.71	2.34
R461_B_4	581159.71	4194371.83	2.3
R462_B_4	581164.71	4194371.95	2.26
R463_B_4	581169.71	4194372.07	2.24
R464_B_4	581174.71	4194372.19	2.2
R465_B_4	581179.71	4194372.31	2.14
R466_B_4	581129.6	4194376.11	2.41
R467_B_4	581134.6	4194376.23	2.41
R468_B_4	581139.6	4194376.35	2.42
R469_B_4	581144.6	4194376.47	2.42
R470_B_4	581149.59	4194376.59	2.41
R471_B_4	581154.59	4194376.71	2.37
R472_B_4	581159.59	4194376.83	2.29
R473_B_4	581164.59	4194376.95	2.2
R474_B_4	581169.59	4194377.07	2.13
R475_B_4	581174.59	4194377.19	2.07
R476_B_4	581179.59	4194377.31	2.03
R477_B_4	581134.48	4194381.23	2.51
R478_B_4	581139.48	4194381.35	2.49
R479_B_4	581144.48	4194381.47	2.45
R480_B_4	581149.47	4194381.59	2.41
R481_B_4	581154.47	4194381.71	2.34
R482_B_4	581159.47	4194381.83	2.27
R483_B_4	581164.47	4194381.95	2.19
R484_B_4	581169.47	4194382.07	2.11
R485_B_4	581174.47	4194382.19	2.04
R486_B_4	581179.47	4194382.31	1.98

Receptor ID	UTMx	UTMy	Elevation[1]
R487_B_4	581144.36	4194386.47	2.48
R488_B_4	581149.36	4194386.59	2.4
R489_B_4	581154.35	4194386.71	2.32
R490_B_4	581159.35	4194386.83	2.25
R491_B_4	581164.35	4194386.95	2.18
R492_B_4	581169.35	4194387.06	2.09
R493_B_4	581174.35	4194387.19	2.01
R494_B_4	581179.35	4194387.31	1.95
R495_B_4	581149.24	4194391.59	2.43
R496_B_4	581154.23	4194391.71	2.35
R497_B_4	581159.23	4194391.82	2.27
R498_B_4	581164.23	4194391.94	2.2
R499_B_4	581169.23	4194392.06	2.12
R500_B_4	581174.23	4194392.18	2.06
R501_B_4	581179.23	4194392.3	2
R502_B_4	581159.11	4194396.82	2.3
R503_B_4	581164.11	4194396.94	2.21
R504_B_4	581169.11	4194397.06	2.16
R505_B_4	581174.11	4194397.18	2.1
R506_B_4	581179.11	4194397.3	2.05
R507_B_4	581173.99	4194402.18	2.08
R508_B_4	581178.99	4194402.3	2
R509_C_4	581072.37	4194259.71	4.19
R510_C_4	581077.37	4194259.83	4.3
R511_C_4	581082.36	4194259.95	4.32
R512_C_4	581087.36	4194260.07	4.26
R513_C_4	581067.25	4194264.59	3.9
R514_C_4	581072.25	4194264.71	4.06
R515_C_4	581077.25	4194264.83	4.17
R516_C_4	581082.25	4194264.95	4.2
R517_C_4	581087.24	4194265.07	4.14
R518_C_4	581062.13	4194269.47	3.74
R519_C_4	581067.13	4194269.59	3.79
R520_C_4	581072.13	4194269.71	3.91
R521_C_4	581077.13	4194269.83	4.01
R522_C_4	581082.13	4194269.95	4.09
R523_C_4	581087.12	4194270.07	4.08
R524_C_4	581052.01	4194274.23	3.71
R525_C_4	581057.01	4194274.35	3.7
R526_C_4	581062.01	4194274.47	3.7
R527_C_4	581067.01	4194274.59	3.72
R528_C_4	581072.01	4194274.71	3.79
R529_C_4	581077.01	4194274.83	3.88
R530_C_4	581082.01	4194274.95	3.98
R531_C_4	581087	4194275.06	4.01

Receptor ID	UTMx	UTMy	Elevation[1]
R532_C_4	581046.9	4194279.11	3.71
R533_C_4	581051.89	4194279.23	3.71
R534_C_4	581056.89	4194279.35	3.71
R535_C_4	581061.89	4194279.47	3.7
R536_C_4	581066.89	4194279.58	3.7
R537_C_4	581071.89	4194279.7	3.75
R538_C_4	581076.89	4194279.82	3.81
R539_C_4	581081.89	4194279.94	3.89
R540_C_4	581086.88	4194280.06	3.92
R541_C_4	581051.77	4194284.22	3.71
R542_C_4	581056.77	4194284.34	3.71
R543_C_4	581061.77	4194284.46	3.71
R544_C_4	581066.77	4194284.58	3.7
R545_C_4	581071.77	4194284.7	3.72
R546_C_4	581076.77	4194284.82	3.75
R547_C_4	581081.77	4194284.94	3.81
R548_C_4	581086.77	4194285.06	3.84
R549_C_4	581056.65	4194289.34	3.72
R550_C_4	581061.65	4194289.46	3.72
R551_C_4	581066.65	4194289.58	3.71
R552_C_4	581071.65	4194289.7	3.71
R553_C_4	581076.65	4194289.82	3.73
R554_C_4	581081.65	4194289.94	3.76
R555_C_4	581086.65	4194290.06	3.79
R556_C_4	581061.53	4194294.46	3.71
R557_C_4	581066.53	4194294.58	3.71
R558_C_4	581071.53	4194294.7	3.71
R559_C_4	581076.53	4194294.82	3.71
R560_C_4	581081.53	4194294.94	3.73
R561_C_4	581086.53	4194295.06	3.75
R562_C_4	581061.41	4194299.46	3.63
R563_C_4	581066.41	4194299.58	3.65
R564_C_4	581071.41	4194299.7	3.68
R565_C_4	581076.41	4194299.82	3.71
R566_C_4	581081.41	4194299.94	3.72
R567_C_4	581086.41	4194300.06	3.74
R568_C_4	581066.29	4194304.58	3.6
R569_C_4	581071.29	4194304.7	3.66
R570_C_4	581076.29	4194304.82	3.71
R571_C_4	581081.29	4194304.94	3.72
R572_C_4	581086.29	4194305.06	3.72
R573_C_4	581071.17	4194309.69	3.61
R574_C_4	581076.17	4194309.81	3.67
R575_C_4	581081.17	4194309.94	3.68
R576_C_4	581086.17	4194310.05	3.69

Receptor ID	UTMx	UTMy	Elevation[1]
R577_C_4	581071.05	4194314.69	3.55
R578_C_4	581076.05	4194314.81	3.62
R579_C_4	581081.05	4194314.93	3.63
R580_C_4	581086.05	4194315.05	3.66
R581_C_4	581075.93	4194319.81	3.54
R582_C_4	581080.93	4194319.93	3.58
R583_C_4	581085.93	4194320.05	3.62
R584_C_4	581080.81	4194324.93	3.51
R585_C_4	581085.81	4194325.05	3.56
R586_C_4	581080.69	4194329.93	3.29
R587_C_4	581085.69	4194330.05	3.29
R588_C_4	581085.57	4194335.05	3.04
R1_A_5	581104.13	4194395.51	6.26
R2_A_5	581109.13	4194395.63	6.18
R3_A_5	581114.13	4194395.75	6.1
R4_A_5	581099.01	4194400.39	6.39
R5_A_5	581104.01	4194400.51	6.3
R6_A_5	581109.01	4194400.63	6.22
R7_A_5	581114.01	4194400.75	6.12
R8_A_5	581119.01	4194400.86	6.04
R9_A_5	581093.89	4194405.27	6.48
R10_A_5	581098.89	4194405.39	6.41
R11_A_5	581103.89	4194405.51	6.31
R12_A_5	581108.89	4194405.62	6.21
R13_A_5	581113.89	4194405.74	6.11
R14_A_5	581118.89	4194405.86	6.02
R15_A_5	581093.77	4194410.27	6.5
R16_A_5	581098.77	4194410.38	6.44
R17_A_5	581103.77	4194410.5	6.36
R18_A_5	581108.77	4194410.62	6.27
R19_A_5	581113.77	4194410.74	6.19
R20_A_5	581118.77	4194410.86	6.1
R21_A_5	581123.76	4194410.98	6.01
R22_A_5	581093.65	4194415.26	6.52
R23_A_5	581098.65	4194415.38	6.47
R24_A_5	581103.65	4194415.5	6.42
R25_A_5	581108.65	4194415.62	6.36
R26_A_5	581113.65	4194415.74	6.29
R27_A_5	581118.65	4194415.86	6.2
R28_A_5	581123.64	4194415.98	6.11
R29_A_5	581128.64	4194416.1	6.01
R30_A_5	581133.64	4194416.22	5.91
R31_A_5	581138.64	4194416.34	5.81
R32_A_5	581093.53	4194420.26	6.59
R33_A_5	581098.53	4194420.38	6.54

Receptor ID	UTMx	UTMy	Elevation[1]
R34_A_5	581103.53	4194420.5	6.49
R35_A_5	581108.53	4194420.62	6.43
R36_A_5	581113.53	4194420.74	6.36
R37_A_5	581118.53	4194420.86	6.27
R38_A_5	581123.53	4194420.98	6.17
R39_A_5	581128.52	4194421.1	6.06
R40_A_5	581133.52	4194421.22	5.95
R41_A_5	581138.52	4194421.34	5.84
R42_A_5	581143.52	4194421.46	5.74
R43_A_5	581148.52	4194421.58	5.64
R44_A_5	581093.41	4194425.26	6.69
R45_A_5	581098.41	4194425.38	6.64
R46_A_5	581103.41	4194425.5	6.58
R47_A_5	581108.41	4194425.62	6.5
R48_A_5	581113.41	4194425.74	6.41
R49_A_5	581118.41	4194425.86	6.31
R50_A_5	581123.41	4194425.98	6.21
R51_A_5	581128.4	4194426.1	6.11
R52_A_5	581133.4	4194426.22	5.99
R53_A_5	581138.4	4194426.34	5.87
R54_A_5	581143.4	4194426.46	5.76
R55_A_5	581148.4	4194426.58	5.67
R56_A_5	581153.4	4194426.69	5.61
R57_A_5	581158.4	4194426.81	5.53
R58_A_5	581093.29	4194430.26	6.77
R59_A_5	581098.29	4194430.38	6.7
R60_A_5	581103.29	4194430.5	6.63
R61_A_5	581108.29	4194430.62	6.55
R62_A_5	581113.29	4194430.74	6.45
R63_A_5	581118.29	4194430.86	6.35
R64_A_5	581123.29	4194430.98	6.23
R65_A_5	581128.28	4194431.1	6.13
R66_A_5	581133.28	4194431.22	6.02
R67_A_5	581138.28	4194431.34	5.92
R68_A_5	581143.28	4194431.46	5.83
R69_A_5	581148.28	4194431.57	5.74
R70_A_5	581153.28	4194431.69	5.67
R71_A_5	581158.28	4194431.81	5.58
R72_A_5	581163.27	4194431.93	5.47
R73_A_5	581168.27	4194432.05	5.35
R74_A_5	581093.17	4194435.26	6.82
R75_A_5	581098.17	4194435.38	6.72
R76_A_5	581103.17	4194435.5	6.64
R77_A_5	581108.17	4194435.62	6.57
R78_A_5	581113.17	4194435.74	6.49

Receptor ID	UTMx	UTMy	Elevation[1]
R79_A_5	581118.17	4194435.86	6.37
R80_A_5	581123.17	4194435.98	6.24
R81_A_5	581128.17	4194436.1	6.14
R82_A_5	581133.16	4194436.21	6.05
R83_A_5	581138.16	4194436.33	5.98
R84_A_5	581143.16	4194436.45	5.91
R85_A_5	581148.16	4194436.57	5.83
R86_A_5	581153.16	4194436.69	5.73
R87_A_5	581158.16	4194436.81	5.62
R88_A_5	581163.16	4194436.93	5.51
R89_A_5	581168.15	4194437.05	5.37
R90_A_5	581093.06	4194440.26	6.89
R91_A_5	581098.05	4194440.38	6.78
R92_A_5	581103.05	4194440.5	6.68
R93_A_5	581108.05	4194440.61	6.59
R94_A_5	581113.05	4194440.73	6.51
R95_A_5	581118.05	4194440.85	6.4
R96_A_5	581123.05	4194440.97	6.28
R97_A_5	581128.05	4194441.09	6.19
R98_A_5	581133.04	4194441.21	6.11
R99_A_5	581138.04	4194441.33	6.05
R100_A_5	581143.04	4194441.45	5.97
R101_A_5	581148.04	4194441.57	5.88
R102_A_5	581153.04	4194441.69	5.77
R103_A_5	581158.04	4194441.81	5.66
R104_A_5	581163.04	4194441.93	5.53
R105_A_5	581168.03	4194442.05	5.4
R106_A_5	581092.94	4194445.26	6.98
R107_A_5	581097.93	4194445.37	6.86
R108_A_5	581102.93	4194445.49	6.74
R109_A_5	581107.93	4194445.61	6.62
R110_A_5	581112.93	4194445.73	6.53
R111_A_5	581117.93	4194445.85	6.43
R112_A_5	581122.93	4194445.97	6.34
R113_A_5	581127.93	4194446.09	6.28
R114_A_5	581132.92	4194446.21	6.2
R115_A_5	581137.92	4194446.33	6.12
R116_A_5	581142.92	4194446.45	6.02
R117_A_5	581147.92	4194446.57	5.92
R118_A_5	581152.92	4194446.69	5.81
R119_A_5	581157.92	4194446.81	5.68
R120_A_5	581162.92	4194446.93	5.55
R121_A_5	581167.91	4194447.05	5.44
R122_A_5	581092.82	4194450.25	7.06
R123_A_5	581097.82	4194450.37	6.93

Receptor ID	UTMx	UTMy	Elevation[1]
R124_A_5	581102.81	4194450.49	6.79
R125_A_5	581107.81	4194450.61	6.67
R126_A_5	581112.81	4194450.73	6.57
R127_A_5	581117.81	4194450.85	6.49
R128_A_5	581122.81	4194450.97	6.41
R129_A_5	581127.81	4194451.09	6.35
R130_A_5	581132.81	4194451.21	6.27
R131_A_5	581137.8	4194451.33	6.16
R132_A_5	581142.8	4194451.45	6.05
R133_A_5	581147.8	4194451.57	5.94
R134_A_5	581152.8	4194451.69	5.83
R135_A_5	581157.8	4194451.81	5.71
R136_A_5	581162.8	4194451.93	5.59
R137_A_5	581167.79	4194452.05	5.49
R138_A_5	581092.7	4194455.25	7.11
R139_A_5	581097.69	4194455.37	6.98
R140_A_5	581102.69	4194455.49	6.85
R141_A_5	581107.69	4194455.61	6.72
R142_A_5	581112.69	4194455.73	6.63
R143_A_5	581117.69	4194455.85	6.56
R144_A_5	581122.69	4194455.97	6.49
R145_A_5	581127.69	4194456.09	6.41
R146_A_5	581132.68	4194456.21	6.31
R147_A_5	581137.68	4194456.33	6.19
R148_A_5	581142.68	4194456.45	6.07
R149_A_5	581147.68	4194456.57	5.95
R150_A_5	581152.68	4194456.69	5.84
R151_A_5	581157.68	4194456.81	5.74
R152_A_5	581162.68	4194456.93	5.64
R153_A_5	581167.67	4194457.05	5.54
R154_A_5	581092.58	4194460.25	7.16
R155_A_5	581097.58	4194460.37	7.03
R156_A_5	581102.57	4194460.49	6.89
R157_A_5	581107.57	4194460.61	6.77
R158_A_5	581112.57	4194460.73	6.68
R159_A_5	581117.57	4194460.85	6.6
R160_A_5	581122.57	4194460.97	6.53
R161_A_5	581127.57	4194461.09	6.44
R162_A_5	581132.57	4194461.21	6.33
R163_A_5	581137.56	4194461.33	6.21
R164_A_5	581142.56	4194461.45	6.09
R165_A_5	581147.56	4194461.57	5.97
R166_A_5	581152.56	4194461.69	5.88
R167_A_5	581157.56	4194461.81	5.78
R168_A_5	581162.56	4194461.92	5.69

Receptor ID	UTMx	UTMy	Elevation[1]
R169_A_5	581167.56	4194462.04	5.58
R170_A_5	581092.46	4194465.25	7.19
R171_A_5	581097.46	4194465.37	7.07
R172_A_5	581102.45	4194465.49	6.94
R173_A_5	581107.45	4194465.61	6.81
R174_A_5	581112.45	4194465.73	6.72
R175_A_5	581117.45	4194465.85	6.62
R176_A_5	581122.45	4194465.97	6.53
R177_A_5	581127.45	4194466.09	6.44
R178_A_5	581132.45	4194466.21	6.33
R179_A_5	581137.44	4194466.32	6.22
R180_A_5	581142.44	4194466.45	6.11
R181_A_5	581147.44	4194466.56	6.01
R182_A_5	581152.44	4194466.68	5.92
R183_A_5	581157.44	4194466.8	5.82
R184_A_5	581162.44	4194466.92	5.73
R185_A_5	581167.44	4194467.04	5.62
R186_A_5	581092.34	4194470.25	7.2
R187_A_5	581097.34	4194470.37	7.08
R188_A_5	581102.34	4194470.49	6.95
R189_A_5	581107.33	4194470.61	6.84
R190_A_5	581112.33	4194470.73	6.74
R191_A_5	581117.33	4194470.85	6.64
R192_A_5	581122.33	4194470.97	6.54
R193_A_5	581127.33	4194471.09	6.44
R194_A_5	581132.33	4194471.2	6.33
R195_A_5	581137.33	4194471.32	6.21
R196_A_5	581142.32	4194471.44	6.11
R197_A_5	581147.32	4194471.56	6.01
R198_A_5	581152.32	4194471.68	5.93
R199_A_5	581157.32	4194471.8	5.84
R200_A_5	581162.32	4194471.92	5.73
R201_A_5	581167.32	4194472.04	5.61
R202_A_5	581092.22	4194475.25	7.14
R203_A_5	581097.22	4194475.37	7.04
R204_A_5	581102.22	4194475.49	6.93
R205_A_5	581107.21	4194475.61	6.83
R206_A_5	581112.21	4194475.72	6.74
R207_A_5	581117.21	4194475.84	6.64
R208_A_5	581122.21	4194475.96	6.54
R209_A_5	581127.21	4194476.08	6.44
R210_A_5	581132.21	4194476.2	6.33
R211_A_5	581137.21	4194476.32	6.2
R212_A_5	581142.2	4194476.44	6.09
R213_A_5	581147.2	4194476.56	5.99

Receptor ID	UTMx	UTMy	Elevation[1]
R214_A_5	581152.2	4194476.68	5.92
R215_A_5	581157.2	4194476.8	5.82
R216_A_5	581162.2	4194476.92	5.7
R217_A_5	581167.2	4194477.04	5.58
R218_A_5	581092.1	4194480.25	7.08
R219_A_5	581097.1	4194480.36	6.99
R220_A_5	581102.1	4194480.48	6.9
R221_A_5	581107.09	4194480.6	6.81
R222_A_5	581112.09	4194480.72	6.73
R223_A_5	581117.09	4194480.84	6.64
R224_A_5	581122.09	4194480.96	6.54
R225_A_5	581127.09	4194481.08	6.44
R226_A_5	581132.09	4194481.2	6.33
R227_A_5	581137.09	4194481.32	6.19
R228_A_5	581142.08	4194481.44	6.07
R229_A_5	581147.08	4194481.56	5.96
R230_A_5	581152.08	4194481.68	5.89
R231_A_5	581157.08	4194481.8	5.79
R232_A_5	581162.08	4194481.92	5.67
R233_A_5	581167.08	4194482.04	5.57
R234_A_5	581091.98	4194485.24	6.99
R235_A_5	581096.98	4194485.36	6.92
R236_A_5	581101.98	4194485.48	6.85
R237_A_5	581106.98	4194485.6	6.77
R238_A_5	581111.97	4194485.72	6.71
R239_A_5	581116.97	4194485.84	6.63
R240_A_5	581121.97	4194485.96	6.55
R241_A_5	581126.97	4194486.08	6.44
R242_A_5	581131.97	4194486.2	6.32
R243_A_5	581136.97	4194486.32	6.19
R244_A_5	581141.97	4194486.44	6.07
R245_A_5	581146.96	4194486.56	5.95
R246_A_5	581151.96	4194486.68	5.85
R247_A_5	581156.96	4194486.8	5.75
R248_A_5	581161.96	4194486.92	5.64
R249_A_5	581166.96	4194487.04	5.59
R250_A_5	581091.86	4194490.24	6.89
R251_A_5	581096.86	4194490.36	6.84
R252_A_5	581101.86	4194490.48	6.79
R253_A_5	581106.86	4194490.6	6.73
R254_A_5	581111.85	4194490.72	6.68
R255_A_5	581116.85	4194490.84	6.61
R256_A_5	581121.85	4194490.96	6.53
R257_A_5	581126.85	4194491.08	6.43
R258_A_5	581131.85	4194491.2	6.31

Receptor ID	UTMx	UTMy	Elevation[1]
R259_A_5	581136.85	4194491.32	6.18
R260_A_5	581141.85	4194491.44	6.05
R261_A_5	581146.84	4194491.56	5.92
R262_A_5	581151.84	4194491.68	5.81
R263_A_5	581156.84	4194491.8	5.73
R264_A_5	581161.84	4194491.92	5.67
R265_A_5	581166.84	4194492.04	5.67
R266_B_5	581167.1	4194271.98	7.36
R267_B_5	581172.1	4194272.1	7.36
R268_B_5	581177.1	4194272.22	7.33
R269_B_5	581182.1	4194272.34	7.3
R270_B_5	581166.98	4194276.98	7.29
R271_B_5	581171.98	4194277.1	7.3
R272_B_5	581176.98	4194277.22	7.3
R273_B_5	581181.98	4194277.34	7.28
R274_B_5	581166.86	4194281.98	7.21
R275_B_5	581171.86	4194282.1	7.25
R276_B_5	581176.86	4194282.22	7.25
R277_B_5	581181.86	4194282.33	7.25
R278_B_5	581166.74	4194286.97	7.12
R279_B_5	581171.74	4194287.09	7.17
R280_B_5	581176.74	4194287.21	7.19
R281_B_5	581181.74	4194287.33	7.2
R282_B_5	581166.62	4194291.97	7.02
R283_B_5	581171.62	4194292.09	7.07
R284_B_5	581176.62	4194292.21	7.11
R285_B_5	581181.62	4194292.33	7.14
R286_B_5	581166.5	4194296.97	6.93
R287_B_5	581171.5	4194297.09	6.98
R288_B_5	581176.5	4194297.21	7.02
R289_B_5	581181.5	4194297.33	7.06
R290_B_5	581166.38	4194301.97	6.86
R291_B_5	581171.38	4194302.09	6.88
R292_B_5	581176.38	4194302.21	6.92
R293_B_5	581181.38	4194302.33	6.96
R294_B_5	581166.26	4194306.97	6.8
R295_B_5	581171.26	4194307.09	6.81
R296_B_5	581176.26	4194307.21	6.83
R297_B_5	581181.26	4194307.33	6.86
R298_B_5	581166.14	4194311.97	6.75
R299_B_5	581171.14	4194312.09	6.75
R300_B_5	581176.14	4194312.21	6.76
R301_B_5	581181.14	4194312.33	6.77
R302_B_5	581166.03	4194316.97	6.7
R303_B_5	581171.02	4194317.09	6.7

Receptor ID	UTMx	UTMy	Elevation[1]
R304_B_5	581176.02	4194317.21	6.7
R305_B_5	581181.02	4194317.32	6.7
R306_B_5	581105.92	4194320.53	6.56
R307_B_5	581110.92	4194320.65	6.5
R308_B_5	581165.91	4194321.96	6.66
R309_B_5	581170.9	4194322.08	6.65
R310_B_5	581175.9	4194322.2	6.65
R311_B_5	581180.9	4194322.32	6.64
R312_B_5	581105.8	4194325.53	6.49
R313_B_5	581110.8	4194325.65	6.43
R314_B_5	581115.8	4194325.77	6.37
R315_B_5	581165.78	4194326.96	6.58
R316_B_5	581170.78	4194327.08	6.58
R317_B_5	581175.78	4194327.2	6.58
R318_B_5	581180.78	4194327.32	6.59
R319_B_5	581090.69	4194330.17	6.29
R320_B_5	581095.69	4194330.29	6.26
R321_B_5	581100.68	4194330.41	6.21
R322_B_5	581105.68	4194330.53	6.16
R323_B_5	581110.68	4194330.65	6.13
R324_B_5	581115.68	4194330.77	6.1
R325_B_5	581120.68	4194330.89	6.11
R326_B_5	581125.68	4194331.01	6.12
R327_B_5	581130.68	4194331.12	6.14
R328_B_5	581135.67	4194331.24	6.16
R329_B_5	581140.67	4194331.36	6.18
R330_B_5	581145.67	4194331.48	6.22
R331_B_5	581150.67	4194331.6	6.28
R332_B_5	581155.67	4194331.72	6.34
R333_B_5	581160.67	4194331.84	6.4
R334_B_5	581165.67	4194331.96	6.44
R335_B_5	581170.66	4194332.08	6.47
R336_B_5	581175.66	4194332.2	6.5
R337_B_5	581180.66	4194332.32	6.53
R338_B_5	581090.57	4194335.17	5.99
R339_B_5	581095.57	4194335.29	5.94
R340_B_5	581100.57	4194335.41	5.89
R341_B_5	581105.56	4194335.52	5.85
R342_B_5	581110.56	4194335.65	5.84
R343_B_5	581115.56	4194335.76	5.85
R344_B_5	581120.56	4194335.88	5.89
R345_B_5	581125.56	4194336	5.93
R346_B_5	581130.56	4194336.12	5.97
R347_B_5	581135.56	4194336.24	5.99
R348_B_5	581140.55	4194336.36	6

Receptor ID	UTMx	UTMy	Elevation[1]
R349_B_5	581145.55	4194336.48	6.02
R350_B_5	581150.55	4194336.6	6.06
R351_B_5	581155.55	4194336.72	6.13
R352_B_5	581160.55	4194336.84	6.21
R353_B_5	581165.55	4194336.96	6.28
R354_B_5	581170.55	4194337.08	6.32
R355_B_5	581175.54	4194337.2	6.37
R356_B_5	581180.54	4194337.32	6.41
R357_B_5	581090.45	4194340.16	5.87
R358_B_5	581095.45	4194340.29	5.82
R359_B_5	581100.45	4194340.4	5.77
R360_B_5	581105.44	4194340.52	5.72
R361_B_5	581110.44	4194340.64	5.69
R362_B_5	581115.44	4194340.76	5.68
R363_B_5	581120.44	4194340.88	5.7
R364_B_5	581125.44	4194341	5.72
R365_B_5	581130.44	4194341.12	5.73
R366_B_5	581135.44	4194341.24	5.75
R367_B_5	581140.43	4194341.36	5.77
R368_B_5	581145.43	4194341.48	5.83
R369_B_5	581150.43	4194341.6	5.89
R370_B_5	581155.43	4194341.72	5.95
R371_B_5	581160.43	4194341.84	5.99
R372_B_5	581165.43	4194341.96	6.03
R373_B_5	581170.43	4194342.08	6.07
R374_B_5	581175.42	4194342.2	6.12
R375_B_5	581180.42	4194342.32	6.16
R376_B_5	581090.33	4194345.16	5.75
R377_B_5	581095.33	4194345.28	5.7
R378_B_5	581100.33	4194345.4	5.65
R379_B_5	581105.32	4194345.52	5.6
R380_B_5	581110.32	4194345.64	5.55
R381_B_5	581115.32	4194345.76	5.52
R382_B_5	581120.32	4194345.88	5.51
R383_B_5	581125.32	4194346	5.51
R384_B_5	581130.32	4194346.12	5.51
R385_B_5	581135.32	4194346.24	5.53
R386_B_5	581140.31	4194346.36	5.56
R387_B_5	581145.31	4194346.48	5.64
R388_B_5	581150.31	4194346.6	5.71
R389_B_5	581155.31	4194346.72	5.77
R390_B_5	581160.31	4194346.84	5.79
R391_B_5	581165.31	4194346.96	5.8
R392_B_5	581170.31	4194347.08	5.84
R393_B_5	581175.3	4194347.2	5.88

Receptor ID	UTMx	UTMy	Elevation[1]
R394_B_5	581180.3	4194347.32	5.92
R395_B_5	581100.21	4194350.4	5.65
R396_B_5	581105.21	4194350.52	5.58
R397_B_5	581110.2	4194350.64	5.52
R398_B_5	581115.2	4194350.76	5.45
R399_B_5	581120.2	4194350.88	5.43
R400_B_5	581125.2	4194351	5.41
R401_B_5	581130.2	4194351.12	5.4
R402_B_5	581135.2	4194351.24	5.41
R403_B_5	581140.19	4194351.36	5.43
R404_B_5	581145.19	4194351.48	5.48
R405_B_5	581150.19	4194351.6	5.53
R406_B_5	581155.19	4194351.72	5.59
R407_B_5	581160.19	4194351.84	5.61
R408_B_5	581165.19	4194351.96	5.64
R409_B_5	581170.19	4194352.08	5.65
R410_B_5	581175.18	4194352.19	5.68
R411_B_5	581180.18	4194352.31	5.72
R412_B_5	581110.08	4194355.64	5.48
R413_B_5	581115.08	4194355.76	5.39
R414_B_5	581120.08	4194355.88	5.34
R415_B_5	581125.08	4194356	5.31
R416_B_5	581130.08	4194356.12	5.3
R417_B_5	581135.08	4194356.24	5.3
R418_B_5	581140.08	4194356.36	5.3
R419_B_5	581145.07	4194356.48	5.33
R420_B_5	581150.07	4194356.6	5.37
R421_B_5	581155.07	4194356.72	5.42
R422_B_5	581160.07	4194356.84	5.45
R423_B_5	581165.07	4194356.95	5.48
R424_B_5	581170.07	4194357.07	5.49
R425_B_5	581175.07	4194357.19	5.51
R426_B_5	581180.06	4194357.31	5.53
R427_B_5	581114.96	4194360.76	5.43
R428_B_5	581119.96	4194360.88	5.36
R429_B_5	581124.96	4194361	5.32
R430_B_5	581129.96	4194361.12	5.3
R431_B_5	581134.96	4194361.24	5.3
R432_B_5	581139.96	4194361.36	5.31
R433_B_5	581144.95	4194361.48	5.32
R434_B_5	581149.95	4194361.59	5.33
R435_B_5	581154.95	4194361.71	5.36
R436_B_5	581159.95	4194361.83	5.38
R437_B_5	581164.95	4194361.95	5.4
R438_B_5	581169.95	4194362.07	5.42

Receptor ID	UTMx	UTMy	Elevation[1]
R439_B_5	581174.95	4194362.19	5.42
R440_B_5	581179.94	4194362.31	5.39
R441_B_5	581119.84	4194365.88	5.39
R442_B_5	581124.84	4194366	5.32
R443_B_5	581129.84	4194366.11	5.3
R444_B_5	581134.84	4194366.23	5.3
R445_B_5	581139.84	4194366.35	5.31
R446_B_5	581144.84	4194366.47	5.31
R447_B_5	581149.83	4194366.59	5.31
R448_B_5	581154.83	4194366.71	5.3
R449_B_5	581159.83	4194366.83	5.31
R450_B_5	581164.83	4194366.95	5.32
R451_B_5	581169.83	4194367.07	5.35
R452_B_5	581174.83	4194367.19	5.32
R453_B_5	581179.83	4194367.31	5.26
R454_B_5	581124.72	4194370.99	5.37
R455_B_5	581129.72	4194371.11	5.36
R456_B_5	581134.72	4194371.23	5.36
R457_B_5	581139.72	4194371.35	5.36
R458_B_5	581144.72	4194371.47	5.37
R459_B_5	581149.71	4194371.59	5.36
R460_B_5	581154.71	4194371.71	5.34
R461_B_5	581159.71	4194371.83	5.3
R462_B_5	581164.71	4194371.95	5.26
R463_B_5	581169.71	4194372.07	5.24
R464_B_5	581174.71	4194372.19	5.2
R465_B_5	581179.71	4194372.31	5.14
R466_B_5	581129.6	4194376.11	5.41
R467_B_5	581134.6	4194376.23	5.41
R468_B_5	581139.6	4194376.35	5.42
R469_B_5	581144.6	4194376.47	5.42
R470_B_5	581149.59	4194376.59	5.41
R471_B_5	581154.59	4194376.71	5.37
R472_B_5	581159.59	4194376.83	5.29
R473_B_5	581164.59	4194376.95	5.2
R474_B_5	581169.59	4194377.07	5.13
R475_B_5	581174.59	4194377.19	5.07
R476_B_5	581179.59	4194377.31	5.03
R477_B_5	581134.48	4194381.23	5.51
R478_B_5	581139.48	4194381.35	5.49
R479_B_5	581144.48	4194381.47	5.45
R480_B_5	581149.47	4194381.59	5.41
R481_B_5	581154.47	4194381.71	5.34
R482_B_5	581159.47	4194381.83	5.27
R483_B_5	581164.47	4194381.95	5.19

Receptor ID	UTMx	UTMy	Elevation[1]
R484_B_5	581169.47	4194382.07	5.11
R485_B_5	581174.47	4194382.19	5.04
R486_B_5	581179.47	4194382.31	4.98
R487_B_5	581144.36	4194386.47	5.48
R488_B_5	581149.36	4194386.59	5.4
R489_B_5	581154.35	4194386.71	5.32
R490_B_5	581159.35	4194386.83	5.25
R491_B_5	581164.35	4194386.95	5.18
R492_B_5	581169.35	4194387.06	5.09
R493_B_5	581174.35	4194387.19	5.01
R494_B_5	581179.35	4194387.31	4.95
R495_B_5	581149.24	4194391.59	5.43
R496_B_5	581154.23	4194391.71	5.35
R497_B_5	581159.23	4194391.82	5.27
R498_B_5	581164.23	4194391.94	5.2
R499_B_5	581169.23	4194392.06	5.12
R500_B_5	581174.23	4194392.18	5.06
R501_B_5	581179.23	4194392.3	5
R502_B_5	581159.11	4194396.82	5.3
R503_B_5	581164.11	4194396.94	5.21
R504_B_5	581169.11	4194397.06	5.16
R505_B_5	581174.11	4194397.18	5.1
R506_B_5	581179.11	4194397.3	5.05
R507_B_5	581173.99	4194402.18	5.08
R508_B_5	581178.99	4194402.3	5
R509_C_5	581072.37	4194259.71	7.19
R510_C_5	581077.37	4194259.83	7.3
R511_C_5	581082.36	4194259.95	7.32
R512_C_5	581087.36	4194260.07	7.26
R513_C_5	581067.25	4194264.59	6.9
R514_C_5	581072.25	4194264.71	7.06
R515_C_5	581077.25	4194264.83	7.17
R516_C_5	581082.25	4194264.95	7.2
R517_C_5	581087.24	4194265.07	7.14
R518_C_5	581062.13	4194269.47	6.74
R519_C_5	581067.13	4194269.59	6.79
R520_C_5	581072.13	4194269.71	6.91
R521_C_5	581077.13	4194269.83	7.01
R522_C_5	581082.13	4194269.95	7.09
R523_C_5	581087.12	4194270.07	7.08
R524_C_5	581052.01	4194274.23	6.71
R525_C_5	581057.01	4194274.35	6.7
R526_C_5	581062.01	4194274.47	6.7
R527_C_5	581067.01	4194274.59	6.72
R528_C_5	581072.01	4194274.71	6.79

Receptor ID	UTMx	UTMy	Elevation[1]
R529_C_5	581077.01	4194274.83	6.88
R530_C_5	581082.01	4194274.95	6.98
R531_C_5	581087	4194275.06	7.01
R532_C_5	581046.9	4194279.11	6.71
R533_C_5	581051.89	4194279.23	6.71
R534_C_5	581056.89	4194279.35	6.71
R535_C_5	581061.89	4194279.47	6.7
R536_C_5	581066.89	4194279.58	6.7
R537_C_5	581071.89	4194279.7	6.75
R538_C_5	581076.89	4194279.82	6.81
R539_C_5	581081.89	4194279.94	6.89
R540_C_5	581086.88	4194280.06	6.92
R541_C_5	581051.77	4194284.22	6.71
R542_C_5	581056.77	4194284.34	6.71
R543_C_5	581061.77	4194284.46	6.71
R544_C_5	581066.77	4194284.58	6.7
R545_C_5	581071.77	4194284.7	6.72
R546_C_5	581076.77	4194284.82	6.75
R547_C_5	581081.77	4194284.94	6.81
R548_C_5	581086.77	4194285.06	6.84
R549_C_5	581056.65	4194289.34	6.72
R550_C_5	581061.65	4194289.46	6.72
R551_C_5	581066.65	4194289.58	6.71
R552_C_5	581071.65	4194289.7	6.71
R553_C_5	581076.65	4194289.82	6.73
R554_C_5	581081.65	4194289.94	6.76
R555_C_5	581086.65	4194290.06	6.79
R556_C_5	581061.53	4194294.46	6.71
R557_C_5	581066.53	4194294.58	6.71
R558_C_5	581071.53	4194294.7	6.71
R559_C_5	581076.53	4194294.82	6.71
R560_C_5	581081.53	4194294.94	6.73
R561_C_5	581086.53	4194295.06	6.75
R562_C_5	581061.41	4194299.46	6.63
R563_C_5	581066.41	4194299.58	6.65
R564_C_5	581071.41	4194299.7	6.68
R565_C_5	581076.41	4194299.82	6.71
R566_C_5	581081.41	4194299.94	6.72
R567_C_5	581086.41	4194300.06	6.74
R568_C_5	581066.29	4194304.58	6.6
R569_C_5	581071.29	4194304.7	6.66
R570_C_5	581076.29	4194304.82	6.71
R571_C_5	581081.29	4194304.94	6.72
R572_C_5	581086.29	4194305.06	6.72
R573_C_5	581071.17	4194309.69	6.61

Receptor ID	UTMx	UTMy	Elevation[1]
R574_C_5	581076.17	4194309.81	6.67
R575_C_5	581081.17	4194309.94	6.68
R576_C_5	581086.17	4194310.05	6.69
R577_C_5	581071.05	4194314.69	6.55
R578_C_5	581076.05	4194314.81	6.62
R579_C_5	581081.05	4194314.93	6.63
R580_C_5	581086.05	4194315.05	6.66
R581_C_5	581075.93	4194319.81	6.54
R582_C_5	581080.93	4194319.93	6.58
R583_C_5	581085.93	4194320.05	6.62
R584_C_5	581080.81	4194324.93	6.51
R585_C_5	581085.81	4194325.05	6.56
R586_C_5	581080.69	4194329.93	6.29
R587_C_5	581085.69	4194330.05	6.29
R588_C_5	581085.57	4194335.05	6.04

[1] Elevation shown here is adjusted to be within -10 to 10 meters, consistent with the links. The elevation also includes a breathing height of 1.8m and assumes 3 m for each story.

APPENDIX E
PROPOSED EQUIPMENT CONTROLS

Table E-1
Proposed Pollution Control Measures[1]
Saranap Village Mitigated Alternative
Walnut Creek, California

Phase	Equipment	Pollution Control Measures		
		Tier 3 Engine	2-Minute Idling Restriction[2]	Diesel Particulate Filter[3]
Demolition	Concrete/ Industrial Saws	X	X	
	Excavators	X	X	X
	Rubber Tired Dozers	X	X	
Grading	Excavators	X	X	X
	Rubber Tired Dozers	X	X	
	Water Truck	X	X	
	Tractors/ Loaders/ Backhoes	X	X	
	Skiploader	X	X	
Building Construction	Cranes	X	X	
	Forklifts	X	X	X
	Tractors/ Loaders/ Backhoes	X	X	
	Skiploader	X	X	
	Welders	X	X	
Architectural Coating	Air Compressors	X	X	X
Street Improvements	Pavers	X	X	
	Paving Equipment	X	X	
	Rollers	X	X	X
	Skiploader	X	X	

Notes:

1. The pollution control measures described in this table are required to meet the less than significant levels outlined in Table 14b.

2. Based on the BAAQMD CEQA Air Quality Guidelines, restricting off-road construction equipmet to 2 minutes of idling time can cause a 45% reduction of PM_{10} and $PM_{2.5}$ emissions and a 20% reduction in NOx emissions.

3. Level 3 Diesel Particulate Filters are a type of CARB Certified Level 3 Verified Diesel Emission Control (VDEC) that can be used to achieve an 85% reduction of DPM emissions.

Abbreviations:

BAAQMD - Bay Area Air Quality Management District
CARB - California Air Resources Board
CEQA - California Environmental Quality Act
DPM - diesel particulate matter
NOx - nitrogen oxide
PM - particulate matter
VDEC - Verified Diesel Emission Control

References:

BAAQMD. 2011. CEQA Air Quality Guidelines. May. Table 8-2 and Page B-12. Available at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx. Accessed November 2015.

CARB. Verified Diesel Control Technologies. Available online: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm. Accessed: November 2015.

APPENDIX C

Tree Impact Technical Report

This page intentionally left blank

KIER & WRIGHT
Civil Engineers & Surveyors, Inc.

July 7, 2015

Reed Onate
Vice President - Forward Planning
Hall Equities Group - CA-DRE #00241430
1855 Olympic Blvd. Suite 300
Walnut Creek, CA

RE: Saranap Village Project – Tree Impacts
Walnut Creek, Ca

Dear Reed:

We have reviewed the Revised Arborist Report dated January 2014, which was prepared by HortScience for the Saranap Village Project that was studied in the Draft EIR. We have compared the tree survey information from that report to the building and grading footprints proposed for the Mitigated Alternative. All trees proposed to be preserved will be preserved under the Mitigated Alternative. The relationship between building/grading footprints and the trees identified in the HortScience report will be essentially the same for the Mitigated Alternative as for the Project, with the following exceptions:

- Tree #21 will be preserved in place, rather than relocated to the traffic circle.
- Development will be slightly closer to Tree #66, which is located off the project site, within Boulevard Terrace. Building B in the Mitigated Alternative is approximately 14' from the tree trunk, while Building B in the Project is approximately 16' from the tree trunk.
- All grading within the Mitigated Alternative will conform to existing ground at the property line, adjacent to Tree #66. The area between Building B and the Mitigated Project property line will contain decomposed granite and landscape planting, which will provide a pervious surface beneficial to the health of the tree.

Sincerely,
KIER & WRIGHT- Civil Engineers & Surveyors, Inc.

Mike Cooper

Mike Cooper, PE
Senior Project Manager

2850 Collier Canyon Rd · Livermore, California 94551 · (925) 245-8788 · FAX (925) 245-8796

This page intentionally left blank

APPENDIX D

Greenhouse Gas Technical Report

This page intentionally left blank

Intended for:
Hall Equities Group
Walnut Creek, California

Prepared By:
Ramboll Environ US Corporation
San Francisco, California

Date
November 2015

Project Number
03-34227C

SARANAP VILLAGE MITIGATED ALTERNATIVE GREENHOUSE GAS TECHNICAL REPORT

BOULEVARD WAY & SARANAP AVENUE WALNUT CREEK, CALIFORNIA

RAMBOLL ENVIRON

CONTENTS

1.	**INTRODUCTION**	**1**
1.1	Mitigated Alternative Understanding	1
1.2	Objective and Methodology	2
1.3	Report Organization	2
2.	**EMISSION ESTIMATES**	**3**
2.1	Calculation Methodologies for Construction Emissions	3
2.2	Calculation Methodologies for Operational Emissions	3
2.2.1	Area Sources	3
2.2.2	Emergency Generators	4
2.2.3	Mitigated Alternative Traffic	4
2.2.4	Indirect Sources	4
3.	**RESULTS FOR MITIGATED ALTERNATIVE ANALYSIS**	**6**
3.1	Construction GHGs	6
3.2	Operational GHGs	6
3.3	Potential Mitigation Measures	7
4.	**REFERENCES**	**8**

TABLES

Table 1: Conceptual Layout of Proposed Maximum Development

Table 2: Construction Equipment List

Table 3: Summary of Greenhouse Gas Emissions - Emergency Engines

Table 4: Proposed Project Daily Trip Generation

Table 5: Summary of Construction Greenhouse Gas Emissions

Table 6a: Summary of Operational Greenhouse Gas Emissions: All Sources (Historical Electricity Emission Factors)

Table 6b: Summary of Operational Greenhouse Gas Emissions: All Sources (Projected Electricity Emission Factors)

Table 7: Potential Mitigation Measures

Table 8: Proposed PV System Production (2018)

APPENDICIES

Appendix A: CalEEMod® Construction and Operational Output Files

ACRONYMS AND ABBREVIATIONS

ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
CalEEMod®	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
EMFAC2011	California Air Resource Board's Emissions Factor Model
GHG	Greenhouse Gas
GWP	Global Warming Potential
Hall	Hall Equities Group
N_2O	Nitrous Oxide
PG&E	Pacific Gas & Electric
RPS	Renewable Portfolio Standards
SP	Service Population
TIA	Traffic Impact Analysis
VMT	Vehicle Miles Traveled

Units

kW	Kilowatt
MT	Metric tonnes
MW	Megawatt
Yr	Year

1. INTRODUCTION

At the request of the Hall Equities Group (Hall), Ramboll Environ has prepared a technical report evaluating greenhouse gas (GHG) emissions associated with a Mitigated Alternative for the proposed construction and operation of the mixed-use Saranap Village development located at Boulevard Way and Saranap Avenue in the unincorporated Walnut Creek area, California ("Mitigated Alternative"). Ramboll Environ (at the time known as ENVIRON International Corp.) prepared the Greenhouse Gas Technical Report for the original proposed Project in April 2014.

Ramboll Environ followed California Environmental Quality Act (CEQA) Guidelines released by the Bay Area Air Quality Management District (BAAQMD or District) in May 2012 (BAAQMD 2012). The May 2012 CEQA Air Quality Guidelines do not prescribe specific significance thresholds. In this assessment, as a conservative measure, Ramboll Environ has compared the results to the prior thresholds presented in the May 2010 and 2011 Guidelines, referred to herein as the 2011 CEQA significance thresholds (BAAQMD 2011). On August 13, 2013, the California First District Court of Appeal rejected legal challenges to the significance thresholds, including numeric GHG thresholds of significance, indicating that they were based upon substantial evidence.[1] The thresholds are based upon extensive analysis and evidence set forth in BAAQMD's Thresholds of Significance Justification, dated June 2, 2010, and are used for that reason. The analyses described in this report were performed to support the Mitigated Alternative's CEQA documentation.

1.1 Mitigated Alternative Understanding

The proposed Mitigated Alternative would be located around the intersection of Boulevard Way and Saranap Avenue, extending along the north and south sides of Boulevard Way and along the east side of Saranap Avenue. It would lie approximately one quarter of a mile west of the Walnut Creek city limits, and just south of Highway 24. Surrounding existing uses generally include a mixture of multifamily, commercial, retail, services, offices, auto repair, mini-mart, utility operations/storage yard, self-storage uses, funeral home, and other commercial uses.

The Mitigated Alternative site is comprised of four areas, clustered around the intersection of Boulevard Way and Saranap Avenue, totaling approximately 4.6 acres, and includes the public rights of way along the Mitigated Alternative frontages. Of that amount, approximately 3.5 acres is occupied by Sites A, B, B1, and C. Offsite and onsite street improvements would extend east along Boulevard Way to its intersection with Flora Avenue. The total area that would be disturbed by mass grading or trenching, including the offsite improvement areas, is 5.3 acres.

The proposed Mitigated Alternative will demolish the existing buildings and develop mixed-use buildings and associated parking structures and lots. The Mitigated Alternative will

[1] The Court of Appeal's decision was appealed to the California Supreme Court, which granted review limited to the following issue: Under what circumstances, if any, does the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project? http://appellatecases.courtinfo.ca.gov/search/case/mainCaseScreen.cfm?dist=0&doc_id=2056930&doc_no=S213478

predominantly be used for residential and retail land uses, but also includes a restaurant and coffee shop as well as pools for building occupants. **Table 1** shows the proposed land uses by parcel for the Mitigated Alternative.

1.2 Objective and Methodology

The BAAQMD 2011 CEQA Guidelines contain recommended thresholds for GHG emissions from an individual project undergoing environmental review pursuant to CEQA. Construction and operational GHGs are included in this technical report.

The evaluation compares Mitigated Alternative-related GHG emissions to BAAQMD's 2011 CEQA thresholds of significance for operational GHG emissions: 1,100 metric tons (MT) of carbon dioxide equivalents per year (CO_2e/yr) or 4.6 MT CO_2e/service population/yr. Stationary sources are considered separately, with a threshold of 10,000 MT CO_2e/yr.

1.3 Report Organization

This technical report is divided into four sections as follows:

Section 1.0 – Introduction: describes the purpose and scope of this technical report, the objectives and methodology used in this technical report and outlines the report organization.

Section 2.0 – Emission Estimates: describes the methods used to estimate the emissions of GHGs from the Mitigated Alternative.

Section 3.0 – Results for Mitigated Alternative Analysis: presents the average daily and total annual GHG emissions and compares them to BAAQMD significance thresholds. Section 3 also includes a sub-section on mitigation.

Section 4.0 – References: includes a listing of references cited in this report.

2. EMISSION ESTIMATES

As was the case with the greenhouse gas analysis of the Project, and as a conservative measure, this analysis evaluates Mitigated Alternative impacts only, and does not subtract out existing uses. Information regarding emissions of existing uses was not readily available, thus this analysis does not net out existing emissions from Mitigated Alternative emissions. Accordingly, this analysis takes a conservative approach of assuming that baseline emissions at the Saranap site are zero and thus there are zero emissions per existing service population. Furthermore, this analysis includes the Mitigated Alternative service population in line with the Mitigated Alternative emissions to analyze results. Actual net impacts from the Mitigated Alternative may be much lower than listed as existing buildings are old and not nearly as efficient as new buildings. The methodology used to calculate emissions from the proposed Mitigated Alternative is presented and summarized in each of the following sub-sections.

2.1 Calculation Methodologies for Construction Emissions

Sources of construction emissions are off-road exhaust and on-road vehicle exhaust. Emissions were estimated using information on equipment inventory, equipment specifications and construction phase scheduling, generated using CalEEMod® and refined and approved by Hall Equities Group. **Table 2** shows the construction equipment list for the Mitigated Alternative based on information provided by Hall Equities Group. Consistent with the approach for estimating operational GHG emissions, the total GHG emissions from on-road vehicle exhaust from construction activities[2] were estimated using the California Emissions Estimator Model (CalEEMod®).[3] The emissions from construction off-road equipment were calculated using the CalEEMod® emission factors to analyze emissions from each piece of equipment. The off-road equipment emissions were calculated as the product of the equipment emission factor, load factor, horsepower, and period of usage. Construction emission calculation methodologies were consistent with the BAAQMD CEQA Guidelines (BAAQMD 2012).

2.2 Calculation Methodologies for Operational Emissions

Sources of GHG emissions at the proposed Mitigated Alternative include area sources, natural gas-fired emergency generators, Mitigated Alternative-generated traffic, and other indirect emissions such as emissions associated with electricity generation and transportation, water and wastewater supply and treatment, transportation, and solid waste disposal. The emissions calculation methodologies for each of these sources are discussed below.

2.2.1 Area Sources

Ramboll Environ assumes that all direct area source emissions are based on CalEEMod® defaults for the building type (see **Table 1** for CalEEMod® Land Use Types). Ramboll Environ used CalEEMod® defaults based on building square footage and operational year to calculate

[2] CalEEMod® GHG construction emissions include mobile on-road emissions as well as non-mobile emissions such as those from architectural coatings.

[3] CalEEMod® 2013.2.2. http://caleemod.com/ Accessed June 2015.

equipment activity and area source emissions. Saranap area source GHG emissions are dominated by emissions from residential natural gas fireplaces.

2.2.2 Emergency Generators

The proposed Mitigated Alternative includes three new natural-gas fired emergency generators, one next to each proposed parcel, as shown in **Table 3**. GHG emissions were calculated according to the AP-42 emissions factors for each engine (80 to 100 kW in size) using the methodology from **Table 3**.

2.2.3 Mitigated Alternative Traffic

Mitigated Alternative-generated traffic that contributes to the operational GHG emissions includes commercial and residential trips. As shown in **Table 4**, average daily trip counts and pass-by trip percentages were based on the Traffic Impact Analysis (TIA) report provided by the project transportation engineer.[4] Average trip length and daily/annual vehicle miles traveled (VMT) were estimated by CalEEMod® (Contra Costa County defaults by land use, which represent average trip length throughout the county for each land use) and Economic and Planning Systems, Inc. (location-specific survey data) for the Mitigated Alternative traffic impact analysis. Note the Mitigated Alternative trips do not include a subtraction of existing trips. This is conservative and in line with the Mitigated Alternative impact analysis for all sources.

The CalEEMod® default trip lengths were used to model trips to and from home for the residents of the proposed Mitigated Alternative. The commercial trip lengths for customers of the proposed Mitigated Alternative were adjusted from defaults based on a trade area analysis provided by Economic and Planning Systems, Inc.[5]

The CalEEMod® carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) emission factors, based on the county-wide annual average emission factors obtained from California Air Resource Board's Emissions Factor Model (EMFAC2011) for calendar year 2018 (the first year the Mitigated Alternative would be built out under the proposed construction schedule), were used to estimate traffic emissions. Global warming potentials (GWP) were obtained from California Climate Action Registry (CCAR 2008). Ramboll Environ also evaluated 2020 and 2025 mobile emissions using emission factor adjustments to account for CARB's Advanced Clean Cars Program.[6]

2.2.4 Indirect Sources

In addition, other indirect emissions such as emissions associated with electricity generation and transportation, water supply and water and wastewater treatment, and solid waste disposal will contribute to GHG emissions. Ramboll Environ used CalEEMod® defaults based on building square footage and operational year to calculate indirect GHG emissions. Energy demand was adjusted per the California Energy Commission's 2013 standards for the

---

[4] Omni-Means., Traffic Impact Analysis for the Proposed Saranap Village Mitigated Alternative. Table 2a. July 1, 2015.

[5] Data received from Ashleigh Kanat, Economic and Planning Systems, Inc. March 12, 2014.

[6] California Air Resources Board, Advanced Clean Cars Summary Available online: http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf. Accessed June 2015.

Building Energy Efficiency Program (Title 24).[7] Default CalEEMod® electricity usage was reduced by 23.3% and 21.8% for residential and non-residential land use, respectively.[8] Default CalEEMod® natural gas usage was reduced by 3.8% and 16.8% for residential and non-residential land use, respectively.[9] The Mitigated Alternative historical electricity emission factors were based on a three-year rolling average of most recently available third-party verified Pacific Gas & Electric (PG&E) emission factors (2011-2013), as reported to The Climate Registry.[10] Projected Electricity Emission Factors for the year-by-year analysis were based on PG&E projections using the California Public Utility Commission (CPUC) GHG Calculator.[11] In addition, Ramboll Environ evaluated projected electricity emissions for 2020 and 2025 based on California Public Utility Commission's Renewable Portfolio Standards (RPS) of 33%.[12,13]

[7] California Energy Commission, Building Energy Efficiency Program. Available online: http://www.energy.ca.gov/title24/. Accessed June 2015.

[8] California Energy Commission, Impact Analysis: California's 2013 Building Energy Efficiency Standards - Table 2. July 2013. Available online: http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf. Accessed May 2015.

[9] California Energy Commission, Impact Analysis: California's 2013 Building Energy Efficiency Standards - Table 4. July 2013. Available online: http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf. Accessed May 2015.

[10] The Climate Registry. General Reporting Protocol: Utility Specific Emission Factors. Available online: http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/. Accessed June 2015.

[11] PG&E. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. April 2013. Available online: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf. Accessed June 2015.

[12] California Public Utilities Commission. California Renewable Portfolio Standard (RPS). Available online: http://www.cpuc.ca.gov/PUC/energy/Renewables. Accessed June 2015.

[13] Note, the Title 24 and 2020 RPS does not take into account Senate Bill 350/Governor's target of 50% RPS by 2030, 50% reduction in petroleum use by 2030, and 50% increase in building energy efficiency by 2030: http://focus.senate.ca.gov/sites/focus.senate.ca.gov/files/climate/505050.html. This analysis only includes adopted measures but, if SB350 is implemented, long term impacts would be even lower.

3. RESULTS FOR MITIGATED ALTERNATIVE ANALYSIS

In this Section, the Mitigated Alternative results are compared to the BAAQMD thresholds.

3.1 Construction GHGs

Table 5 presents the total GHG emissions associated with Mitigated Alternative construction. The total Construction GHG emissions are 1,119 MT CO_2e. Although there are no CEQA thresholds for comparison for construction emissions, the published construction GHG emissions would fall below BAAQMD's most conservative CEQA threshold GHG emissions of 1,100 $MTCO_2e$/year (for projects that are not stationary sources) given that construction is ongoing over a 28-month period and total construction GHG emissions are 1,119 MT CO_2e across three calendar years (2016, 2017, and 2018)

3.2 Operational GHGs

Table 6a presents the total GHG emissions associated with Mitigated Alternative operation starting in 2018 using historical electricity emission factors and incorporating future RPS standards to estimate 2020 and 2025 GHG emissions. As discussed previously, this analysis does not net out existing emissions from the Mitigated Alternative site. Instead, this analysis takes a conservative approach of assuming that baseline emissions at the Mitigated Alternative site are zero and thus there are zero emissions per existing service population. Furthermore, this analysis includes the Mitigated Alternative service population in line with the Mitigated Alternative emissions to analyze results.

As discussed previously, the 2018 electricity emissions are conservatively based on the 2011-2013 electricity emission factors from PG&E. The GHG emissions from the Mitigated Alternative-generated traffic, energy (approximately 19% renewable energy as published by California Public Utilities Commission),[14] waste, and water result in emissions of 2,622 MT CO_2e/yr or 5.1 MT CO_2e/service population (SP)/yr. Both exceed the BAAQMD 2011 CEQA significance thresholds of 1,100 MT CO_2e/yr and 4.6 MT CO_2e/SP/yr. As shown in **Table 6a**, the Saranap Mitigated Alternative may require up to 239 MT CO_2e/year of additional GHG reductions to meet SP threshold assuming Mitigated Alternative build-out in 2018 if historical electricity emission factors were used for the evaluation. Incorporating future emission standards has the potential to reduce Mitigated Alternative GHG emissions due to a greener energy supply and more efficient automobiles. **Table 6a** also shows that, by 2020, Saranap will be below the SP threshold for Mitigated Alternative Operational GHG emissions.

However, in order to meet the 33% renewable standard by 2020, PG&E is continually incorporating additional renewables into its power mix. It has quantified this in the CPUC GHG calculator.[15,16] **Table 6b** summarizes the projected 2018 to 2020 year-by-year Mitigated Alternative GHG emissions, incorporating increased renewable energy as estimated

[14] California Renewables Portfolio Standard (RPS). Available online at: http://www.cpuc.ca.gov/PUC/energy/Renewables. Accessed June 2015.

[15] E3, GHG Calculator version 3c, worksheet tab "CO2 Allocations", cells AH35-AH44. Available online: www.ethree.com/documents/GHG%20update/GHG%20Calculator%20version%203c_Oct2010.zip. Accessed June 2015.

[16] PG&E. Greenhouse Gas Emission Factors: Guidance for PG&E Customers. April 2013. Available online at: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf. Accessed June 2015.

by PG&E. With the use of renewable resources in energy production the proposed Mitigated Alternative will exceed BAAQMD 2011 CEQA significance thresholds in 2018 by 135 MT CO_2e/yr. The SP threshold is exceeded by 55 MT CO_2e/yr in 2019, and in 2020, operational emissions are projected to fall below the SP GHG threshold. The operational GHG emissions from the Mitigated Alternative will continue to decrease over the future years.

Table 6a and 6b also show the total stationary source GHG emissions are 13.3 MT CO_2e/year which are below the BAAQMD CEQA threshold of 10,000 MT per year of CO_2e for stationary sources. Emergency generators are the only stationary source emissions for the Mitigated Alternative.

3.3 Potential Mitigation Measures

The Mitigated Alternative should be required to mitigate its emissions during the initial years of operation (2018, 2019) to achieve a performance standard of 4.6 MT CO_2e/SP/yr. Several potential mitigation measures for Mitigated Alternative-generated traffic GHG emissions were identified from a review of the California Air Pollution Control Officers Association (CAPCOA) guidance for GHG mitigation measures (CAPCOA 2010). These potential mitigation measures are summarized in **Table 7**. As noted in this table, the traffic mitigation measures fall into the several categories: neighborhood/site enhancements; parking policy/pricing; commute trip reduction programs; and transit system improvements.

A second potential approach is the installation of onsite solar photovoltaic systems. To meet the projected shortfall, we project that approximately 0.5 megawatts (MW) of solar energy, as reflected in **Table 8**, may be required. While this requires an initial capital investment, we understand that these systems typically have a payback period of approximately 10 years. The GHG reductions, however, continue throughout the roughly 30 year lifespan of the system.

Another potential option would be the purchase of GHG emission offsets. The California Air Resources Board (ARB) holds quarterly allowance auctions as part of its Cap-and-Trade Program. The next ARB auction reserve price is $12.10 per MT CO_2e, and in previous auctions the final price has been very close to the reserve price.[17] Based on this pricing and the maximum required additional GHG reductions shown in **Table 6b** the total offset cost (covering 2018 and 2019) would be approximately $2,300. Additionally, there are other types of GHG emissions credits available which cannot be used for Cap-and-Trade compliance; however, are still recognized to be of high quality. These credits typically cost in the range of $2-9 per MT. This translates to a total offset cost of approximately $380 to $1,710 for 2018 plus 2019.

The Mitigated Alternative should be required to purchase offsets sufficient to reduce impacts to 4.6 MT CO_2e/SP/yr during the initial years, or incorporate other measures to achieve this performance standard, all as demonstrated annually to the satisfaction of Contra Costa County.[18]

[17] Summary Results Report for the ARB California Cap-and-Trade Program and Quebec Cap and Trade System May 2015 Joint Auction #3, 2015. Available online at: http://www.arb.ca.gov/cc/capandtrade/auction/may-2015/summary_results_report.pdf. Accessed June 2015.

[18] Note residential service population based on the Contra Costa County General Plan Population average household size of 2.5 persons. Commercial service population is based on EIA defaults.

4. REFERENCES

AP-42, 1995. Compilation of Air Pollutant Emission Factors, Fifth edition. http://www.epa.gov/ttnchie1/ap42/

BAAQMD. 2011. California Environmental Quality Act Air Quality Guidelines. May. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_May%202011_5_3_11.ashx. Accessed June 2015.

BAAQMD. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

CalEEMod Version 2013.2.2 Available Online at: http://www.caleemod.com

California Air Pollution Control Officers Association (CAPCOA). 2010. Quantifying Greenhouse Gas Mitigation Measures. August.

California Energy Commission: Building Energy Efficiency Program - Title 24. Available online at: http://www.energy.ca.gov/title24/

California Public Utilities Commission. 2014. California Renewable Portfolio Standard (RPS). Available online: http://www.cpuc.ca.gov/PUC/energy/Renewables. Accessed June 2015.

CARB. 2012. Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-regulation.htm

CARB. 2013. Documentation of California's 2000-2010 GHG Inventory — Index. Available online at: http://www.arb.ca.gov/cc/inventory/doc/doc_index.php

CARB. Advanced Clean Cars Summary. Available online at: http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf

CCAR. 2008. General Verification Protocol. August.

E3. 2010. GHG Calculator version 3c, worksheet tab "CO2 Allocations", cells AH35-AH44. Available online: www.ethree.com/documents/GHG%20update/GHG%20Calculator%20version%203c_Oct2010.zip. October. Accessed June 2015.

Pacific Gas & Electric. 2013. PG&E Greenhouse Gas Emission Factors. Available online at: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf. April. Accessed June 2015

USEPA. 1997. Conversion Factors for Hydrocarbon Emission Components. November. http://www.epa.gov/oms/models/nonrdmdl/nr-002.pdf. Accessed November 2015.

TABLES

Table 1
Conceptual Layout of Proposed Maximum Development
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Parcel	Proposed Land Use	CalEEMod Land Use Type and Subtype	Proposed Size	Unit
A	Residential - Apartments	Apartments - Mid Rise	111	dwelling units
	Retail - Grocery Store	Supermarket	7,636	square feet
	Retail	Strip Mall[1]	1,750	square feet
	Swimming Pool	Recreational Swimming Pool	737	square feet
	Parking Garage	Enclosed Parking with Elevator	315	parking spaces
B	Residential - Apartments	Apartments - Mid Rise	55	dwelling units
	Swimming Pool	Recreational Swimming Pool	936	square feet
	Retail	Strip Mall	2,475	square feet
	Restaurant	High Turnover (Sit Down Restaurant)	4,813	square feet
	Parking Garage	Enclosed Parking with Elevator	108	parking spaces
B1	Residential - Apartments	Apartments - Mid Rise	6	dwelling units
	Coffee Shop	Fast Food w/o Drive Through	2,135	square feet
	Retail	Strip Mall[1]	3,452	square feet
C	Residential - Apartments	Apartments - Mid Rise	24	dwelling units
	Parking Garage	Enclosed Parking with Elevator	48	parking spaces
O	Onsite Surface Streets	Parking lot[1]	0.73	acres

Notes:
1. This is the best CalEEMod land-use type fit.

Table 2
Construction Equipment List[1]
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Equipment List[2]						
Phase	**Equipment**	**Quantity**	**Usage Hours per Day**	**Horsepower**	**Load Factor**	**Equipment Usage Days**
Demolition	Concrete/Industrial Saws	1	8	81	0.73	40
	Excavators	1	8	268	0.85	40
	Rubber Tired Dozers	2	8	255	0.40	40
Grading	Excavators	1	2	268	0.85	23
	Rubber Tired Dozers	1	3	255	0.40	23
	Water Truck	1	3	300	0.35	23
	Tractors/Loaders/Backhoes	1	3	265	0.70	23
	Skiploader	1	3	95	0.50	23
Building Construction	Cranes	1	2	226	0.29	8
	Forklifts	1	8	89	0.20	296
	Tractors/Loaders/Backhoes	1	7	265	0.70	31
	Skiploader	2	7	95	0.50	31
	Welders	1	8	46	0.45	12
Architectural Coating	Air Compressors	1	5	78	0.48	271
Off Site Street Improvements	Pavers	1	4.5	125	0.42	126
	Paving Equipment	2	4	130	0.36	126
	Rollers	2	4	80	0.38	126
	Skiploader	1	4	95	0.50	126

Hauling Trips						
Phase Name	**Worker Trip Number (trips/day)**	**Vendor Trip Number (trips/day)**	**Hauling Trip Number (total trips)**	**Worker Trip Length (miles/trip)**	**Vendor Trip Length (miles/trip)**	**Hauling Trip Length (miles/trip)**
Demolition	15	0	60	12.4	7.3	20
Grading	20	0	5400	12.4	7.3	20
Building Construction	324	48	1400	12.4	7.3	20
Off Site Street Improvements	15	0	35	12.4	7.3	20
Architectural Coating	65	0	50	12.4	7.3	20

Notes:

1. The construction schedule is described in the Saranap Village Mitigated Plan Alternative Overview dated May 31, 2015 provided by Hall Equities Group.
2. Construction equipment information is from a combination of CalEEMod default values, a project study of load factors, and information provided by Hall Equities Group.
3. CalEEMod defaults were used for the worker and vendor trip length values.

Abbreviations:

CalEEMod: CALifornia Emissions Estimator MODel

References:

1. CalEEMod Version 2013.2.2 Available Online at: http://www.caleemod.com
2. Saranap Village Mitigated Plan Alternative Overview (May 31, 2015)

Table 3
Summary of Greenhouse Gas Emissions - Emergency Engines
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Generators	Size (kW)	Fuel Type	Operation[1] (hrs/yr)	Maximum Fuel Flow[2] (m^3/hr)	Emission Factors[3,4] (lb/MMBtu)	Emission Rate (MT/yr)
					CO_2e	CO_2e
Site A	100	NG	50	39.9	136	4.44
Site B/B1	100	NG	50	39.9	136	4.44
Site C	80	NG	50	39.9	136	4.44
					Total	**13.3**

Notes:
1. Non-emergency operation of generators conservatively assumed to be 50 hours per year, the
2. The maximum fuel flow was determined by product specification sheets for 100 KW natural
3. AP-42 emission factors for 4-stroke natural gas-fired reciprocating engines are used (maximum of lean-burn and rich-burn), available at http://www.epa.gov/ttnchie1/ap42/ch03/final/c03s02.pdf
4. The CO_2e emission factor includes the carbon dioxide emission factor plus the methane emission factor scaled by a global warming potential of 21 from Table A-1 in 40 CFR Part 98 (available at http://www.law.cornell.edu/cfr/text/40/part-98/subpart-A/appendix-TableA-1) in accordance with the CARB GHG Reporting Rule, 2012.

Abbreviations:
AP-42: Air Pollution Emission Factors
CARB: California Air Resources Board
CO_2e: carbon dioxide equivalents
g: gram
GHG: greenhouse gas
HP: horsepower
hr: hour
kW: kilowatt
MT: metric ton
NG: natural gas
USEPA: U. S. Environmental Protection Agency
yr: year

References:
AP-42, 1995. Compilation of Air Pollutant Emission Factors, Fifth edition. http://www.epa.gov/ttnchie1/ap42/
USEPA. 1997. *Conversion Factors for Hydrocarbon Emission Components.* November. http://www.epa.gov/oms/models/nonrdmdl/nr-002.pdf. Accessed November, 2015.
CARB. 2012. Regulation for the Mandatory Reporting of Greenhouse Gas Emissions.

Table 4
Proposed Project Daily Trip Generation
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Land Use	Land Use	Average Daily Trip Rate[1]	Average Trip Length (miles)[2]	Daily VMT[3]	Annual VMT	% of Total VMT
Apartments Mid Rise	Residential	819	6.13	5,023	1,833,331	41%
Fast Food Restaurant w/o Drive Thru	Coffee Shop	1,527	1.50	2,292	836,656	19%
High Turnover (Sit Down Restaurant)	Restaurant	575	1.87	1,075	392,373	9%
Strip Mall	Retail Shops	1,203	2.19	2,639	963,295	22%
Supermarket	Grocery Store	734	1.63	1,197	436,825	10%
Total		**4,858**		**12,226**	**4,462,479**	100%

Notes:

[1] Average Daily Trip Rate Includes Pass-By Trips as published by Omni Means, Table 2a. July 1, 2015. Ramboll Environ included 0.1 mile trip lengths for Pass-By trips per CalEEMod guidance.

[2] Average trip length is a weighted average determined by land use type, and trip type.

Average Primary Trip Length i =

(H-W miles x H-W Trip %) + (*H-S miles x H-S Trip %*) + (*H-O miles x H-O Trip %*)

Where

H-Wmiles = Home to Work trip length

H-Wtrip% = % of the total primary trips that are Home to Work trips

H-Smiles = Home to Shopping trip length

H-Strip% = % of the total primary trips that are Home to Shopping trips

H-Omiles = Home to Other trip length

H-Otrip% = % of the total primary trips that are Home to Other trips

i = land use type.

Average Overall Trip Length i =

(Link % primary x TripLengthAvg Primary) + (Link % Diverted x 0.25 x TripLengthAvg Primary) + (Link % Passby x 0.1mile)

Where

Link % = percentage of link types

Note: Passby trip percentages provided by Omni-Means, Traffic Impact Analysis for Saranap Village Mitigated Alternative, Table 2a. July 1, 2015.

Trip Length AvgPrimary = Average primary trip length for each trip type

i = land use type

[3] The VMT data in this table is based on the following percentage breakdown by trip type for residential and commercial land uses. Percentage of trips varies for commercial land uses by land use type.

Home -- work: Default 12.4 miles (26.1% of trips)
Home -- shop: Default 4.3 miles (29.1% of trips)
Home -- other: Default 5.4 miles (44.8% of trips)
Commercial -- customer: 1.38 miles (Average 72.7% of trips), from Economic and Planning Systems,
Commercial -- worker: Default 9.5 miles (Average 8.3% of trips)
Commercial -- non-worker: Default 7.3 miles (19% of trips)

Sources:

CalEEMod Version 2013.2.2 Appendix A Available Online at: http://www.caleemod.com
Economic and Planning Systems, Inc. March 2014.
Omni Means. Traffic Impact Analysis. Table 2a Revised. June 17, 2015.
ITE. 2008. Trip Generation 8th Edition. In September 2012, ITE published the 9th edition that updated some of the trip rates from the 8th edition. The updates are not yet incorporated into CalEEMod but the user has the ability to override the trip rate default.

Table 5
Summary of Construction Greenhouse Gas Emissions
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Year	CO_2 Emissions	CH_4 Emissions	Total CO_2e Emissions
	[MT]	[MT]	[MT]
Off-Road Construction Emissions	246	0.072	248
On-Road Construction Emissions	870	0.029	871
Total Emissions	**1,116**	**0.10**	**1,119**

Notes:
1. Off-road emissions were estimated using CalEEMod methodologies and the CalEEMod emission factors are shown in the Appendix. The load factors and equipment hours are shown in Table 2. Emissions were conservatively calculated using 2016 emission factors.
2. On-road emissions estimated using CalEEMod version 2013.2.2 and activity schedule shown in Table 2.

Abbreviations:
CO_2e: carbon dioxide equivalents
GHG: greenhouse gas
MT: metric tonnes

Sources:
CalEEMod Version 2013.2.2 Available Online at: http://www.caleemod.com

Table 6a
Summary of Operational Greenhouse Gas Emissions: All Sources
(Historical Electricity Emission Factors)
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Source[1]	Units	2018 GHG Emissions	2020 GHG Emissions	2025 GHG Emissions
Non-Stationary Source GHG Emissions				
Area[2]	[MT CO_2e/yr]	10	10	10
Energy[2,6]		615	509	509
Mobile[2,7]		1,840	1,670	1,470
Waste[2]		106	106	106
Water[2]		50	50	50
Project Total		**2,622**	**2,346**	**2,145**
Service Population[3]	--	518	518	518
Project Total	**[MT CO_2e/SP/yr]**	**5.1**	**4.5**	**4.1**
BAAQMD Threshold[4]	**[MT CO_2e/SP/yr]**	**4.6**	**4.6**	**4.6**
Exceeds Threshold?	**--**	**Yes**	**No**	**No**
Additional GHG Reductions Required	**[MT CO_2e/yr]**	**239**	**--**	**--**
Emergency Generators Emissions				
Generator Testing[5]	[MT CO_2e/yr]	13.3	13.3	13.3
BAAQMD Threshold[4]	**[MT CO_2e/yr]**	**10,000**	**10,000**	**10,000**
Exceeds Threshold?	**--**	No	No	No

Notes:

1. Total operational emissions include yearly emissions from area, energy, mobile, waste, and water sources. It is assumed that carbon sequestration associated with vegetation change will be minimal and hence not included.
2. Emissions estimated using CalEEMod version 2013.2.2.
3. Note residential service population based on the Contra Costa County General Plan Population average household size of 2.5 persons. Commercial service population is based on U.S. Energy Information Administration statistics, available at http://www.eia.gov/consumption/commercial/data/2003/pdf/b1-b46.pdf.
4. BAAQMD significance threshold outlined in the May 2011 BAAQMD CEQA Guidelines.
5. It is assumed that the project would have 3 emergency generators, which require maintenance for 50 hours/year, calculations shown in AQ Table 5.
6. Assumes increase of RPS from 19% (based on latest published RPS) to 33% in 2020 and 2025 per http://www.cpuc.ca.gov/PUC/energy/Renewables. Also includes energy demand adjustments per 2013 Title 24: http://www.energy.ca.gov/title24/. Energy emissions for 2018 based on average of 2011-2013 PG&E electricity emission factors from: http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/.

7. Incorporates GHG emission reductions from Advanced Clean Cars, per Table 2 of http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf, for years 2020 and 2025.

Table 6a
Summary of Operational Greenhouse Gas Emissions: All Sources
(Historical Electricity Emission Factors)
Saranap Village Mitigated Plan Alternative
Walnut Creek, California
(continued)

Abbreviations:
ARB: Air Resources Board
AQ: Air Quality
BAAQMD: Bay Area Air Quality Management District
CalEEMod: California Emissions Estimator Model
CEQA: California Environmental Quality Act
CO_2e: carbon dioxide equivalents
GHG: greenhouse gases
hr: hour
MT: metric tonnes
PG&E: Pacific Gas and Electric
RPS: Renewables Portfolio Standard
SP: Service Population
yr: year

Sources:
CARB. 2013. Documentation of California's 2000-2010 GHG Inventory — Index. Available online at: http://www.arb.ca.gov/cc/inventory/doc/doc_index.php
CARB. Advanced Clean Cars Summary. Available online at: http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf
BAAQMD. 2011. CEQA Air Quality Guidelines. May.
California Emissions Estimator Model (CalEEMod) Version 2013.2.2. Available online at: http://caleemod.com/
California Renewables Portfolio Standard (RPS). Available online at: http://www.cpuc.ca.gov/PUC/energy/Renewables
PG&E Greenhouse Gas Emission Factors. Available online at: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf
California Energy Commission: Building Energy Efficiency Program - Title 24. Available online at: http://www.energy.ca.gov/title24/

Table 6b
Summary of Operational Greenhouse Gas Emissions: All Sources
(Projected Electricity Emission Factors)
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Source[1]	Units	2018 GHG Emissions	2019 GHG Emissions	2020 GHG Emissions
Non-Stationary Source GHG Emissions				
Area[2]	[MT CO_2e/yr]	10	10	10
Energy[2,6]		516	494	476
Mobile[2,7]		1,840	1,784	1,670
Waste[2]		106	106	106
Water[2]		45	44	43
Project Total		**2,517**	**2,438**	**2,305**
Service Population[3]	--	518	518	518
Project Total	**[MT CO_2e/SP/yr]**	**4.9**	**4.7**	**4.5**
BAAQMD Threshold[4]	**[MT CO_2e/SP/yr]**	**4.6**	**4.6**	**4.6**
Exceeds Threshold?	**--**	**Yes**	**Yes**	**No**
Additional GHG Reductions Required	**[MT CO_2e/yr]**	**135**	**55**	**--**
Emergency Generators Emissions				
Generator Testing[5]	[MT CO_2e/yr]	13.3	13.3	13.3
BAAQMD Threshold[4]	**[MT CO_2e/yr]**	**10,000**	**10,000**	**10,000**
Exceeds Threshold?	**--**	No	No	No

Notes:
1. Total operational emissions include yearly emissions from area, energy, mobile, waste, and water sources. It is assumed that carbon sequestration associated with vegetation change will be
2. Emissions estimated using CalEEMod version 2013.2.2.
3. Note residential service population based on the Contra Costa County General Plan Population average household size of 2.5 persons. Commercial service population is based on U.S. Energy Information Administration statistics, available at http://www.eia.gov/consumption/commercial/data/2003/pdf/b1-b46.pdf.
4. BAAQMD significance threshold outlined in the May 2011 BAAQMD CEQA Guidelines.
5. It is assumed that the project would have 3 emergency generators, which require maintenance for 50 hours/year, calculations shown in AQ Table 5.
6. Includes energy demand adjustments per 2013 Title 24: http://www.energy.ca.gov/title24/. Energy emissions for each year based on corresponding PG&E projected electricity emission factors from PG&E, which exceed current RPS: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

7. Incorporates GHG emission reductions from Advanced Clean Cars for mobile emissions, per Table 2 of http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf, for years 2020.

Table 6b
Summary of Operational Greenhouse Gas Emissions: All Sources
(Projected Electricity Emission Factors)
Saranap Village Mitigated Plan Alternative
Walnut Creek, California
(continued)

Abbreviations:

ARB: Air Resources Board
AQ: Air Quality
BAAQMD: Bay Area Air Quality Management District
CalEEMod: California Emissions Estimator Model
CEQA: California Environmental Quality Act
CO_2e: carbon dioxide equivalents
GHG: greenhouse gases
hr: hour
MT: metric tonnes
PG&E: Pacific Gas and Electric
SP: Service Population
yr: year

Sources:

ARB. 2013. Documentation of California's 2000-2010 GHG Inventory — Index. Available online at: http://www.arb.ca.gov/cc/inventory/doc/doc_index.php
ARB. Advanced Clean Cars Summary. Available online at: http://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf
BAAQMD. 2011. CEQA Air Quality Guidelines. May.
California Emissions Estimator Model (CalEEMod) Version 2013.2.2. Available online at: http://caleemod.com/

PG&E Greenhouse Gas Emission Factors. Available online at: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

California Energy Commission: Building Energy Efficiency Program - Title 24. Available online at: http://www.energy.ca.gov/title24/

Table 7
Potential Mitigation Measures
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Mitigation Category	Potential Mitigation Measure
Neighborhood/Site Enhancements	Provide Pedestrian Network Improvements
	Provide Traffic Calming Measures
	Implement a Neighborhood Electric Vehicle Network
	Incorporate Bike Lane Street Design (on-site)
	Provide Bike Parking in Non-Residential Projects
	Provide Electric Vehicle Parking
Parking Policy/Pricing	Limit Parking Supply
	Unbundle Parking Costs from Property Cost
	Implement Market Price Public Parking (On-Street)
Commute Trip Reduction Programs	Implement Commute Trip Reduction Program - Voluntary
	Implement Commute Trip Reduction Program – Required Implementation/Monitoring
	Provide Ride-Sharing Programs
	Implement Subsidized or Discounted Transit Program
	Provide End of Trip Facilities
	Encourage Telecommuting and Alternative Work Schedules
	Implement Commute Trip Reduction Marketing
	Implement Preferential Parking Permit Program
	Implement Car-Sharing Program
	Provide Employer-Sponsored Vanpool/Shuttle
	Implement Bike-Sharing Programs
	Price Workplace Parking
	Implement Employee Parking "Cash-Out"
Transit System Improvements	Provide a Bus Rapid Transit System
	Implement Transit Access Improvements
	Expand Transit Network
	Increase Transit Service Frequency/Speed
	Provide Local Shuttles

Reference:

CAPCOA. Quantifying Greenhouse Gas Mitigation Measures. August 2010. (http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf)

Table 8
Proposed PV System Production (2018)
Saranap Village Mitigated Plan Alternative
Walnut Creek, California

Operational Year	Required Annual PV GHG Reduction[1] (MT CO_2e/yr)	Required Annual On-Site Renewable Energy Generation[2] (MWh/yr)	Annual Project Electricity Consumption (MWh/yr)	Daily Hours of Operation[3] (hr/day)	Rated Total PV System Production[4] (MW)	Required Solar Area[5] (acres)
2018	135	904	2,328	4.6	0.54	1.4

Notes:

[1] Required annual GHG reductions based on Tables 6a and 6b. By 2020, no additional GHG reductions are required.

[2] Required annual on-site renewable energy generation for 2018 calculated based on required annual PV GHG reduction and 2018 projected electricity emission factors from PG&E, which exceed current RPS: http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

[3] Daily hours of operation were conservatively assumed to be 4.6 hours, which accounts for the efficiency of a solar system with a 30 degree roof slope and a south roof direction for the City of Walnut Creek.

4 Calculated based on required annual renewable energy generation and daily hours of operation.

5 Assuming 9 watts per square foot of solar panel area as per http://www.solar-estimate.org/?page=solar-calculations (accessed June 2015).

APPENDIX A: CALEEMOD® CONSTRUCTION AND OPERATIONAL OUTPUT FILES

Saranap Construction - non Offroad Equipment

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Defined Unit	0.00	22,261.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Enclosed Parking Structure	471.00	Space	4.24	188,400.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CalEEMod Run for Construction Emissions from non-offroad-equipment. Emissions from Offroad equipment estimated outside of CalEEMod

Land Use - Pseudo land use for construction emissions

Construction Phase - Start and End dates not accurate. Total Days is accurate

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - pseudo equipment

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Consistent with Client provided data

Demolition -

Grading -

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	271.00
tblConstructionPhase	NumDays	300.00	296.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	30.00	23.00
tblConstructionPhase	NumDays	20.00	126.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	5/6/2017	11/11/2016
tblConstructionPhase	PhaseEndDate	11/24/2016	10/22/2016
tblConstructionPhase	PhaseEndDate	3/29/2016	2/2/2016
tblConstructionPhase	PhaseEndDate	4/17/2017	6/24/2016
tblConstructionPhase	PhaseStartDate	6/25/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	2/3/2016	1/1/2016

tblConstructionPhase	PhaseStartDate	2/26/2016	1/1/2016
tblConstructionPhase	PhaseStartDate	10/23/2016	1/1/2016
tblGrading	AcresOfGrading	57.50	46.00
tblGrading	MaterialExported	0.00	2,650.00
tblLandUse	LandUseSquareFeet	0.00	22,261.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	331.00	5,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	35.00
tblTripsAndVMT	HaulingTripNumber	223.00	60.00
tblTripsAndVMT	VendorTripNumber	61.00	48.00
tblTripsAndVMT	WorkerTripNumber	48.00	65.00
tblTripsAndVMT	WorkerTripNumber	241.00	324.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0491	9.7992	10.2316	0.0179	0.7525	0.5127	1.2652	0.2146	0.4800	0.6946	0.0000	1,536.4410	1,536.4410	0.2028	0.0000	1,540.6994
Total	**4.0491**	**9.7992**	**10.2316**	**0.0179**	**0.7525**	**0.5127**	**1.2652**	**0.2146**	**0.4800**	**0.6946**	**0.0000**	**1,536.4410**	**1,536.4410**	**0.2028**	**0.0000**	**1,540.6994**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	4.0491	9.7992	10.2316	0.0179	0.7525	0.5127	1.2652	0.2146	0.4800	0.6946	0.0000	1,536.4402	1,536.4402	0.2028	0.0000	1,540.6986
Total	**4.0491**	**9.7992**	**10.2316**	**0.0179**	**0.7525**	**0.5127**	**1.2652**	**0.2146**	**0.4800**	**0.6946**	**0.0000**	**1,536.4402**	**1,536.4402**	**0.2028**	**0.0000**	**1,540.6986**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Energy	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	666.0307	666.0307	0.0277	7.0600e-003	668.8017
Mobile	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Waste						0.0000	0.0000		0.0000	0.0000	18.3017	0.0000	18.3017	1.0816	0.0000	41.0152
Water						0.0000	0.0000		0.0000	0.0000	4.0514	28.2991	32.3504	0.4174	0.0101	44.2437
Total	**3.2200**	**1.8699**	**10.1452**	**0.0160**	**1.0742**	**0.0674**	**1.1416**	**0.2877**	**0.0656**	**0.3533**	**25.5611**	**1,907.8112**	**1,933.3723**	**1.5904**	**0.0174**	**1,972.1709**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Energy	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	666.0307	666.0307	0.0277	7.0600e-003	668.8017
Mobile	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Waste						0.0000	0.0000		0.0000	0.0000	18.3017	0.0000	18.3017	1.0816	0.0000	41.0152
Water						0.0000	0.0000		0.0000	0.0000	4.0514	28.2991	32.3504	0.4173	0.0101	44.2373
Total	**3.2200**	**1.8699**	**10.1452**	**0.0160**	**1.0742**	**0.0674**	**1.1416**	**0.2877**	**0.0656**	**0.3533**	**25.5611**	**1,907.8112**	**1,933.3723**	**1.5903**	**0.0174**	**1,972.1644**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2016	2/25/2016	5	40	
2	Grading	Grading	1/1/2016	2/2/2016	5	23	
3	Building Construction	Building Construction	1/1/2016	10/22/2016	7	296	
4	Paving	Paving	1/1/2016	6/24/2016	5	126	
5	Architectural Coating	Architectural Coating	1/1/2016	11/11/2016	6	271	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 46

Acres of Paving: 0

Residential Indoor: 491,854; Residential Outdoor: 163,951; Non-Residential Indoor: 317,450; Non-Residential Outdoor: 105,817 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	226	0.29
Demolition	Excavators	3	8.00	162	0.38
Grading	Excavators	2	8.00	162	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	174	0.41
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	65.00	0.00	50.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	324.00	48.00	1,400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	35.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	60.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.9131	0.7006	8.0000e-004		0.0458	0.0458		0.0427	0.0427	0.0000	74.1947	74.1947	0.0202	0.0000	74.6184
Total	**0.0858**	**0.9131**	**0.7006**	**8.0000e-004**	**0.0241**	**0.0458**	**0.0699**	**3.6500e-003**	**0.0427**	**0.0464**	**0.0000**	**74.1947**	**74.1947**	**0.0202**	**0.0000**	**74.6184**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	8.9900e-003	7.5000e-003	2.0000e-005	5.1000e-004	1.2000e-004	6.2000e-004	1.4000e-004	1.1000e-004	2.5000e-004	0.0000	2.0565	2.0565	2.0000e-005	0.0000	2.0568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.6600e-003	0.0162	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.4666	2.4666	1.4000e-004	0.0000	2.4695
Total	**1.8200e-003**	**0.0107**	**0.0237**	**5.0000e-005**	**3.2400e-003**	**1.4000e-004**	**3.3700e-003**	**8.7000e-004**	**1.3000e-004**	**1.0000e-003**	**0.0000**	**4.5231**	**4.5231**	**1.6000e-004**	**0.0000**	**4.5263**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0858	0.9131	0.7006	8.0000e-004		0.0458	0.0458		0.0427	0.0427	0.0000	74.1946	74.1946	0.0202	0.0000	74.6184
Total	**0.0858**	**0.9131**	**0.7006**	**8.0000e-004**	**0.0241**	**0.0458**	**0.0699**	**3.6500e-003**	**0.0427**	**0.0464**	**0.0000**	**74.1946**	**74.1946**	**0.0202**	**0.0000**	**74.6184**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.9000e-004	8.9900e-003	7.5000e-003	2.0000e-005	5.1000e-004	1.2000e-004	6.2000e-004	1.4000e-004	1.1000e-004	2.5000e-004	0.0000	2.0565	2.0565	2.0000e-005	0.0000	2.0568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1300e-003	1.6600e-003	0.0162	3.0000e-005	2.7300e-003	2.0000e-005	2.7500e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.4666	2.4666	1.4000e-004	0.0000	2.4695
Total	**1.8200e-003**	**0.0107**	**0.0237**	**5.0000e-005**	**3.2400e-003**	**1.4000e-004**	**3.3700e-003**	**8.7000e-004**	**1.3000e-004**	**1.0000e-003**	**0.0000**	**4.5231**	**4.5231**	**1.6000e-004**	**0.0000**	**4.5263**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0938	0.0000	0.0938	0.0407	0.0000	0.0407	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0745	0.8604	0.5651	7.1000e-004		0.0412	0.0412		0.0379	0.0379	0.0000	66.9251	66.9251	0.0202	0.0000	67.3490
Total	**0.0745**	**0.8604**	**0.5651**	**7.1000e-004**	**0.0938**	**0.0412**	**0.1350**	**0.0407**	**0.0379**	**0.0786**	**0.0000**	**66.9251**	**66.9251**	**0.0202**	**0.0000**	**67.3490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0625	0.8095	0.6746	2.0300e-003	0.0456	0.0105	0.0561	0.0125	9.6600e-003	0.0222	0.0000	185.0831	185.0831	1.3700e-003	0.0000	185.1119
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.2700e-003	0.0124	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8911	1.8911	1.0000e-004	0.0000	1.8933
Total	**0.0634**	**0.8108**	**0.6870**	**2.0500e-003**	**0.0477**	**0.0105**	**0.0582**	**0.0131**	**9.6800e-003**	**0.0228**	**0.0000**	**186.9742**	**186.9742**	**1.4700e-003**	**0.0000**	**187.0052**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0938	0.0000	0.0938	0.0407	0.0000	0.0407	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0745	0.8604	0.5651	7.1000e-004		0.0412	0.0412		0.0379	0.0379	0.0000	66.9250	66.9250	0.0202	0.0000	67.3489
Total	**0.0745**	**0.8604**	**0.5651**	**7.1000e-004**	**0.0938**	**0.0412**	**0.1350**	**0.0407**	**0.0379**	**0.0786**	**0.0000**	**66.9250**	**66.9250**	**0.0202**	**0.0000**	**67.3489**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0625	0.8095	0.6746	2.0300e-003	0.0456	0.0105	0.0561	0.0125	9.6600e-003	0.0222	0.0000	185.0831	185.0831	1.3700e-003	0.0000	185.1119
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	1.2700e-003	0.0124	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	2.0000e-005	5.7000e-004	0.0000	1.8911	1.8911	1.0000e-004	0.0000	1.8933
Total	**0.0634**	**0.8108**	**0.6870**	**2.0500e-003**	**0.0477**	**0.0105**	**0.0582**	**0.0131**	**9.6800e-003**	**0.0228**	**0.0000**	**186.9742**	**186.9742**	**1.4700e-003**	**0.0000**	**187.0052**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5041	4.2189	2.7390	3.9700e-003		0.2912	0.2912		0.2736	0.2736	0.0000	358.3873	358.3873	0.0889	0.0000	360.2539
Total	**0.5041**	**4.2189**	**2.7390**	**3.9700e-003**		**0.2912**	**0.2912**		**0.2736**	**0.2736**	**0.0000**	**358.3873**	**358.3873**	**0.0889**	**0.0000**	**360.2539**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0162	0.2099	0.1749	5.3000e-004	0.0118	2.7200e-003	0.0146	3.2500e-003	2.5000e-003	5.7500e-003	0.0000	47.9845	47.9845	3.6000e-004	0.0000	47.9920
Vendor	0.0891	0.7115	1.0224	1.6900e-003	0.0458	0.0105	0.0563	0.0131	9.6600e-003	0.0228	0.0000	153.1045	153.1045	1.2200e-003	0.0000	153.1302
Worker	0.1807	0.2655	2.5922	5.1800e-003	0.4366	3.5600e-003	0.4401	0.1161	3.2600e-003	0.1194	0.0000	394.2649	394.2649	0.0218	0.0000	394.7236
Total	**0.2859**	**1.1868**	**3.7896**	**7.4000e-003**	**0.4942**	**0.0168**	**0.5110**	**0.1325**	**0.0154**	**0.1479**	**0.0000**	**595.3539**	**595.3539**	**0.0234**	**0.0000**	**595.8458**

3.4 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.5041	4.2189	2.7390	3.9700e-003		0.2912	0.2912		0.2736	0.2736	0.0000	358.3869	358.3869	0.0889	0.0000	360.2535
Total	**0.5041**	**4.2189**	**2.7390**	**3.9700e-003**		**0.2912**	**0.2912**		**0.2736**	**0.2736**	**0.0000**	**358.3869**	**358.3869**	**0.0889**	**0.0000**	**360.2535**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0162	0.2099	0.1749	5.3000e-004	0.0118	2.7200e-003	0.0146	3.2500e-003	2.5000e-003	5.7500e-003	0.0000	47.9845	47.9845	3.6000e-004	0.0000	47.9920
Vendor	0.0891	0.7115	1.0224	1.6900e-003	0.0458	0.0105	0.0563	0.0131	9.6600e-003	0.0228	0.0000	153.1045	153.1045	1.2200e-003	0.0000	153.1302
Worker	0.1807	0.2655	2.5922	5.1800e-003	0.4366	3.5600e-003	0.4401	0.1161	3.2600e-003	0.1194	0.0000	394.2649	394.2649	0.0218	0.0000	394.7236
Total	**0.2859**	**1.1868**	**3.7896**	**7.4000e-003**	**0.4942**	**0.0168**	**0.5110**	**0.1325**	**0.0154**	**0.1479**	**0.0000**	**595.3539**	**595.3539**	**0.0234**	**0.0000**	**595.8458**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1317	1.4103	0.9335	1.4000e-003		0.0794	0.0794		0.0731	0.0731	0.0000	132.3870	132.3870	0.0399	0.0000	133.2256
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1326**	**1.4103**	**0.9335**	**1.4000e-003**		**0.0794**	**0.0794**		**0.0731**	**0.0731**	**0.0000**	**132.3870**	**132.3870**	**0.0399**	**0.0000**	**133.2256**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	5.2500e-003	4.3700e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1996	1.1996	1.0000e-005	0.0000	1.1998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	5.2300e-003	0.0511	1.0000e-004	8.6000e-003	7.0000e-005	8.6700e-003	2.2900e-003	6.0000e-005	2.3500e-003	0.0000	7.7699	7.7699	4.3000e-004	0.0000	7.7789
Total	**3.9700e-003**	**0.0105**	**0.0555**	**1.1000e-004**	**8.9000e-003**	**1.4000e-004**	**9.0300e-003**	**2.3700e-003**	**1.2000e-004**	**2.4900e-003**	**0.0000**	**8.9695**	**8.9695**	**4.4000e-004**	**0.0000**	**8.9787**

3.5 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1317	1.4103	0.9335	1.4000e-003		0.0794	0.0794		0.0731	0.0731	0.0000	132.3869	132.3869	0.0399	0.0000	133.2255
Paving	9.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1326**	**1.4103**	**0.9335**	**1.4000e-003**		**0.0794**	**0.0794**		**0.0731**	**0.0731**	**0.0000**	**132.3869**	**132.3869**	**0.0399**	**0.0000**	**133.2255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	5.2500e-003	4.3700e-003	1.0000e-005	3.0000e-004	7.0000e-005	3.6000e-004	8.0000e-005	6.0000e-005	1.4000e-004	0.0000	1.1996	1.1996	1.0000e-005	0.0000	1.1998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5600e-003	5.2300e-003	0.0511	1.0000e-004	8.6000e-003	7.0000e-005	8.6700e-003	2.2900e-003	6.0000e-005	2.3500e-003	0.0000	7.7699	7.7699	4.3000e-004	0.0000	7.7789
Total	**3.9700e-003**	**0.0105**	**0.0555**	**1.1000e-004**	**8.9000e-003**	**1.4000e-004**	**9.0300e-003**	**2.3700e-003**	**1.2000e-004**	**2.4900e-003**	**0.0000**	**8.9695**	**8.9695**	**4.4000e-004**	**0.0000**	**8.9787**

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0499	0.3214	0.2553	4.0000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	34.5966	34.5966	4.0800e-003	0.0000	34.6822
Total	**2.8633**	**0.3214**	**0.2553**	**4.0000e-004**		**0.0266**	**0.0266**		**0.0266**	**0.0266**	**0.0000**	**34.5966**	**34.5966**	**4.0800e-003**	**0.0000**	**34.6822**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	7.5000e-003	6.2500e-003	2.0000e-005	4.2000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7137	1.7137	1.0000e-005	0.0000	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0488	0.4761	9.5000e-004	0.0802	6.5000e-004	0.0808	0.0213	6.0000e-004	0.0219	0.0000	72.4159	72.4159	4.0100e-003	0.0000	72.5002
Total	**0.0338**	**0.0563**	**0.4824**	**9.7000e-004**	**0.0806**	**7.5000e-004**	**0.0814**	**0.0215**	**6.9000e-004**	**0.0221**	**0.0000**	**74.1297**	**74.1297**	**4.0200e-003**	**0.0000**	**74.2142**

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0499	0.3214	0.2553	4.0000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	34.5966	34.5966	4.0800e-003	0.0000	34.6822
Total	**2.8633**	**0.3214**	**0.2553**	**4.0000e-004**		**0.0266**	**0.0266**		**0.0266**	**0.0266**	**0.0000**	**34.5966**	**34.5966**	**4.0800e-003**	**0.0000**	**34.6822**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.8000e-004	7.5000e-003	6.2500e-003	2.0000e-005	4.2000e-004	1.0000e-004	5.2000e-004	1.2000e-004	9.0000e-005	2.1000e-004	0.0000	1.7137	1.7137	1.0000e-005	0.0000	1.7140
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0488	0.4761	9.5000e-004	0.0802	6.5000e-004	0.0808	0.0213	6.0000e-004	0.0219	0.0000	72.4159	72.4159	4.0100e-003	0.0000	72.5002
Total	**0.0338**	**0.0563**	**0.4824**	**9.7000e-004**	**0.0806**	**7.5000e-004**	**0.0814**	**0.0215**	**6.9000e-004**	**0.0221**	**0.0000**	**74.1297**	**74.1297**	**4.0200e-003**	**0.0000**	**74.2142**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731
Unmitigated	0.8324	1.7701	8.4128	0.0152	1.0742	0.0213	1.0955	0.2877	0.0195	0.3072	0.0000	1,205.9118	1,205.9118	0.0553	0.0000	1,207.0731

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,291.64	1,403.36	1189.72	2,886,539	2,886,539
User Defined Commercial	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	1,291.64	1,403.36	1,189.72	2,886,539	2,886,539

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
User Defined Commercial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527627	0.065080	0.176461	0.145848	0.036424	0.004888	0.009671	0.020781	0.001221	0.001487	0.006359	0.002101	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.4274	573.4274	0.0259	5.3600e-003	575.6349
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	573.4274	573.4274	0.0259	5.3600e-003	575.6349
NaturalGas Mitigated	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
NaturalGas Unmitigated	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.73532e+006	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**9.3600e-003**	**0.0800**	**0.0340**	**5.1000e-004**		**6.4600e-003**	**6.4600e-003**		**6.4600e-003**	**6.4600e-003**	**0.0000**	**92.6033**	**92.6033**	**1.7700e-003**	**1.7000e-003**	**93.1668**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.73532e+006	9.3600e-003	0.0800	0.0340	5.1000e-004		6.4600e-003	6.4600e-003		6.4600e-003	6.4600e-003	0.0000	92.6033	92.6033	1.7700e-003	1.7000e-003	93.1668
Total		**9.3600e-003**	**0.0800**	**0.0340**	**5.1000e-004**		**6.4600e-003**	**6.4600e-003**		**6.4600e-003**	**6.4600e-003**	**0.0000**	**92.6033**	**92.6033**	**1.7700e-003**	**1.7000e-003**	**93.1668**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	708609	206.1424	9.3200e-003	1.9300e-003	206.9360
Enclosed Parking Structure	1.23402e+006	358.9906	0.0162	3.3600e-003	360.3726
Parking Lot	28512	8.2945	3.8000e-004	8.0000e-005	8.3264
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**573.4274**	**0.0259**	**5.3700e-003**	**575.6349**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	708609	206.1424	9.3200e-003	1.9300e-003	206.9360
Enclosed Parking Structure	1.23402e+006	358.9906	0.0162	3.3600e-003	360.3726
Parking Lot	28512	8.2945	3.8000e-004	8.0000e-005	8.3264
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**573.4274**	**0.0259**	**5.3700e-003**	**575.6349**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372
Unmitigated	2.3782	0.0199	1.6983	2.6000e-004		0.0396	0.0396		0.0396	0.0396	3.2080	7.5697	10.7777	8.4100e-003	2.7000e-004	11.0372

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2813					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1520	2.5800e-003	0.2175	1.9000e-004		0.0317	0.0317		0.0317	0.0317	3.2080	5.1825	8.3906	5.9600e-003	2.7000e-004	8.5986
Landscaping	0.0470	0.0173	1.4808	8.0000e-005		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	2.3871	2.3871	2.4500e-003	0.0000	2.4386
Total	**2.3782**	**0.0199**	**1.6983**	**2.7000e-004**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**3.2080**	**7.5697**	**10.7777**	**8.4100e-003**	**2.7000e-004**	**11.0372**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2813					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1520	2.5800e-003	0.2175	1.9000e-004		0.0317	0.0317		0.0317	0.0317	3.2080	5.1825	8.3906	5.9600e-003	2.7000e-004	8.5986
Landscaping	0.0470	0.0173	1.4808	8.0000e-005		7.9800e-003	7.9800e-003		7.9800e-003	7.9800e-003	0.0000	2.3871	2.3871	2.4500e-003	0.0000	2.4386
Total	**2.3782**	**0.0199**	**1.6983**	**2.7000e-004**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**3.2080**	**7.5697**	**10.7777**	**8.4100e-003**	**2.7000e-004**	**11.0372**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.3504	0.4173	0.0101	44.2373
Unmitigated	32.3504	0.4174	0.0101	44.2437

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.7702 / 8.05077	32.3504	0.4174	0.0101	44.2437
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**32.3504**	**0.4174**	**0.0101**	**44.2437**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	12.7702 / 8.05077	32.3504	0.4173	0.0101	44.2373
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**32.3504**	**0.4173**	**0.0101**	**44.2373**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.3017	1.0816	0.0000	41.0152
Unmitigated	18.3017	1.0816	0.0000	41.0152

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**18.3017**	**1.0816**	**0.0000**	**41.0152**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
Total		**18.3017**	**1.0816**	**0.0000**	**41.0152**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Saranap Village - Mitigated Plan - Operational

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	315.00	Space	2.84	117,287.00	0
Enclosed Parking Structure	108.00	Space	0.97	43,200.00	0
Enclosed Parking Structure	48.00	Space	0.43	19,200.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0
Fast Food Restaurant w/o Drive Thru	2.13	1000sqft	0.05	2,135.00	0
High Turnover (Sit Down Restaurant)	4.81	1000sqft	0.11	4,813.00	0
Recreational Swimming Pool	0.74	1000sqft	0.02	737.00	0
Recreational Swimming Pool	0.94	1000sqft	0.02	936.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Strip Mall	1.75	1000sqft	0.04	1,750.00	0
Strip Mall	2.48	1000sqft	0.06	2,475.00	0
Strip Mall	3.45	1000sqft	0.08	3,452.00	0
Supermarket	7.64	1000sqft	0.18	7,636.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	422.38	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Climate Zone for Zip Code 94595 (found on Google Maps) using Existing Land Uses map. PG&E assumed for this area. CO2 Intensity Factor assumes 20% Renewable Energy consistent with CA Renewable Portfolio Standard. The service population will be updated based on project-specific metrics in the Greenhouse Gas Technical Report.

Land Use - Consistent with emailed information from client and Project Description

Construction Phase - Construction is modeled in a separate CalEEMod

Off-road Equipment -

Off-road Equipment - Construction modeled separately in CalEEMod

Trips and VMT - Construction modeled separately

Demolition -

Grading - Consistent with client-provided data

Architectural Coating -

Vehicle Trips - Trip rates and pass-by trip percentages based on traffic data from OmniMeans

Energy Use - Default Title 24 energy use adjusted to account for 2013 Title 24 standards

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	306890	488820
tblAreaCoating	Area_Residential_Exterior	163951	158625
tblAreaCoating	Area_Residential_Interior	491854	475875
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	312.05	239.34
tblEnergyUse	T24E	3.92	3.07
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	2.74	2.14
tblEnergyUse	T24E	3.32	2.60
tblEnergyUse	T24NG	7,191.67	6,918.39
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	41.99	34.94

tblEnergyUse	T24NG	4.10	3.41
tblEnergyUse	T24NG	25.82	21.48
tblFireplaces	NumberGas	107.80	135.24
tblFireplaces	NumberWood	27.44	0.00
tblLandUse	LandUseSquareFeet	126,000.00	117,287.00
tblLandUse	LandUseSquareFeet	2,130.00	2,135.00
tblLandUse	LandUseSquareFeet	4,810.00	4,813.00
tblLandUse	LandUseSquareFeet	740.00	737.00
tblLandUse	LandUseSquareFeet	940.00	936.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblLandUse	LandUseSquareFeet	2,480.00	2,475.00
tblLandUse	LandUseSquareFeet	3,450.00	3,452.00
tblLandUse	LandUseSquareFeet	7,640.00	7,636.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	422.38
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	DV_TP	37.00	34.70
tblVehicleTrips	DV_TP	20.00	27.50
tblVehicleTrips	DV_TP	40.00	41.20
tblVehicleTrips	DV_TP	30.00	38.40
tblVehicleTrips	PB_TP	12.00	17.50

tblVehicleTrips	PB_TP	43.00	21.50
tblVehicleTrips	PB_TP	15.00	12.50
tblVehicleTrips	PB_TP	36.00	18.00
tblVehicleTrips	PR_TP	51.00	47.80
tblVehicleTrips	PR_TP	37.00	51.00
tblVehicleTrips	PR_TP	45.00	46.30
tblVehicleTrips	PR_TP	34.00	43.60
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	696.00	715.22
tblVehicleTrips	ST_TR	158.37	119.47
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	42.04	156.70
tblVehicleTrips	ST_TR	177.59	96.12
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	SU_TR	500.00	715.22
tblVehicleTrips	SU_TR	131.84	119.47
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	20.43	156.70
tblVehicleTrips	SU_TR	166.44	96.12
tblVehicleTrips	WD_TR	6.59	4.18
tblVehicleTrips	WD_TR	716.00	715.22
tblVehicleTrips	WD_TR	127.15	119.47
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	44.32	156.70
tblVehicleTrips	WD_TR	102.24	96.12
tblWater	IndoorWaterUseRate	12,770,189.02	21,462,000.00
tblWater	IndoorWaterUseRate	646,526.81	0.00
tblWater	IndoorWaterUseRate	1,459,997.16	0.00

tblWater	IndoorWaterUseRate	99,360.48	0.00
tblWater	IndoorWaterUseRate	568,876.96	406,245.00
tblWater	IndoorWaterUseRate	941,769.16	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	429,699.00
tblWater	OutdoorWaterUseRate	41,267.67	0.00
tblWater	OutdoorWaterUseRate	93,191.31	0.00
tblWater	OutdoorWaterUseRate	60,898.36	0.00
tblWater	OutdoorWaterUseRate	348,666.53	0.00
tblWater	OutdoorWaterUseRate	29,126.88	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	611.8097	611.8097	0.0338	9.3800e-003	615.4258
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	22.9586	29.8964	0.7142	0.0172	50.2106
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,482.2451**	**2,537.6657**	**3.6335**	**0.0267**	**2,622.2290**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	611.8097	611.8097	0.0338	9.3800e-003	615.4258
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	22.9586	29.8964	0.7140	0.0171	50.1996
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,482.2451**	**2,537.6657**	**3.6334**	**0.0266**	**2,622.2179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.00	81	0.73
Demolition	Excavators	3	0.00	162	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Unmitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	819.28	819.28	819.28	1,828,933	1,828,933
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,523.42	1,523.42	1523.42	832,270	832,270
High Turnover (Sit Down Restaurant)	574.65	574.65	574.65	391,280	391,280
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Strip Mall	274.23	274.23	274.23	218,915	218,915
Strip Mall	388.62	388.62	388.62	310,233	310,233
Strip Mall	540.62	540.62	540.62	431,574	431,574
Supermarket	734.36	734.36	734.36	436,068	436,068
Total	4,855.16	4,855.16	4,855.16	4,449,273	4,449,273

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	1.38	7.30	1.50	79.50	19.00	47.8	34.7	17.5
High Turnover (Sit Down	9.50	1.38	7.30	8.50	72.50	19.00	51	27.5	21.5
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Supermarket	9.50	1.38	7.30	6.50	74.50	19.00	43.6	38.4	18

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527213	0.065297	0.176718	0.144995	0.036242	0.004841	0.009763	0.021699	0.001225	0.001482	0.006415	0.002059	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
NaturalGas Unmitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.0362	446.0362	0.0306	6.3400e-003	448.6435
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	446.0362	446.0362	0.0306	6.3400e-003	448.6435

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	133.0308	9.1300e-003	1.8900e-003	133.8084
Enclosed Parking Structure	109440	20.9674	1.4400e-003	3.0000e-004	21.0900
Enclosed Parking Structure	246240	47.1767	3.2400e-003	6.7000e-004	47.4525
Enclosed Parking Structure	668536	128.0837	8.7900e-003	1.8200e-003	128.8324
Fast Food Restaurant w/o Drive Thru	63046.6	12.0790	8.3000e-004	1.7000e-004	12.1496
High Turnover (Sit Down Restaurant)	142128	27.2301	1.8700e-003	3.9000e-004	27.3892
Parking Lot	28512	5.4626	3.8000e-004	8.0000e-005	5.4945
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	3.6914	2.5000e-004	5.0000e-005	3.7130
Strip Mall	27249.8	5.2207	3.6000e-004	7.0000e-005	5.2513
Strip Mall	38006.5	7.2816	5.0000e-004	1.0000e-004	7.3242
Supermarket	291313	55.8123	3.8300e-003	7.9000e-004	56.1385
Total		**446.0362**	**0.0306**	**6.3300e-003**	**448.6435**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	133.0308	9.1300e-003	1.8900e-003	133.8084
Enclosed Parking Structure	109440	20.9674	1.4400e-003	3.0000e-004	21.0900
Enclosed Parking Structure	246240	47.1767	3.2400e-003	6.7000e-004	47.4525
Enclosed Parking Structure	668536	128.0837	8.7900e-003	1.8200e-003	128.8324
Fast Food Restaurant w/o Drive Thru	63046.6	12.0790	8.3000e-004	1.7000e-004	12.1496
High Turnover (Sit Down Restaurant)	142128	27.2301	1.8700e-003	3.9000e-004	27.3892
Parking Lot	28512	5.4626	3.8000e-004	8.0000e-005	5.4945
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	3.6914	2.5000e-004	5.0000e-005	3.7130
Strip Mall	27249.8	5.2207	3.6000e-004	7.0000e-005	5.2513
Strip Mall	38006.5	7.2816	5.0000e-004	1.0000e-004	7.3242
Supermarket	291313	55.8123	3.8300e-003	7.9000e-004	56.1385
Total		**446.0362**	**0.0306**	**6.3300e-003**	**448.6435**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Unmitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	29.8964	0.7142	0.0172	50.2106
Mitigated	29.8964	0.7140	0.0171	50.1996

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	29.3464	0.7009	0.0168	49.2832
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.5500	0.0133	3.2000e-004	0.9274
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8964**	**0.7142**	**0.0172**	**50.2106**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	29.3464	0.7008	0.0168	49.2724
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.5500	0.0133	3.2000e-004	0.9272
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**29.8964**	**0.7140**	**0.0171**	**50.1996**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2299	2.7912	0.0000	105.8453
Unmitigated	47.2299	2.7912	0.0000	105.8453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Saranap Village - Mitigated Plan - Operational GHG 2018

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	315.00	Space	2.84	117,287.00	0
Enclosed Parking Structure	108.00	Space	0.97	43,200.00	0
Enclosed Parking Structure	48.00	Space	0.43	19,200.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0
Fast Food Restaurant w/o Drive Thru	2.13	1000sqft	0.05	2,135.00	0
High Turnover (Sit Down Restaurant)	4.81	1000sqft	0.11	4,813.00	0
Recreational Swimming Pool	0.74	1000sqft	0.02	737.00	0
Recreational Swimming Pool	0.94	1000sqft	0.02	936.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Strip Mall	1.75	1000sqft	0.04	1,750.00	0
Strip Mall	2.48	1000sqft	0.06	2,475.00	0
Strip Mall	3.45	1000sqft	0.08	3,452.00	0
Supermarket	7.64	1000sqft	0.18	7,636.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Climate Zone for Zip Code 94595 (found on Google Maps) using Existing Land Uses map. PG&E assumed for this area. CO2 Intensity Factor assumes 20% Renewable Energy consistent with CA Renewable Portfolio Standard.

Land Use - Consistent with emailed information from client and Project Description

Construction Phase - Construction is modeled in a separate CalEEMod

Off-road Equipment -

Off-road Equipment - Construction modeled separately in CalEEMod

Trips and VMT - Construction modeled separately

Demolition -

Grading - Consistent with client-provided data

Architectural Coating -

Vehicle Trips - Trip rates and pass-by trip percentages based on traffic data from OmniMeans

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use - Default Title 24 energy use adjusted to account for 2013 Title 24 standards

Water And Wastewater - Project specific water use

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	306890	488820
tblAreaCoating	Area_Residential_Exterior	163951	158625
tblAreaCoating	Area_Residential_Interior	491854	475875
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	312.05	239.34
tblEnergyUse	T24E	3.92	3.07
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	2.74	2.14

tblEnergyUse	T24E	3.32	2.60
tblEnergyUse	T24NG	7,191.67	6,918.39
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	4.10	3.41
tblEnergyUse	T24NG	25.82	21.48
tblFireplaces	NumberGas	107.80	135.24
tblFireplaces	NumberWood	27.44	0.00
tblLandUse	LandUseSquareFeet	126,000.00	117,287.00
tblLandUse	LandUseSquareFeet	2,130.00	2,135.00
tblLandUse	LandUseSquareFeet	4,810.00	4,813.00
tblLandUse	LandUseSquareFeet	740.00	737.00
tblLandUse	LandUseSquareFeet	940.00	936.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblLandUse	LandUseSquareFeet	2,480.00	2,475.00
tblLandUse	LandUseSquareFeet	3,450.00	3,452.00
tblLandUse	LandUseSquareFeet	7,640.00	7,636.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	328
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	DV_TP	37.00	34.70

tblVehicleTrips	DV_TP	20.00	27.50
tblVehicleTrips	DV_TP	40.00	41.20
tblVehicleTrips	DV_TP	30.00	38.40
tblVehicleTrips	PB_TP	12.00	17.50
tblVehicleTrips	PB_TP	43.00	21.50
tblVehicleTrips	PB_TP	15.00	12.50
tblVehicleTrips	PB_TP	36.00	18.00
tblVehicleTrips	PR_TP	51.00	47.80
tblVehicleTrips	PR_TP	37.00	51.00
tblVehicleTrips	PR_TP	45.00	46.30
tblVehicleTrips	PR_TP	34.00	43.60
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	696.00	715.22
tblVehicleTrips	ST_TR	158.37	119.47
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	42.04	156.70
tblVehicleTrips	ST_TR	177.59	96.12
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	SU_TR	500.00	715.22
tblVehicleTrips	SU_TR	131.84	119.47
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	20.43	156.70
tblVehicleTrips	SU_TR	166.44	96.12
tblVehicleTrips	WD_TR	6.59	4.18
tblVehicleTrips	WD_TR	716.00	715.22
tblVehicleTrips	WD_TR	127.15	119.47
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	44.32	156.70

tblVehicleTrips	WD_TR	102.24	96.12
tblWater	IndoorWaterUseRate	12,770,189.02	21,462,000.00
tblWater	IndoorWaterUseRate	646,526.81	0.00
tblWater	IndoorWaterUseRate	1,459,997.16	0.00
tblWater	IndoorWaterUseRate	99,360.48	0.00
tblWater	IndoorWaterUseRate	568,876.96	406,245.00
tblWater	IndoorWaterUseRate	941,769.16	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	429,699.00
tblWater	OutdoorWaterUseRate	41,267.67	0.00
tblWater	OutdoorWaterUseRate	93,191.31	0.00
tblWater	OutdoorWaterUseRate	60,898.36	0.00
tblWater	OutdoorWaterUseRate	348,666.53	0.00
tblWater	OutdoorWaterUseRate	29,126.88	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	512.1438	512.1438	0.0338	9.3800e-003	515.7599
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	17.8286	24.7663	0.7142	0.0172	45.0806
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,377.4491**	**2,432.8697**	**3.6335**	**0.0267**	**2,517.4330**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	512.1438	512.1438	0.0338	9.3800e-003	515.7599
Mobile	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	17.8286	24.7663	0.7140	0.0171	45.0695
Total	**4.4819**	**3.1217**	**18.1231**	**0.0260**	**1.6559**	**0.0627**	**1.7186**	**0.4435**	**0.0601**	**0.5036**	**55.4206**	**2,377.4491**	**2,432.8697**	**3.6334**	**0.0266**	**2,517.4219**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.00	81	0.73
Demolition	Excavators	3	0.00	162	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925
Unmitigated	2.2278	2.9564	16.5031	0.0248	1.6559	0.0333	1.6892	0.4435	0.0307	0.4742	0.0000	1,838.5875	1,838.5875	0.0860	0.0000	1,840.3925

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	819.28	819.28	819.28	1,828,933	1,828,933
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,523.42	1,523.42	1523.42	832,270	832,270
High Turnover (Sit Down Restaurant)	574.65	574.65	574.65	391,280	391,280
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Strip Mall	274.23	274.23	274.23	218,915	218,915
Strip Mall	388.62	388.62	388.62	310,233	310,233
Strip Mall	540.62	540.62	540.62	431,574	431,574
Supermarket	734.36	734.36	734.36	436,068	436,068
Total	4,855.16	4,855.16	4,855.16	4,449,273	4,449,273

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	1.38	7.30	1.50	79.50	19.00	47.8	34.7	17.5
High Turnover (Sit Down	9.50	1.38	7.30	8.50	72.50	19.00	51	27.5	21.5
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Supermarket	9.50	1.38	7.30	6.50	74.50	19.00	43.6	38.4	18

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527213	0.065297	0.176718	0.144995	0.036242	0.004841	0.009763	0.021699	0.001225	0.001482	0.006415	0.002059	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
NaturalGas Unmitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	346.3703	346.3703	0.0306	6.3400e-003	348.9776
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	346.3703	346.3703	0.0306	6.3400e-003	348.9776

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	103.3053	9.1300e-003	1.8900e-003	104.0829
Enclosed Parking Structure	109440	16.2823	1.4400e-003	3.0000e-004	16.4049
Enclosed Parking Structure	246240	36.6352	3.2400e-003	6.7000e-004	36.9109
Enclosed Parking Structure	668536	99.4636	8.7900e-003	1.8200e-003	100.2123
Fast Food Restaurant w/o Drive Thru	63046.6	9.3800	8.3000e-004	1.7000e-004	9.4506
High Turnover (Sit Down Restaurant)	142128	21.1456	1.8700e-003	3.9000e-004	21.3047
Parking Lot	28512	4.2420	3.8000e-004	8.0000e-005	4.2739
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.8666	2.5000e-004	5.0000e-005	2.8882
Strip Mall	27249.8	4.0542	3.6000e-004	7.0000e-005	4.0847
Strip Mall	38006.5	5.6546	5.0000e-004	1.0000e-004	5.6971
Supermarket	291313	43.3411	3.8300e-003	7.9000e-004	43.6674
Total		**346.3703**	**0.0306**	**6.3300e-003**	**348.9776**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	103.3053	9.1300e-003	1.8900e-003	104.0829
Enclosed Parking Structure	109440	16.2823	1.4400e-003	3.0000e-004	16.4049
Enclosed Parking Structure	246240	36.6352	3.2400e-003	6.7000e-004	36.9109
Enclosed Parking Structure	668536	99.4636	8.7900e-003	1.8200e-003	100.2123
Fast Food Restaurant w/o Drive Thru	63046.6	9.3800	8.3000e-004	1.7000e-004	9.4506
High Turnover (Sit Down Restaurant)	142128	21.1456	1.8700e-003	3.9000e-004	21.3047
Parking Lot	28512	4.2420	3.8000e-004	8.0000e-005	4.2739
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.8666	2.5000e-004	5.0000e-005	2.8882
Strip Mall	27249.8	4.0542	3.6000e-004	7.0000e-005	4.0847
Strip Mall	38006.5	5.6546	5.0000e-004	1.0000e-004	5.6971
Supermarket	291313	43.3411	3.8300e-003	7.9000e-004	43.6674
Total		**346.3703**	**0.0306**	**6.3300e-003**	**348.9776**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548
Unmitigated	2.2373	0.0180	1.5284	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3700e-003	1.2000e-004	10.3548

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0457	0.0171	1.4710	8.0000e-005		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	2.3875	2.3875	2.3800e-003	0.0000	2.4376
Total	**2.2373**	**0.0180**	**1.5284**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3600e-003**	**1.2000e-004**	**10.3548**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	24.7663	0.7142	0.0172	45.0806
Mitigated	24.7663	0.7140	0.0171	45.0695

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	24.3104	0.7009	0.0168	44.2473
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4559	0.0133	3.2000e-004	0.8333
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**24.7663**	**0.7142**	**0.0172**	**45.0806**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	24.3104	0.7008	0.0168	44.2364
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4559	0.0133	3.2000e-004	0.8331
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**24.7663**	**0.7140**	**0.0171**	**45.0695**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2299	2.7912	0.0000	105.8453
Unmitigated	47.2299	2.7912	0.0000	105.8453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Saranap Village - Mitigated Plan - Operational GHG 2019

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	315.00	Space	2.84	117,287.00	0
Enclosed Parking Structure	108.00	Space	0.97	43,200.00	0
Enclosed Parking Structure	48.00	Space	0.43	19,200.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0
Fast Food Restaurant w/o Drive Thru	2.13	1000sqft	0.05	2,135.00	0
High Turnover (Sit Down Restaurant)	4.81	1000sqft	0.11	4,813.00	0
Recreational Swimming Pool	0.74	1000sqft	0.02	737.00	0
Recreational Swimming Pool	0.94	1000sqft	0.02	936.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Strip Mall	1.75	1000sqft	0.04	1,750.00	0
Strip Mall	2.48	1000sqft	0.06	2,475.00	0
Strip Mall	3.45	1000sqft	0.08	3,452.00	0
Supermarket	7.64	1000sqft	0.18	7,636.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	307	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Climate Zone for Zip Code 94595 (found on Google Maps) using Existing Land Uses map. PG&E assumed for this area. CO2 Intensity Factor assumes 20% Renewable Energy consistent with CA Renewable Portfolio Standard.

Land Use - Consistent with emailed information from client and Project Description

Construction Phase - Construction is modeled in a separate CalEEMod

Off-road Equipment -

Off-road Equipment - Construction modeled separately in CalEEMod

Trips and VMT - Construction modeled separately

Demolition -

Grading - Consistent with client-provided data

Architectural Coating -

Vehicle Trips - Trip rates and pass-by trip percentages based on traffic data from OmniMeans

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use - Default Title 24 energy use adjusted to account for 2013 Title 24 standards

Water And Wastewater - Project specific water use

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	306890	488820
tblAreaCoating	Area_Residential_Exterior	163951	158625
tblAreaCoating	Area_Residential_Interior	491854	475875
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	312.05	239.34
tblEnergyUse	T24E	3.92	3.07
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	2.74	2.14

tblEnergyUse	T24E	3.32	2.60
tblEnergyUse	T24NG	7,191.67	6,918.39
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	4.10	3.41
tblEnergyUse	T24NG	25.82	21.48
tblFireplaces	NumberGas	107.80	135.24
tblFireplaces	NumberWood	27.44	0.00
tblLandUse	LandUseSquareFeet	126,000.00	117,287.00
tblLandUse	LandUseSquareFeet	2,130.00	2,135.00
tblLandUse	LandUseSquareFeet	4,810.00	4,813.00
tblLandUse	LandUseSquareFeet	740.00	737.00
tblLandUse	LandUseSquareFeet	940.00	936.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblLandUse	LandUseSquareFeet	2,480.00	2,475.00
tblLandUse	LandUseSquareFeet	3,450.00	3,452.00
tblLandUse	LandUseSquareFeet	7,640.00	7,636.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	307
tblProjectCharacteristics	OperationalYear	2014	2019
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	DV_TP	37.00	34.70

tblVehicleTrips	DV_TP	20.00	27.50
tblVehicleTrips	DV_TP	40.00	41.20
tblVehicleTrips	DV_TP	30.00	38.40
tblVehicleTrips	PB_TP	12.00	17.50
tblVehicleTrips	PB_TP	43.00	21.50
tblVehicleTrips	PB_TP	15.00	12.50
tblVehicleTrips	PB_TP	36.00	18.00
tblVehicleTrips	PR_TP	51.00	47.80
tblVehicleTrips	PR_TP	37.00	51.00
tblVehicleTrips	PR_TP	45.00	46.30
tblVehicleTrips	PR_TP	34.00	43.60
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	696.00	715.22
tblVehicleTrips	ST_TR	158.37	119.47
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	42.04	156.70
tblVehicleTrips	ST_TR	177.59	96.12
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	SU_TR	500.00	715.22
tblVehicleTrips	SU_TR	131.84	119.47
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	20.43	156.70
tblVehicleTrips	SU_TR	166.44	96.12
tblVehicleTrips	WD_TR	6.59	4.18
tblVehicleTrips	WD_TR	716.00	715.22
tblVehicleTrips	WD_TR	127.15	119.47
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	44.32	156.70

tblVehicleTrips	WD_TR	102.24	96.12
tblWater	IndoorWaterUseRate	12,770,189.02	21,462,000.00
tblWater	IndoorWaterUseRate	646,526.81	0.00
tblWater	IndoorWaterUseRate	1,459,997.16	0.00
tblWater	IndoorWaterUseRate	99,360.48	0.00
tblWater	IndoorWaterUseRate	568,876.96	406,245.00
tblWater	IndoorWaterUseRate	941,769.16	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	429,699.00
tblWater	OutdoorWaterUseRate	41,267.67	0.00
tblWater	OutdoorWaterUseRate	93,191.31	0.00
tblWater	OutdoorWaterUseRate	60,898.36	0.00
tblWater	OutdoorWaterUseRate	348,666.53	0.00
tblWater	OutdoorWaterUseRate	29,126.88	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2369	0.0179	1.5253	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3400e-003	1.2000e-004	10.3543
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	489.9676	489.9676	0.0338	9.3800e-003	493.5838
Mobile	2.0940	2.7592	15.4101	0.0248	1.6558	0.0326	1.6884	0.4434	0.0301	0.4735	0.0000	1,782.7848	1,782.7848	0.0798	0.0000	1,784.4612
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	16.6871	23.6249	0.7142	0.0172	43.9391
Total	**4.3477**	**2.9244**	**17.0270**	**0.0259**	**1.6558**	**0.0620**	**1.7178**	**0.4434**	**0.0595**	**0.5029**	**55.4206**	**2,298.3288**	**2,353.7494**	**3.6273**	**0.0267**	**2,438.1836**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2369	0.0179	1.5253	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3400e-003	1.2000e-004	10.3543
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	489.9676	489.9676	0.0338	9.3800e-003	493.5838
Mobile	2.0940	2.7592	15.4101	0.0248	1.6558	0.0326	1.6884	0.4434	0.0301	0.4735	0.0000	1,782.7848	1,782.7848	0.0798	0.0000	1,784.4612
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	16.6871	23.6249	0.7140	0.0171	43.9280
Total	**4.3477**	**2.9244**	**17.0270**	**0.0259**	**1.6558**	**0.0620**	**1.7178**	**0.4434**	**0.0595**	**0.5029**	**55.4206**	**2,298.3288**	**2,353.7494**	**3.6272**	**0.0266**	**2,438.1726**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.00	81	0.73
Demolition	Excavators	3	0.00	162	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0940	2.7592	15.4101	0.0248	1.6558	0.0326	1.6884	0.4434	0.0301	0.4735	0.0000	1,782.7848	1,782.7848	0.0798	0.0000	1,784.4612
Unmitigated	2.0940	2.7592	15.4101	0.0248	1.6558	0.0326	1.6884	0.4434	0.0301	0.4735	0.0000	1,782.7848	1,782.7848	0.0798	0.0000	1,784.4612

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	819.28	819.28	819.28	1,828,933	1,828,933
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,523.42	1,523.42	1523.42	832,270	832,270
High Turnover (Sit Down Restaurant)	574.65	574.65	574.65	391,280	391,280
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Strip Mall	274.23	274.23	274.23	218,915	218,915
Strip Mall	388.62	388.62	388.62	310,233	310,233
Strip Mall	540.62	540.62	540.62	431,574	431,574
Supermarket	734.36	734.36	734.36	436,068	436,068
Total	4,855.16	4,855.16	4,855.16	4,449,273	4,449,273

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	1.38	7.30	1.50	79.50	19.00	47.8	34.7	17.5
High Turnover (Sit Down	9.50	1.38	7.30	8.50	72.50	19.00	51	27.5	21.5
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Supermarket	9.50	1.38	7.30	6.50	74.50	19.00	43.6	38.4	18

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527262	0.065466	0.176679	0.144674	0.036160	0.004831	0.009746	0.021956	0.001228	0.001481	0.006444	0.002023	0.002051

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
NaturalGas Unmitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.1942	324.1942	0.0306	6.3400e-003	326.8014
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.1942	324.1942	0.0306	6.3400e-003	326.8014

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	96.6913	9.1300e-003	1.8900e-003	97.4689
Enclosed Parking Structure	109440	15.2398	1.4400e-003	3.0000e-004	15.3624
Enclosed Parking Structure	246240	34.2896	3.2400e-003	6.7000e-004	34.5654
Enclosed Parking Structure	668536	93.0955	8.7900e-003	1.8200e-003	93.8442
Fast Food Restaurant w/o Drive Thru	63046.6	8.7794	8.3000e-004	1.7000e-004	8.8500
High Turnover (Sit Down Restaurant)	142128	19.7917	1.8700e-003	3.9000e-004	19.9509
Parking Lot	28512	3.9704	3.8000e-004	8.0000e-005	4.0023
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.6831	2.5000e-004	5.0000e-005	2.7046
Strip Mall	27249.8	3.7946	3.6000e-004	7.0000e-005	3.8251
Strip Mall	38006.5	5.2925	5.0000e-004	1.0000e-004	5.3351
Supermarket	291313	40.5662	3.8300e-003	7.9000e-004	40.8925
Total		**324.1941**	**0.0306**	**6.3300e-003**	**326.8014**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	96.6913	9.1300e-003	1.8900e-003	97.4689
Enclosed Parking Structure	109440	15.2398	1.4400e-003	3.0000e-004	15.3624
Enclosed Parking Structure	246240	34.2896	3.2400e-003	6.7000e-004	34.5654
Enclosed Parking Structure	668536	93.0955	8.7900e-003	1.8200e-003	93.8442
Fast Food Restaurant w/o Drive Thru	63046.6	8.7794	8.3000e-004	1.7000e-004	8.8500
High Turnover (Sit Down Restaurant)	142128	19.7917	1.8700e-003	3.9000e-004	19.9509
Parking Lot	28512	3.9704	3.8000e-004	8.0000e-005	4.0023
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.6831	2.5000e-004	5.0000e-005	2.7046
Strip Mall	27249.8	3.7946	3.6000e-004	7.0000e-005	3.8251
Strip Mall	38006.5	5.2925	5.0000e-004	1.0000e-004	5.3351
Supermarket	291313	40.5662	3.8300e-003	7.9000e-004	40.8925
Total		**324.1941**	**0.0306**	**6.3300e-003**	**326.8014**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2369	0.0179	1.5253	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3400e-003	1.2000e-004	10.3543
Unmitigated	2.2369	0.0179	1.5253	2.6000e-004		0.0178	0.0178		0.0178	0.0178	1.2529	8.8893	10.1422	8.3400e-003	1.2000e-004	10.3543

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0453	0.0170	1.4679	8.0000e-005		8.0300e-003	8.0300e-003		8.0300e-003	8.0300e-003	0.0000	2.3875	2.3875	2.3600e-003	0.0000	2.4371
Total	**2.2369**	**0.0179**	**1.5253**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3400e-003**	**1.2000e-004**	**10.3543**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0453	0.0170	1.4679	8.0000e-005		8.0300e-003	8.0300e-003		8.0300e-003	8.0300e-003	0.0000	2.3875	2.3875	2.3600e-003	0.0000	2.4371
Total	**2.2369**	**0.0179**	**1.5253**	**2.7000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**1.2529**	**8.8893**	**10.1422**	**8.3400e-003**	**1.2000e-004**	**10.3543**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	23.6249	0.7142	0.0172	43.9391
Mitigated	23.6249	0.7140	0.0171	43.9280

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	23.1899	0.7009	0.0168	43.1268
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4350	0.0133	3.2000e-004	0.8123
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**23.6249**	**0.7142**	**0.0172**	**43.9391**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	23.1899	0.7008	0.0168	43.1159
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4350	0.0133	3.2000e-004	0.8121
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**23.6249**	**0.7140**	**0.0171**	**43.9280**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2299	2.7912	0.0000	105.8453
Unmitigated	47.2299	2.7912	0.0000	105.8453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Saranap Village - Mitigated Plan - Operational GHG 2020

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	315.00	Space	2.84	117,287.00	0
Enclosed Parking Structure	108.00	Space	0.97	43,200.00	0
Enclosed Parking Structure	48.00	Space	0.43	19,200.00	0
Parking Lot	81.00	Space	0.73	32,400.00	0
Fast Food Restaurant w/o Drive Thru	2.13	1000sqft	0.05	2,135.00	0
High Turnover (Sit Down Restaurant)	4.81	1000sqft	0.11	4,813.00	0
Recreational Swimming Pool	0.74	1000sqft	0.02	737.00	0
Recreational Swimming Pool	0.94	1000sqft	0.02	936.00	0
Apartments Mid Rise	196.00	Dwelling Unit	5.16	242,891.00	561
Strip Mall	1.75	1000sqft	0.04	1,750.00	0
Strip Mall	2.48	1000sqft	0.06	2,475.00	0
Strip Mall	3.45	1000sqft	0.08	3,452.00	0
Supermarket	7.64	1000sqft	0.18	7,636.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Climate Zone for Zip Code 94595 (found on Google Maps) using Existing Land Uses map. PG&E assumed for this area. CO2 Intensity Factor assumes 20% Renewable Energy consistent with CA Renewable Portfolio Standard.

Land Use - Consistent with emailed information from client and Project Description

Construction Phase - Construction is modeled in a separate CalEEMod

Off-road Equipment -

Off-road Equipment - Construction modeled separately in CalEEMod

Trips and VMT - Construction modeled separately

Demolition -

Grading - Consistent with client-provided data

Architectural Coating -

Vehicle Trips - Trip rates and pass-by trip percentages based on traffic data from OmniMeans

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use - Default Title 24 energy use adjusted to account for 2013 Title 24 standards

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	306890	488820
tblAreaCoating	Area_Residential_Exterior	163951	158625
tblAreaCoating	Area_Residential_Interior	491854	475875
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	T24E	312.05	239.34
tblEnergyUse	T24E	3.92	3.07
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	3.26	2.55
tblEnergyUse	T24E	2.74	2.14
tblEnergyUse	T24E	3.32	2.60

tblEnergyUse	T24NG	7,191.67	6,918.39
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	41.99	34.94
tblEnergyUse	T24NG	4.10	3.41
tblEnergyUse	T24NG	25.82	21.48
tblFireplaces	NumberGas	107.80	135.24
tblFireplaces	NumberWood	27.44	0.00
tblLandUse	LandUseSquareFeet	126,000.00	117,287.00
tblLandUse	LandUseSquareFeet	2,130.00	2,135.00
tblLandUse	LandUseSquareFeet	4,810.00	4,813.00
tblLandUse	LandUseSquareFeet	740.00	737.00
tblLandUse	LandUseSquareFeet	940.00	936.00
tblLandUse	LandUseSquareFeet	196,000.00	242,891.00
tblLandUse	LandUseSquareFeet	2,480.00	2,475.00
tblLandUse	LandUseSquareFeet	3,450.00	3,452.00
tblLandUse	LandUseSquareFeet	7,640.00	7,636.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	CC_TL	7.30	1.38
tblVehicleTrips	DV_TP	37.00	34.70
tblVehicleTrips	DV_TP	20.00	27.50

tblVehicleTrips	DV_TP	40.00	41.20
tblVehicleTrips	DV_TP	30.00	38.40
tblVehicleTrips	PB_TP	12.00	17.50
tblVehicleTrips	PB_TP	43.00	21.50
tblVehicleTrips	PB_TP	15.00	12.50
tblVehicleTrips	PB_TP	36.00	18.00
tblVehicleTrips	PR_TP	51.00	47.80
tblVehicleTrips	PR_TP	37.00	51.00
tblVehicleTrips	PR_TP	45.00	46.30
tblVehicleTrips	PR_TP	34.00	43.60
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	696.00	715.22
tblVehicleTrips	ST_TR	158.37	119.47
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	42.04	156.70
tblVehicleTrips	ST_TR	177.59	96.12
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	SU_TR	500.00	715.22
tblVehicleTrips	SU_TR	131.84	119.47
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	20.43	156.70
tblVehicleTrips	SU_TR	166.44	96.12
tblVehicleTrips	WD_TR	6.59	4.18
tblVehicleTrips	WD_TR	716.00	715.22
tblVehicleTrips	WD_TR	127.15	119.47
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	44.32	156.70
tblVehicleTrips	WD_TR	102.24	96.12

tblWater	IndoorWaterUseRate	12,770,189.02	21,462,000.00
tblWater	IndoorWaterUseRate	646,526.81	0.00
tblWater	IndoorWaterUseRate	1,459,997.16	0.00
tblWater	IndoorWaterUseRate	99,360.48	0.00
tblWater	IndoorWaterUseRate	568,876.96	406,245.00
tblWater	IndoorWaterUseRate	941,769.16	0.00
tblWater	OutdoorWaterUseRate	8,050,771.34	429,699.00
tblWater	OutdoorWaterUseRate	41,267.67	0.00
tblWater	OutdoorWaterUseRate	93,191.31	0.00
tblWater	OutdoorWaterUseRate	60,898.36	0.00
tblWater	OutdoorWaterUseRate	348,666.53	0.00
tblWater	OutdoorWaterUseRate	29,126.88	0.00

2.0 Emissions Summary

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2366	0.0179	1.5229	2.6000e-004		0.0179	0.0179		0.0179	0.0179	1.2529	8.8893	10.1422	8.3300e-003	1.2000e-004	10.3540
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	472.0155	472.0155	0.0338	9.3800e-003	475.6316
Mobile	1.9874	2.5322	14.5288	0.0248	1.6557	0.0318	1.6875	0.4434	0.0294	0.4727	0.0000	1,720.5020	1,720.5020	0.0749	0.0000	1,722.0751
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	15.7631	22.7008	0.7142	0.0172	43.0151
Total	**4.2407**	**2.6974**	**16.1434**	**0.0259**	**1.6557**	**0.0613**	**1.7169**	**0.4434**	**0.0588**	**0.5022**	**55.4206**	**2,217.1697**	**2,272.5903**	**3.6224**	**0.0267**	**2,356.9210**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2366	0.0179	1.5229	2.6000e-004		0.0179	0.0179		0.0179	0.0179	1.2529	8.8893	10.1422	8.3300e-003	1.2000e-004	10.3540
Energy	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	472.0155	472.0155	0.0338	9.3800e-003	475.6316
Mobile	1.9874	2.5322	14.5288	0.0248	1.6557	0.0318	1.6875	0.4434	0.0294	0.4727	0.0000	1,720.5020	1,720.5020	0.0749	0.0000	1,722.0751
Waste						0.0000	0.0000		0.0000	0.0000	47.2299	0.0000	47.2299	2.7912	0.0000	105.8453
Water						0.0000	0.0000		0.0000	0.0000	6.9378	15.7631	22.7008	0.7140	0.0171	43.0040
Total	**4.2407**	**2.6974**	**16.1434**	**0.0259**	**1.6557**	**0.0613**	**1.7169**	**0.4434**	**0.0588**	**0.5022**	**55.4206**	**2,217.1697**	**2,272.5903**	**3.6223**	**0.0266**	**2,356.9099**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.11**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.00	81	0.73
Demolition	Excavators	3	0.00	162	0.38
Demolition	Rubber Tired Dozers	2	0.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9874	2.5322	14.5288	0.0248	1.6557	0.0318	1.6875	0.4434	0.0294	0.4727	0.0000	1,720.5020	1,720.5020	0.0749	0.0000	1,722.0751
Unmitigated	1.9874	2.5322	14.5288	0.0248	1.6557	0.0318	1.6875	0.4434	0.0294	0.4727	0.0000	1,720.5020	1,720.5020	0.0749	0.0000	1,722.0751

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	819.28	819.28	819.28	1,828,933	1,828,933
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Enclosed Parking Structure	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	1,523.42	1,523.42	1523.42	832,270	832,270
High Turnover (Sit Down Restaurant)	574.65	574.65	574.65	391,280	391,280
Parking Lot	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Recreational Swimming Pool	0.00	0.00	0.00		
Strip Mall	274.23	274.23	274.23	218,915	218,915
Strip Mall	388.62	388.62	388.62	310,233	310,233
Strip Mall	540.62	540.62	540.62	431,574	431,574
Supermarket	734.36	734.36	734.36	436,068	436,068
Total	4,855.16	4,855.16	4,855.16	4,449,273	4,449,273

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	1.38	7.30	1.50	79.50	19.00	47.8	34.7	17.5
High Turnover (Sit Down	9.50	1.38	7.30	8.50	72.50	19.00	51	27.5	21.5
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Recreational Swimming Pool	9.50	7.30	7.30	33.00	48.00	19.00	52	39	9
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Strip Mall	9.50	1.38	7.30	16.60	64.40	19.00	46.3	41.2	12.5
Supermarket	9.50	1.38	7.30	6.50	74.50	19.00	43.6	38.4	18

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.527126	0.065652	0.176629	0.144533	0.036107	0.004820	0.009723	0.022180	0.001234	0.001481	0.006474	0.001989	0.002052

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
NaturalGas Unmitigated	0.0168	0.1473	0.0916	9.1000e-004		0.0116	0.0116		0.0116	0.0116	0.0000	165.7735	165.7735	3.1800e-003	3.0400e-003	166.7823
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	306.2420	306.2420	0.0306	6.3400e-003	308.8493
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	306.2420	306.2420	0.0306	6.3400e-003	308.8493

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	347920	1.8800e-003	0.0171	0.0143	1.0000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	18.5663	18.5663	3.6000e-004	3.4000e-004	18.6793
High Turnover (Sit Down Restaurant)	784326	4.2300e-003	0.0385	0.0323	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8547	41.8547	8.0000e-004	7.7000e-004	42.1094
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.68176e+006	9.0700e-003	0.0775	0.0330	4.9000e-004		6.2700e-003	6.2700e-003		6.2700e-003	6.2700e-003	0.0000	89.7449	89.7449	1.7200e-003	1.6500e-003	90.2911
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	10172.3	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5428	0.5428	1.0000e-005	1.0000e-005	0.5461
Strip Mall	14187.7	8.0000e-005	7.0000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7571	0.7571	1.0000e-005	1.0000e-005	0.7617
Strip Mall	7192.5	4.0000e-005	3.5000e-004	3.0000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.3838	0.3838	1.0000e-005	1.0000e-005	0.3862
Supermarket	260922	1.4100e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9238	13.9238	2.7000e-004	2.6000e-004	14.0085
Total		**0.0168**	**0.1473**	**0.0917**	**9.0000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**	**0.0000**	**165.7735**	**165.7735**	**3.1800e-003**	**3.0500e-003**	**166.7823**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	91.3370	9.1300e-003	1.8900e-003	92.1146
Enclosed Parking Structure	109440	14.3959	1.4400e-003	3.0000e-004	14.5185
Enclosed Parking Structure	246240	32.3909	3.2400e-003	6.7000e-004	32.6666
Enclosed Parking Structure	668536	87.9404	8.7900e-003	1.8200e-003	88.6891
Fast Food Restaurant w/o Drive Thru	63046.6	8.2933	8.3000e-004	1.7000e-004	8.3639
High Turnover (Sit Down Restaurant)	142128	18.6958	1.8700e-003	3.9000e-004	18.8549
Parking Lot	28512	3.7505	3.8000e-004	8.0000e-005	3.7825
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.5345	2.5000e-004	5.0000e-005	2.5561
Strip Mall	27249.8	3.5845	3.6000e-004	7.0000e-005	3.6150
Strip Mall	38006.5	4.9995	5.0000e-004	1.0000e-004	5.0420
Supermarket	291313	38.3199	3.8300e-003	7.9000e-004	38.6461
Total		**306.2421**	**0.0306**	**6.3300e-003**	**308.8493**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	694357	91.3370	9.1300e-003	1.8900e-003	92.1146
Enclosed Parking Structure	109440	14.3959	1.4400e-003	3.0000e-004	14.5185
Enclosed Parking Structure	246240	32.3909	3.2400e-003	6.7000e-004	32.6666
Enclosed Parking Structure	668536	87.9404	8.7900e-003	1.8200e-003	88.6891
Fast Food Restaurant w/o Drive Thru	63046.6	8.2933	8.3000e-004	1.7000e-004	8.3639
High Turnover (Sit Down Restaurant)	142128	18.6958	1.8700e-003	3.9000e-004	18.8549
Parking Lot	28512	3.7505	3.8000e-004	8.0000e-005	3.7825
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	19267.5	2.5345	2.5000e-004	5.0000e-005	2.5561
Strip Mall	27249.8	3.5845	3.6000e-004	7.0000e-005	3.6150
Strip Mall	38006.5	4.9995	5.0000e-004	1.0000e-004	5.0420
Supermarket	291313	38.3199	3.8300e-003	7.9000e-004	38.6461
Total		**306.2421**	**0.0306**	**6.3300e-003**	**308.8493**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2366	0.0179	1.5229	2.6000e-004		0.0179	0.0179		0.0179	0.0179	1.2529	8.8893	10.1422	8.3300e-003	1.2000e-004	10.3540
Unmitigated	2.2366	0.0179	1.5229	2.6000e-004		0.0179	0.0179		0.0179	0.0179	1.2529	8.8893	10.1422	8.3300e-003	1.2000e-004	10.3540

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0450	0.0169	1.4655	8.0000e-005		8.0500e-003	8.0500e-003		8.0500e-003	8.0500e-003	0.0000	2.3875	2.3875	2.3500e-003	0.0000	2.4368
Total	**2.2366**	**0.0179**	**1.5229**	**2.7000e-004**		**0.0179**	**0.0179**		**0.0179**	**0.0179**	**1.2529**	**8.8893**	**10.1422**	**8.3300e-003**	**1.2000e-004**	**10.3540**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.3143					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8704					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.9700e-003	9.4000e-004	0.0574	1.9000e-004		9.8100e-003	9.8100e-003		9.8100e-003	9.8100e-003	1.2529	6.5017	7.7546	5.9800e-003	1.2000e-004	7.9172
Landscaping	0.0450	0.0169	1.4655	8.0000e-005		8.0500e-003	8.0500e-003		8.0500e-003	8.0500e-003	0.0000	2.3875	2.3875	2.3500e-003	0.0000	2.4368
Total	**2.2366**	**0.0179**	**1.5229**	**2.7000e-004**		**0.0179**	**0.0179**		**0.0179**	**0.0179**	**1.2529**	**8.8893**	**10.1422**	**8.3300e-003**	**1.2000e-004**	**10.3540**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	22.7008	0.7142	0.0172	43.0151
Mitigated	22.7008	0.7140	0.0171	43.0040

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	22.2828	0.7009	0.0168	42.2197
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4180	0.0133	3.2000e-004	0.7954
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**22.7008**	**0.7142**	**0.0172**	**43.0151**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	21.462 / 0.429699	22.2828	0.7008	0.0168	42.2088
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.406245 / 0	0.4180	0.0133	3.2000e-004	0.7952
Supermarket	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**22.7008**	**0.7140**	**0.0171**	**43.0040**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	47.2299	2.7912	0.0000	105.8453
Unmitigated	47.2299	2.7912	0.0000	105.8453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	90.16	18.3017	1.0816	0.0000	41.0152
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	24.54	4.9814	0.2944	0.0000	11.1636
High Turnover (Sit Down Restaurant)	57.24	11.6192	0.6867	0.0000	26.0394
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	9.58	1.9447	0.1149	0.0000	4.3581
Strip Mall	8.06	1.6361	0.0967	0.0000	3.6666
Supermarket	43.09	8.7469	0.5169	0.0000	19.6023
Total		**47.2299**	**2.7912**	**0.0000**	**105.8453**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

May 19, 2015

Marie Cooper
Perkins Coie LLP
Four Embarcadero Center Suite 2400
San Francisco, CA 94111-4131

Subject: Analysis of Trip Length for Saranap Village; EPS #141021

Dear Marie:

In March 2014, Economic & Planning Systems, Inc. (EPS) prepared a trade area analysis for the Saranap Village project to estimate the distance customers of the retail component were likely to travel. EPS concluded that the average trip length from households in the area to the commercial uses at the project site would be 1.38 miles per trip based on the type and amount of retail being proposed. This information was then used to determine the vehicle miles travelled (VMT), which, in turn, factored into the greenhouse gas emissions estimate.

We have reviewed our March 2014 analysis in the revised context of a smaller, mitigated alternative that includes approximately 22,261 square feet of retail space. Because the neighborhood-serving commercial uses anticipated as part of the mitigated alternative remain consistent with the "Convenience Center" definition we used previously and the amount of retail proposed remains within the categorical definition, we believe the average trip length estimate remains valid.

Sincerely,

ECONOMIC & PLANNING SYSTEMS, INC.

Ashleigh Kanat
Executive Vice President

The Economics of Land Use

Economic & Planning Systems, Inc.
One Kaiser Plaza, Suite 1410
Oakland, CA 94612-3604
510.841.9190 tel
510.740.2080 fax

Oakland
Sacramento
Denver
Los Angeles

www.epsys.com

This page intentionally left blank

APPENDIX E

Hydrology Technical Reports

This page intentionally left blank

KIER & WRIGHT
Civil Engineers & Surveyors, Inc.

Reed Onate
Vice President – Forward Planning
Hall Equities Group
1855 Olympic Blvd Suite 300
Walnut Creek, CA

February 29, 2016

Re: Saranap Village Mitigated Alternative Traffic Median

Dear Reed:

We have compared the current proposal for a median near the intersection of Boulevard Way and Flora Avenue, the 2016 Median Design, with the original proposal for a midblock roundabout in Boulevard Way between Saranap Avenue and Flora Avenue, the 2014 Midblock Roundabout, as shown on DEIR Figure 3-2.

Concerning the 2016 Median Design in Boulevard Way, please note the following:

- The new limit of construction for the 2016 Median Design extends east of the limit of construction of the 2014 Midblock Roundabout. The additional impacted area is approximately 7,440 square feet.
- The improvements in the public right-of-way east of Parcels A and B for the 2014 Midblock Roundabout include impacted area totaling approximately 27,000 square feet, with shallow graded/hardscape areas totaling approximately 20,782 square feet, and pavement overlay areas totaling approximately 6,218 square feet.
- The improvements in the public right-of-way east of Parcels A and B for the 2016 Median Design include impacted area totaling approximately 34,440 square feet, with shallow graded/hardscape areas totaling approximately 16,090 square feet and pavement overlay areas totaling approximately 18,350 square feet.
- The 2016 Median Design will require less C.3 treatment area than required for the 2014 Midblock Roundabout because the area to be disturbed below the existing asphalt surface is less for the 2016 Median Design than for the 2014 Midblock Roundabout.

Also note that the time and labor required to construct the 2016 Median Design should be less than that required to construct the 2014 Midblock Roundabout because the 2016 Median Design includes less shallow graded/hardscape areas and more pavement overlay. In general, pavement overlay is simpler to construct.

Please give me a call if you have any questions. Thank you for the opportunity to be of service.

Sincerely,
Kier & Wright, Civil Engineers & Land Surveyors, Inc.

Mike Cooper
Mike Cooper, PE
Senior Project Manager

2850 Collier Canyon Rd · Livermore, California 94551 · (925) 245-8788 · FAX (925) 245-8796

This page intentionally left blank

PRELIMINARY STORMWATER CONTROL PLAN

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

PARCEL A, B/B1, C, and Streets

July 14, 2015
Revised September 9, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

TABLE OF CONTENTS

I. **Executive Summary**

I.A. Parcel A 3

I.B. Parcel B/B1 3

I.C. Parcel C 3

I.D. Street Improvements 4

II. **Appendices**

II.A. Parcel A Preliminary Stormwater Control Plan 5

II.B. Parcel B/B1 Preliminary Stormwater Control Plan 17

II.C. Parcel C Preliminary Stormwater Control Plan 29

II.D Street Improvements Stormwater Control Plan 41

III. **Figures**

III.1. Contra Costa Isoheyetal Map B-166 49

III.2. Stormwater Treatment Plant Parcel A 50

III.3. Stormwater Treatment Plant Parcel B 51

III.4. Stormwater Treatment Plant Parcel C 52

III.5 Stormwater Treatment Street Improvements 53

I. MITIGATED ALTERNATIVE DATA

Table 1. Mitigated Alternative Data

Saranap Village Mitigated Alternative	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Application Submittal Date	September, 2013
Mitigated Alternative Location	Contra Costa County
Name of Developer	Hall Equities Group
Mitigated Alternative Phase No.	N/A
Mitigated Alternative Type and Description	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Mitigated Alternative Watershed	Las Trampas Creek Watershed
Total Mitigated Alternative Site Area	231,158 ft^2
Total Area of Pavement Rehabilitation	71,000 ft^2
Total Area of Land Disturbed	149,962 ft^2
Total Reduced Impervious Surface Area	-2,180 ft^2
Total New Impervious Surface Area	27,230 ft^2
Total Replaced Impervious Surface Area	180,551 ft^2
Total Pre-Mitigated Alternative Impervious Surface Area	182,731 ft^2
Total Post-Mitigated Alternative Impervious Surface Area	202,945 ft^2
50% Rule[*]	N/A
Mitigated Alternative Density	N/A
Applicable Special Mitigated Alternative Categories	N/A
Percent LID	100%
HMP Compliance [†]	N/A

** At the request of the Owner, the Mitigated Alternative includes 100% LID treatment for the Mitigated Alternative. However, there may be constraints in final design that require use of Non-LID treatment facilities in streets and/or sites, subject to the approval of County Public Works Department. These constraints may include utilities, parking, pedestrian, and ADA facilities. Every attempt will be made to include LID treatment.

9/9/2015

Saranap Pervious and Impervious Area

Site: A			
Proposed:		LID Bioswale	
Pervious Area:	7,039 S.F.	*Required*	*Proposed*
Impervious Area:	56,334 S.F.	2,282 S.F.	3,312 S.F.
Total Area:	63,373 S.F.		
Site: B and B1			
Proposed:		LID Bioswale	
Pervious Area:	8,244 S.F.	*Required*	*Proposed*
Impervious Area:	54,030 S.F.	2,194 S.F.	2,270 S.F.
Total Area:	62,274 S.F.		
Site: C			
Proposed:		LID Bioswale	
Pervious Area:	2,734 S.F.	*Required*	*Proposed*
Impervious Area:	21,581 S.F.		
Total Area:	24,315 S.F.	875 S.F.	875 S.F.
Site: Street Imp.			
Proposed:		LID Bioswale	
Pervious Area:	7,317 S.F.	*Required*	*Proposed*
Impervious Area (Pavement Rehab):	35,500 S.F.		
Impervious Area (Overlay)	38,379 S.F.	2,152 S.F.	2,160 S.F.
Total Area:	81,196 S.F.		
Total-Mitigated Alternative:			
Proposed:		LID Bioswale	
Pervious Area:	25,334 S.F.	*Required*	*Proposed*
Impervious Area (Does not include Street Area Overlay):	167,445 S.F.	7,503 S.F.	8,617 S.F.
Total Area:	231,158 S.F.		

I. Executive Summary

The Stormwater Control Plans (SWCP) will address the provisions recommended for post construction stormwater control for Saranap Village Mitigated Alternative in accordance with the C.3 stormwater guidebook from Contra Costa County. The SWCP was based on research and environmental planning for water quality, and will showcase the steps taken to design an effective and environmentally conscious SWCP for post construction stormwater controls.

At the request of the Owner, 100% LID treatment is included in the Mitigated Alternative for Parcels A, B and C and the streets. However, there may be constraints in final design that require use of Non-LID treatment facilities in streets and/or sites, subject to the approval of County Public Works Department. These constraints may include utilities, parking, pedestrian, and ADA facilities. Every attempt will be made to include LID treatment.

Modifications to storm drainage will be very minimal during construction. Development will involve clearing and grubbing, use of heavy equipment, demolition of existing buildings, grinding of pavement & concrete, paving, grading and handling of a large variety of building materials. Stormwater runoff volumes may be affected during construction by demolition, grading, foundation construction, structural work, and building finish work.

The Mitigated Alternative is designed to treat stormwater runoff and will create negligible flow or volume changes to the existing drainage. The design will not exceed the capacity of off-site drainage facilities. Pervious surfaces will be used wherever feasible while replacing existing impervious surfaces to provide stormwater infiltration treatment. Stormwater runoff from the site will eventually drain downstream to the Las Trampas Creek more than a quarter mile away. This report will showcase the collective effort taken to design and implement an effective and environmentally conscious SWCP.

This revised report responds to comments from Public Works. In this report and in the accompanying hydrology report for this Mitigated Alternative, no detention capacity is assumed in the C3 planters during the 10-year design storm. All stormwater control plans have been combined into this single report, which addresses street improvements as well. The report shows analysis by Parcels to demonstrate that each Parcel will provide C3 planters adequate to treat stormwater from that parcel. This is important to consider, since the project may be constructed in phases.

Hydro-modification for the entire Mitigated Alternative could be accommodated in one of two ways. First, it could be accommodated by the use of detention sufficient to capture the increase in volume during the 24-hour, 10-year design storm and smaller C.3 storm. Second, it could be accommodated by demolishing existing impervious surfaces to ensure no increase in impervious surface area. Accordingly, HEG proposed the following mitigation measure for the Project, which would apply equally to the Mitigated Alternative (see 6/26/2014 letter from HEG to Warren Lai, p. 13):

> No construction shall be permitted anywhere on the Project site unless the applicant demonstrates, to the satisfaction of the Director of Public Works Department, either of the following:
>
> (a) Upon completion of such construction, there will be sufficient detention capacity on the Project site to detain the incremental increase in stormflow volume that occurs during the 24-hour, 10 year design storm, which incremental increase is due to the increase in impervious surface above pre-project levels. This standard could be met with a detention vault with capacity for approximately 12,300 cubic feet of stormwater on Site B, through smaller detention vaults, tanks or other facilities on each site, or other means.
>
> (b) Upon completion of such construction, the total square footage of impervious surface area throughout the Project site will remain at or below pre-project levels.

This mitigation measure will assure that hydro-modification is accommodated for the Mitigated Alternative.

Sites A, B, and C will each be improved with new ingress/ egress, public improvements, utility improvements, and new multi-story mixed use or residential building over partially underground parking.

I.A. Parcel A

The existing site consists of the Sandpiper Apartment complex, multi-tenant office buildings and an undeveloped area. The site is relatively level and has onsite parking lots at the apartment complex and office buildings. The existing impervious area is roughly 53,230 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

The proposed area for Parcel A of Saranap Village will include additions and improvements on existing parcels in the unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will occur at the north side of Boulevard Way east of Saranap Avenue. The Mitigated Alternative site consists of existing Assessor's Parcel Numbers: 185-370-018, 185-370-010,185-370-012, and 185-370-033. The total proposed site will include an area of 63,373 ft^2.

I.B. Parcel B (including B1)

The existing site consists of the Sanctuary for Sufism Church and an onsite parking lot. The site is relatively level with existing impervious area of roughly 41,413 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

The proposed area for Parcel B of Saranap Village will include additions and improvements on existing parcels in the unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will occur at the south side of Boulevard Way east of Saranap Avenue. The Mitigated Alternative site consists of existing Assessor's Parcel Numbers: 185-370-018and 184-010-046. The total proposed site will include an area of 62,274 ft^2.

I.C. Parcel C

The existing site consists of an existing retail building and a paved parking lot. The site is relatively level with existing impervious area of roughly 14,908 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

The proposed area for Parcel C of Saranap Village is will include additions and improvements on existing parcels in unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will take place in areas along the south edge of Boulevard Way extending from site B1 to the southwest corner of Site C. The Mitigated Alternative site consists of existing Assessor Parcel Number 184-450-025. The total proposed site will include an area of 24,315 ft^2.

I.C. Street Improvements

The existing off site streets Boulevard Way and Saranap Avenue are proposed to be revised by adding parking, landscape islands, and converting the existing street into a two lane road with roundabouts. The site slopes from the west to the east along Boulevard Way and slopes north to south along Saranap Avenue. Slopes range from 1% to 3%. The approximate existing impervious surface area is 71,000 square feet within the existing public right-of-way. The actual portion of existing pavement to be removed and replaced below the bottom of existing asphalt concrete is approximately 35,500 SF, with the remaining paving to be overlayed or have new pavement installed above the bottom of the existing asphalt concrete. The landscape area increases from approximately 2100 SF to 7317 SF after construction within the public right-of-way. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

APPENDIX II.A

PRELIMINARY STORMWATER CONTROL PLAN

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

PARCEL A

July 14, 2015
Revised September 9, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

TABLE OF CONTENTS

I. **Mitigated Alternative Data** 1

II. **Setting** 2

- II.A. Mitigated Alternative Location and Description 2
- II.B. Existing Site Features and Conditions 2
- II.C. Opportunities and Constraints for Stormwater Control 2

III. **Low Impact Development Design Strategies** 3

- III.A. Optimization of Site Layout 3
- III.B. Use of Permeable Pavements 3
- III.C. Dispersal of Runoff to Pervious Areas 3
- III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control 3
  - III.D.1. Permeability of Site Soils 3
  - III.D.2. Potential Opportunities for Harvesting and Use 3
  - III.D.3. Harvesting and Use Feasibility Calculations 4
- III.E. Integrated Management Practices 4

IV. **Documentation of Drainage Design** 4

- IV.A. Descriptions of each Drainage Management Area 4
  - IV.A.1. Table of Drainage Management Areas 4
  - IV.A.2. Drainage Management Area Descriptions 5
- IV.B. Tabulation and Sizing Calculations 5
  - IV.B.1. Information Summary for IMP Design 5
  - IV.B.2. Areas Draining to IMPs 5

V. **Source Control Measures** 7

- V.A. Site activities and potential sources of pollutants 7
- V.B. Source Control Table 7
- V.C. Features, Materials, and Methods of Construction of Source Control BMPs 8

VI. **Stormwater Facility Maintenance** 8

- VI.A. Ownership and Responsibility for Maintenance in Perpetuity 8
  - VI.A.1. Commitment to Execute any Necessary Agreements 8
  - VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is Transferred 8
  - VI.A.3. Stormwater Facilities Operations and Maintenance Plan 8
- VI.B. Summary of Maintenance Requirements for Each Stormwater Facility 8

VII. **Construction Plan C.3 Checklist** 9

VIII. **Certifications—** 9

Tables

Table 1. Mitigated Alternative Data 1
Table 2. Assessment of Harvesting and Use (Toilet Flushing and Irrigation) 4
Table 3. Drainage Management Areas 4
Table 4. Alternative Compliance Summary 5
Table 5. IMP Design Summary 5
Table 6a, 6b, 6c. IMP Sizing Calculations 6
Table 7. Sources and Source Control Measures 7
Table 8. Construction Plan C.3 Checklist 9

Attachments

Figure 1 Contra Costa County Isohyetal Map B-166
Figure 2 Stormwater Treatment Plan Parcel A Exhibit

Note: final SWCP will include landscape plans and soils report.

This Stormwater Quality Control Plan was prepared using the template dated February 15, 2012.

I. MITIGATED ALTERNATIVE DATA

Table 1. Mitigated Alternative Data

Saranap Village Mitigated Alternative	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Application Submittal Date	September, 2013
Mitigated Alternative Location	Contra Costa County
Name of Developer	Hall Equities Group
Mitigated Alternative Phase No.	Saranap Village Parcel A
Mitigated Alternative Type and Description	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Mitigated Alternative Watershed	Las Trampas Creek Watershed
Total Mitigated Alternative Site Area	63,373 ft^2
Total Area of Land Disturbed	63,373 ft^2
Total New Impervious Surface Area	3,104 ft^2
Total Replaced Impervious Surface Area	53,230 ft^2
Total Pre-Mitigated Alternative Impervious Surface Area	53,230 ft^2
Total Post-Mitigated Alternative Impervious Surface Area	56,334 ft^2
50% Rule[*]	N/A
Mitigated Alternative Density	N/A
Applicable Special Mitigated Alternative Categories	N/A
Percent LID and non-LID treatment	100% LID**
HMP Compliance [†]	N/A

** At the request of the Owner, the Mitigated Alternative includes 100% LID treatment for Site A. However, there may be constraints in final design that require use of Non-LID treatment facilities in streets and/or sites, subject to the approval of County Public Works Department. These constraints may include utilities, parking, pedestrian, and ADA facilities. Every attempt will be made to include LID treatment.

II. SETTING

II.A. Mitigated Alternative Location and Description

This Stormwater Control Plan (SWCP) will address the provisions recommended for post construction stormwater control for Saranap Village Mitigated Alternative (the Mitigated Alternative) in accordance with the C.3 stormwater guidebook from Contra Costa County. The SWCP was based on research and environmental planning for water quality, and will showcase the steps taken to design an effective and environmentally conscious SWCP for post construction stormwater controls.

The proposed area for Parcel A of Saranap Village will include additions and improvements on existing parcels in the unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will occur at the north side of Boulevard Way east of Saranap Avenue. The Mitigated Alternative site consists of existing Accesors Parcel Numbers: 185-370-018, 185-870-012, 185-370-010, and 185-370-033. The total proposed site will include an area of 63,373 ft^2. The site will include new ingress/egresses, public improvements, utility improvements and a new multi-story building over parking.

Modifications to storm drainage will be very minimal during construction. Development will involve clearing and grubbing, use of heavy equipment, demolition of existing buildings, grinding of pavement & concrete, paving, grading and handling of a large variety of building materials. Stormwater runoff volumes may be affected during construction by demolition, grading, foundation construction, structural work and building finish work.

The Mitigated Alternative is designed to treat stormwater runoff and will create negligible flow or volume to the existing drainage. The design will not exceed the capacity of off-site drainage facilities. Pervious surfaces will be used wherever feasible while replacing existing impervious surfaces to provide stormwater infiltration treatment. Stormwater runoff from the site will eventually drain downstream to the Las Trampas Creek more than a quarter mile away. This report will showcase the collective effort taken to design and implement an effective and environmentally conscious SWCP.

II.B. Existing Site Features and Conditions

The existing site consists of the Sandpiper Apartment complex, multi-tenant office buildings and an undeveloped area. The site is relatively level and has onsite parking lots at the apartment complex and office buildings. The existing impervious area is roughly 53,230 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

II.C. Opportunities and Constraints for Stormwater Control

The primary challenge for stormwater treatment is the existence of impermeable soils (soil clay group D). Discharge of runoff by deep infiltration is not feasible due to the low permeability of the clay soils. Every effort has been made to use indirect filtration methods like Bio-Retention Flow Through Planters (FTP) for stormwater treatment. FTPs are used for treating building roofs, driveways, sidewalks and all proposed hardscape.

Total existing impervious area on the site is roughly 53,230 ft^2 and the proposed Mitigated Alternative will add roughly 3,104 ft^2 of impervious surface. As stated in the Mitigated Alternative Data Table K-1 of Contra Costa Clean Water Program for Stormwater C3 Guidebook, the 50% and 100% rules apply to our site. However, at the request of the owner, the Mitigated Alternative includes 100% LID treatment. After construction, the site will continue to drain downstream more than a quarter mile away to the Las Trampas Creek.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

Every effort has been made to limit the imperviousness of the Mitigated Alternative site. The existing site consists of a paved parking lot and buildings. The following site layout characteristics help reduce watershed impacts:

- The site design includes designing landscaped-based FTPs to collect runoff that would otherwise flow directly to the storm drain system. See section IV for additional descriptions.
- Landscape areas were added in additional impervious areas of the Mitigated Alternative. There is a minimal increase in impervious area from pre-Mitigated Alternative condition.
- The roof drains of the proposed building will discharge into a bio-retention FTPs located within the parcel boundary.

III.B. Use of Permeable Pavements

Conventional concrete and asphalt are used throughout the Mitigated Alternative site. Permeable pavements will be considered if their use can be deemed beneficial to the Mitigated Alternative and watershed. Areas designated for self-treatment will be called out on the SWQP.

III.C. Dispersal of Runoff to Pervious Areas

Runoff from the proposed improvements, wherever possible within good engineering practice, has been directed to pervious areas. To offset runoff to new areas that do not directly drain to pervious areas, existing pavement area runoff is proposed to be collected in FTPs. Refer to Figure 2 FTP for locations and size.

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control

III.D.1. Permeability of Site Soils

Though the actual saturated hydraulic permeability (Ksat) is unknown, given the high clay content of the soils and known data in nearby surrounding area, this Mitigated Alternative's Ksat is much less than 1.6 inches/hour. Typically high clay content is indicative of very low saturated hydraulic conductivity. Therefore stormwater treatment systems have been designed accordingly.

III.D.2. Potential Opportunities for Harvesting and Use

As most of the parcel is being occupied by a multi-story mixed used building, the opportunity to collect roof runoff and store that runoff is very limited. Although there is substantial roof area, the ability to gather, store and reuse is not feasible, due to the intricacies of the rooftop design and multi-level design. Besides the proposed building rooftop there are not much other opportunities for harvesting rainwater. The limited amount of at grade asphalt and sidewalk is split with a good percentage being within the public right of way. The remaining area is so limited that runoff volumes would be too small for any real reuse or benefit.

III.D.3. Harvesting and Use Feasibility Calculations

Table 2. Harvesting and Use Feasibility

A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*
Building or other Impervious Area Description	*Square feet of impervious surface*	*Site Area (Acres)*	*Uses and User Units*	*Toilet and Urinal Water Usage (gal/day)*	*Water Use per Acre (gal/day/ acre)*	*Required demand (gal/day /acre).*	*Is Mitigated Alternativee d Use > Required Demand? (Column F > Column G?)*	*Can runoff be piped to an irrigated area 2.5x the impervious area (Column B)?*	*Is there any othe consistent, Reliable deman for the quantity i Column G?*

New BLDG & Site	56,334	1.31	Residential/ Mixed Use 85 Units Per Acre	206	1,147	3,095	No	No	No

III.E. Integrated Management Practices

The Mitigated Alternative proposes to use treatment only bio-retention FTPs to meet the stormwater quality standards for the Mitigated Alternative.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 3. Drainage Management Areas

DMA Name	*Surface Type*	*Area (ft²)*
DMA-1	*Roof, landscaping, site hardscape*	*31,025*
DMA-2	*Roof, landscaping, site hardscape*	*7,728*
DMA-3	*Roof, landscaping, site hardscape*	*8,705*
DMA-4	*Roof, landscaping, site hardscape*	*6,936*
DMA-5	*Roof, landscaping, site hardscape*	*8,272*
DMA-6	*Roof, landscaping, site, hardscape*	*1,664*

IV.A.3. Drainage Management Area Descriptions

A summary of the treated impervious areas and method of treatment:

DMA-1, totaling 31,025 ft², will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-2, totaling 7,228 ft², will drain proposed courtyard to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-3, totaling 8,705 ft², will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-4, totaling 6,936 ft², will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-5, totaling 8,272 ft², will drain proposed rooftop and hardscape areas to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-6, totaling 1,482 ft2, will drain proposed entry hardscape to a bio-retention treatement FTP. This FTP discharges to the proposed storm drain system.

IV.B. Tabulation and Sizing Calculations

IV.B.1. Information Summary for IMP Design

Table 5. IMP Design Summary

Total Mitigated Alternative Area	63,373 ft²
Mean Annual Precipitation	22.0 in
IMPs Designed For:	Treatment and Hydro modification

IV.B.2. Areas Draining to IMPs

Table 6a – 6c. IMP Sizing Calculations

DMA Name	*DMA Area (square feet)*	*Post-Mit.Alt surf. type*	*DMA Runoff factor*	*DMA Area ▯ runoff factor*	*Soil Type:*	*IMP Name*			
					D	*IMP-1*			
1-PV	*27,649*	*Roof, landscaping*	*1.0*	*27,649*	*IMP Sizing factor*	*Rain Adjust-ment Factor*	*Minimum Area*	*Proposed Area*	
1-LS	*3,376*	*Landscape*	*0.1*	*338*					
		TOTAL		27,987	0.04	1.00	1120	1120	**IMP Area**

DMA Name	DMA Area (square feet)	Post-Mit Alternative surface type	DMA Runoff factor	DMA Area ▯ runoff factor	Soil Type: D	IMP Name IMP-2			
2-PV	6,441	Courtyard,landscaping	1.0	6,441	IMP Sizing factor	Rain Adjustment Factor	Minimum Area	Proposed Area	
2-LS	787	Landscape	0.1	79					
			TOTAL	6,519	0.04	1.00	261	261	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area ▯ runoff factor	Soil Type: D	IMP Name IMP-3			
3-PV	7,757	Roof, landscaping	1.0	7,757	IMP Sizing factor	Rain Adjustment Factor	Minimum Area	Proposed Area	
3-LS	948	Landscape	0.1	95					
		Total		7,852	0.04	1.00	315	315	IMP Area

					D	IMP-4			
4-PV	6,181	Roof, landscaping	1.0	6,181	IMP Sizing factor	Rain Adjustment Factor	Minimum Area	Proposed Area	
4-LS	755	Landscape	0.1	76					
		Total		6,257	0.04	1.00	250	250	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area runoff factor	Soil Type: D	IMP Name IMP-3			
5-PV	7,372	Roof ,landscaping	1.0	7,372	IMP Sizing factor	Rain Adjust-ment Factor	Minimum Area	Proposed Area	
5-LS	900	Landscape	0.1	90					
		TOTAL		7,462	0.04	1.00	298	298	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area ▯ runoff factor	Soil				
					D	IMP-3			
6-PV	1,482	Hardscape, landscaping	1.0	1,482	IMP Sizing factor	Rain Adjust-ment Factor	Minimum Area	Proposed Area	
6-LS	182	Landscape	0.1	18					
		Total		1,500	0.04	1.00	600	600	IMP Area

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

Since site activities will be of mixed use in nature and there will be an underground parking garage, transportation related emissions will not effect stormwater runoff. Activities such landscape maintenance, restaurant services, and residential & retail refuse disposal can be potential sources of pollutants.

V.B. Source Control Table

Table 7. Sources and Source Control Measures

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to River"	Maintain and periodically repaint or replace inlet markings and provide stormwater pollution prevention information to new site owners, lessors, o operators.
Landscape/Outdoor Pesticide Use	The timing and application methods of the irrigation system at the site have been designed so as to minimize the runoff of excess irrigation water into the stormwater conveyance system.	Maintain landscaping using minimum or no pesticides and provide IPM informatior to new owners, lessors, and operators.
Plazas, Sidewalks and Parking Garage	Sidewalks and other concrete areas drain to landscape areas where possible.	Sweeping plazas, sidewalks, and parking garage weekly.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

FTPs shall be per the C.3 Guidance Manual provided by Contra Costa Clean Water Program, 6th edition. Planters will feature 3 inch vertical distance from curb cut flow line to rim elevation of catch basins and provide for 6 inches of ponding. The FTP will contain 18 inches of Bio-retention soil mix per the C.3 Manual, and 12 inches of drain rock with an under drain. Construction of the planter must ensure the soil is not compacted as to negate the design infiltration rate of 5 in/hr.

VI. STORMWATER FACILITY MAINTENANCE

VI.A.1. Commitment to Execute any Necessary Agreements

Agree to provide any necessary easements or rights of entry to Contra Costa County for access and inspection of stormwater BMPs and to make provision of easements or rights of entry a condition of sale.

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is Transferred

The developers of Saranap Village agrees to operate and maintain the bio-retention planters until one of the following occurs: (1) Acceptance of maintenance responsibility by Contra Costa County, including the filing of all required easements and establishment of a special district or other permanent funding mechanism or (2) Recordation of Codes, Covenants, and Responsibilities or other agreement that runs with the land and requires future owners to provide and pay for maintenance of stormwater BMPs.

VI.A.3. Stormwater Facilities Operations and Maintenance Plan

The developers of Saranap Village will submit, with the application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

Maintenance of BMPs is imperative for adequate stormwater treatment. Maintenance is as follows:

Bio-Retention Flow Through Planters: These areas remove stormwater pollutants through a combination of overland flow through vegetation, surface detention, and filtration through soil. Frequent inspection and maintenance is required until vegetation becomes established. Thereafter, routine maintenance requirements are considered minimal.

Typical routine maintenance consists of the following:

- Inspect soils and plantings. Remove weeds, prune vegetation and replenish mulch as needed. Clear any obstructions and remove accumulation of sediment.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the ponding area for uniform percolation throughout. If portions of the area do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulation of sediment.
- Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.

- Abate any potential vectors by filling in holes in the ground and around the ponding area. If mosquito larvae are present and persistent, contact the Contra Costa County Vector Control District for information and advice. Mosquito larvricides should be applied only when absolutely necessary and then only by a licensed professional.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 8. Construction Plan C.3 Checklist

Stormwater Control Plan Page #	*BMP Description*	*See Plan Sheet #s*
11	Bio-retention FTPs to treat stormwater runoff.	C7
11	Bio-retention FTPs for proposed building improvements	C7

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2009-0074 and Order R2-2011-0083.FIGURE 1 Contra Costa County Isohyetal Map B-166

APPENDIX II.B

PRELIMINARY STORMWATER CONTROL PLAN

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

PARCEL B/B1

July 14, 2015
Revised September 9, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

TABLE OF CONTENTS

I. Mitigated Alternative Data 1

II. Setting 2

II.A. Mitigated Alternative Location and Description 2

II.B. Existing Site Features and Conditions 2

II.C. Opportunities and Constraints for Stormwater Control 2

III. Low Impact Development Design Strategies 3

III.A. Optimization of Site Layout 3

III.B. Use of Permeable Pavements 3

III.C. Dispersal of Runoff to Pervious Areas 3

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control 3

II.D.1. Permeability of Site Soils 3

II.D.2. Potential Opportunities for Harvesting and Use 3

II.D.3. Harvesting and Use Feasibility Calculations 4

III.E. Integrated Management Practice 4

IV. Documentation of Drainage Design 4

IV.A. Descriptions of each Drainage Management Area 4

IV.A.1. Table of Drainage Management Areas 4

IV.A.2. Drainage Management Area Descriptions 5

IV.B. Tabulation and Sizing Calculations 5

IV.B.1. Information Summary for IMP Design 5

IV.B.2. Areas Draining to IMPs 5

V. Source Control Measures 7

IV.A. Site activities and potential sources of pollutants 7

IV.B. Source Control Table 7

IV.C. Features, Materials, and Methods of Construction of Source Control BMPs 8

VI. Stormwater Facility Maintenance 8

VI.A. Ownership and Responsibility for Maintenance in Perpetuity 8

VI.A.1. Commitment to Execute any Necessary Agreements 8

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is Transferred 8

VI.A.3. Facilities Operations and Maintenance Plan 8

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility 8

VII. Construction Plan C.3 Checklist 10

VIII. Certifications 10

Tables

Table 1. Mitigated Alternative Data 1
Table 2. Assessment of Harvesting and Use (Toilet Flushing and Irrigation) 4
Table 3. Drainage Management Areas 4
Table 4. Alternative Compliance Summary 5
Table 5. IMP Design Summary 5
Table 6a, 6b, 6c. IMP Sizing Calculations. 6
Table 7. Sources and Source Control Measures 8
Table 8. Construction Plan C.3 Checklist 10

Attachments

Figure 1 Contra Costa County Isohyetal Map B 11
Figure 3 Stormwater Treatment Plan Parcel B Exhibit 12

Note: final SWCP will include landscape plans and soils report.

This Stormwater Control Plan was prepared using the template dated February 15, 2012.

I. MITIGATED ALTERNATIVE DATA

Table 1. Mitigated Alternative Data

Saranap Village Mitigated Alternative	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Application Submittal Date	September, 2013
Mitigated Alternative Location	Contra Costa County
Name of Developer	Hall Equities Group
Mitigated Alternative Phase No.	Saranap Village Parcel B/B1
Mitigated Alternative Type and Description	Mixed Use Residential and Retail Buildings and Associated Street improvements.
Mitigated Alternative Watershed	Las Trampas Creek Watershed
Total Mitigated Alternative Site Area	62,274 ft^2
Total Area of Land Disturbed	62,274 ft^2
Total New Impervious Surface Area	16,619 ft^2
Total Replaced Impervious Surface Area	41,413 ft^2
Total Pre-Mitigated Alternative Impervious Surface Area	41,413 ft^2
Total Post-Mitigated Alternative Impervious Surface Area	54,030 ft^2
50% Rule[*]	N/A
Mitigated Alternative Density	N/A
Applicable Special Mitigated Alternative Categories	N/A
Percent LID and non-LID treatment	100% LID **
HMP Compliance [†]	N/A

** At the request of the Owner, 100% LID is provided for Site B in the Mitigated Alternative. However, there may be constraints in final design that require use of Non-LID treatment facilities in streets and/or sites, subject to the approval of County Public Works Department. These constraints may include utilities, parking, pedestrian, and ADA facilities. Every attempt will be made to include LID treatment.

II. SETTING

II.A. Mitigated Alternative Location and Description

This Stormwater Control Plan (SWCP) will address the provisions recommended for post construction stormwater control for Saranap Village Mitigated Alternative (the Mitigated Alternative) in accordance with the C.3 stormwater guidebook from Contra Costa County. The SWCP was based on research and environmental planning for water quality, and will showcase the steps taken to design an effective and environmentally conscious SWCP for post construction stormwater controls.

The proposed area for Parcel B of Saranap Village will include additions and improvements on existing parcels in the unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will occur at the south side of Boulevard Way south of Saranap Avenue. The Mitigated Alternative site consists of existing Assessor's Parcel Numbers: 184-010-035 and 184-010-046. The total proposed site will include an area of 62,274 ft^2. The site will include new ingress/egresses, public improvements, utility improvements and a new multi-story building over parking.

Modifications to storm drainage will be very minimal during construction. Development will involve clearing and grubbing, use of heavy equipment, demolition of existing buildings, grinding of pavement & concrete, paving, grading and handling of a large variety of building materials. Stormwater runoff volumes may be affected during construction by demolition, grading, foundation construction, structural work and building finish work.

The Mitigated Alternative is designed to treat storm water runoff and create negligible flow or volume to the existing drainage. The design will not exceed the capacity of off-site drainage facilities. Pervious surfaces will be used wherever feasible while replacing existing impervious surfaces to provide stormwater infiltration treatment. Stormwater runoff from the site will eventually drain downstream to the Las Trampas Creek more than a quarter mile away. This report will showcase the collective effort taken to design and implement an effective and environmentally conscious SWCP.

II.B. Existing Site Features and Conditions

The existing site consists of the Sanctuary for Sufism Church and an onsite parking lot. With a narrow undeveloped "panhandle" to the south. A paved driveway and parking area is located at the westerly edge of this site. The site is relatively level with existing impervious area of roughly 41,413 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

II.C. Opportunities and Constraints for Stormwater Control

The primary challenge for stormwater treatment is the existence of impermeable soils (soil clay group D). Discharge of runoff by deep infiltration is not feasible due to the low permeability of the clay soils. Every effort has been made to use indirect filtration methods like Bio-Retention Flow through Planters (FTP) for stormwater treatment. FTPs are used for treating building roofs, driveways, sidewalks and all proposed hardscape.

100% of the impervious runoff will be treated in properly designed FTPs wherever feasible. Every available roof area is designed to drain to one or more of the perimeter FTPs. The SWCP delineates the specific Drainage Management Areas (DMA) for each FTP. These areas are coordinated with architectural and landscape plans.

Total proposed impervious area for the Mitigated Alternative will be roughly 54,030 ft^2, including all hardscape and rooftop area. As stated in the Mitigated Alternative Data Table K-1 of Contra Costa Clean Water Program for Stormwater C3 Guidebook, 75% rule applies to our site since the FAR ratio is greater than 4:1.However, at the request of the Owner, the Mitigated Alternative includes 100% LID treatment. After construction, the site eventually drains downstream to the Las Trampas Creek more than a quarter mile away.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

Every effort has been made to limit the imperviousness of the Mitigated Alternative site. The existing site consists of a paved parking lot and buildings. The following site layout characteristics help reduce watershed impacts:

- The site design includes designing landscaped-based FTPs to collect runoff that would otherwise flow directly to the storm drain system. See section IV for additional descriptions.
- Landscape areas were added in additional impervious areas of the Mitigated Alternative. There is a minimal increase in impervious area from pre-Mitigated Alternative condition.
- The roof drains of the proposed building will discharge into a bio-retention FTPs.

III.B. Use of Permeable Pavements

Conventional concrete and asphalt are used throughout the Mitigated Alternative site. Permeable pavements will be considered if their use can be deemed beneficial to the Mitigated Alternative and watershed. Areas designated for self-treatment will be called out on the SWCP.

III.C. Dispersal of Runoff to Pervious Areas

Runoff from the proposed improvements, wherever possible within good engineering practice, has been directed to pervious areas. To offset runoff to new areas that do not directly drain to pervious areas, existing pavement area runoff is proposed to be collected in FTPs. Refer to Figure 3 FTP for locations and size.

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control

III.D.1. Permeability of Site Soils

Though the actual saturated hydraulic permeability (Ksat) is unknown, given the high clay content of the soils and known data in nearby surrounding area, this Mitigated Alternative's Ksat is much less than 1.6inches/hour. Typically high clay content is indicative of very low saturated hydraulic conductivity. Therefore stormwater treatment systems have been designed accordingly.

III.D.2. Potential Opportunities for Harvesting and Use

As most of the parcel is being occupied by a multi-story mixed used building, the opportunity to collect roof runoff and store that runoff is very limited. Although there is substantial roof area, the ability to gather, store and reuse is not feasible, due to the intricacies of the rooftop design and multi-level design. Besides the proposed building rooftop there are not much other opportunities for harvesting rainwater. The limited amount of at grade asphalt and sidewalk is split with a good percentage being within the public right of way. The remaining area is so limited that runoff volumes would be too small for any reuse or benefit.

III.D.3. Harvesting and Use Feasibility Calculations

Table 2. Harvesting and Use Feasibility

A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*

Building or other Impervious Area Description	*Square feet of impervious surface*	*Acres*	*Uses and User Units*	*Toilet and Urinal Water Usage (gal/day)*	*Water Use per Acre (gal/day/ acre)*	*Required demand (gal/day /acre).*	*Is Mitigated Alternative ed Use > Required Demand? (Column F > Column G?)*	*Can runoff be piped to an irrigated area 2.5x the impervious area (Column B)?*	*Is there any other consistent, reliable demand for the quantity in Column G?*
New BLDG & Site	54,030	1.33	Residential, Mixed use 46 Units per Acre.	273	1520	4100	No	No	No

III.E. Integrated Management Practices

The Mitigated Alternative proposes to use treatment only FTPs to meet the stormwater quality standards for the improvements.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 3. Drainage Management Areas

DMA Name	*Surface Type*	*Area (ft²)*
DMA-1	*Roof, landscaping, site hardscape*	*26,356*
DMA-2	*Roof, landscaping, site hardscape*	*8,997*
DMA-3	*Roof, landscaping, site hardscape*	*12,993*
DMA-4	*Landscaping, site hardscape*	*5,645*
DMA-5	*Roof, landscaping, site hardscape*	*3,812*
DMA-6	*Roof, landscaping, site hardscape*	*3,255*

Summary of the replaced and treated impervious areas is below:

IV.A.3. Drainage Management Area Descriptions

DMA-1, totaling 26,356 ft^2, will drain proposed rooftop and site area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-2, totaling 8,997 ft^2, will drain proposed rooftop and site area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-3, totaling 12,993 ft^2, will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-4, totaling 5,645 ft^2, will drain proposed rooftop and site area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-5, totaling 3,812 ft^2, will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system

DMA-6, totaling 3,255 ft2, will drain proposed rooftop and site area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

IV.B. Tabulation and Sizing Calculations

IV.B.1. Information Summary for IMP Design

Table 5. IMP Design Summary

Total Mitigated Alternative Area	62,274 ft^2
Mean Annual Precipitation	22.0 in
IMPs Designed For:	Treatment Only

IV.B.2. Areas Draining to IMPs

Table 6a – 6c. IMP Sizing Calculations

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
1-PV	23,232	Roof landscaping	1.0	23,232	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
1-LS	3,124	Landscape	0.1	312					
			Total	23,544	0.04	1.00	942	942	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
2-PV	7,930	Roof landscaping	1.0	7,930	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
2-LS	1067	Landscape	0.1	107					
			Total	8037	0.04	1.00	321	321	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
3-PV	11,453	Roof landscaping	1.0	11,453	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
3-LS	1,540	Landscape	0.1	154					
			Total	11,607	0.04	1.00	464	464	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
4-PV	4,976	Roof landscaping	1.0	4,976	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
4-LS	669	Landscape	0.1	67					
			Total	5,043	0.04	1.00	202	202	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
5-PV	3,360	Roof landscaping	1.0	3,360	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
5-LS	452	Landscape	0.1	45					
			Total	3,405	0.04	1.00	136	136	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
6-PV	3,255	Roof landscaping	1.0	3,255	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
6-LS	438	Landscape	0.1	44					
			Total	3,299	0.04	1.00	132	132	IMP Area

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

Since site activities will be of mixed use in nature and there will be an underground parking garage, transportation related emissions will not affect stormwater runoff. Activities such landscape maintenance, restaurant services, and residential & retail refuse disposal can be potential sources of pollutants.

V.B. Source Control Table

Table 7. Sources and Source Control Measures

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to River"	Maintain and periodically repaint or replace inlet markings and provide stormwater pollution prevention information to new site owners, lessors, or operators.
Landscape/Outdoor Pesticide Use	The timing and application methods of the irrigation system at the site have been designed so as to minimize the runoff of excess irrigation water into the stormwater conveyance system.	Maintain landscaping using minimum or no pesticides and provide IPM information to new owners, lessors, and operators.
Plazas, Sidewalks and Parking Garage	Sidewalks and other concrete areas drain to landscape areas where possible.	Sweeping plazas, sidewalks, and parking garage weekly.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

FTPs shall be per the C.3 Guidance Manual provided by Contra Costa Clean Water Program, 6th edition. Planters will feature 3 inch vertical distance from curb cut flow line to rim elevation of catch basins and provide for 6 inches of ponding. The FTP will contain 18 inches of Bio-retention soil mix per the C.3 Manual, and 12 inches of drain rock with an under drain. Construction of the planter must ensure the soil is not compacted as to negate the design infiltration rate of 5 in/hr.

VI. STORMWATER FACILITY MAINTENANCE

VI.A.1. Commitment to Execute any Necessary Agreements

Agree to provide any necessary easements or rights of entry to Contra Costa County for access and inspection of stormwater BMPs and to make provision of easements or rights of entry a condition of sale.

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is transferred

The developers of Saranap Village agrees to operate and maintain the bio-retention FTPs until one of the following occurs: (1) Acceptance of maintenance responsibility by Contra Costa County, including the filing of all required easements and establishment of a special district or other permanent funding mechanism or (2) Recordation of Codes, Covenants, and Responsibilities or other agreement that runs with the land and requires future owners to provide and pay for maintenance of stormwater BMPs.

VI.A.3. Stormwater Facilities Operations and Maintenance Plan

The developers of Saranap Village will submit, with the application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

Maintenance of BMPs is imperative for adequate stormwater treatment. Maintenance is as follows:

Bio-Retention Flow Through Planters: These areas remove stormwater pollutants through a combination of overland flow through vegetation, surface detention, and filtration through soil. Frequent inspection and maintenance is required until vegetation becomes established. Thereafter, routine maintenance requirements are considered minimal.

Typical routine maintenance consists of the following:

- Inspect soils and plantings. Remove weeds, prune vegetation and replenish mulch as needed. Clear any obstructions and remove accumulation of sediment.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the ponding area for uniform percolation throughout. If portions of the area do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulation of sediment.
- Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.

- Abate any potential vectors by filling in holes in the ground and around the ponding area. If mosquito larvae are present and persistent, contact the Contra Costa County Vector Control District for information and advice. Mosquito larvricides should be applied only when absolutely necessary and then only by a licensed professional.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 8. Construction Plan C.3 Checklist

Stormwater Control Plan Page #	*BMP Description*	*See Plan Sheet #s*
12	Bio-retention FTPs to treat storm water runoff.	C11.2
12	Bio-retention FTPs for proposed building improvements	C11.2

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2009-0074 and Order R2-2011-0083.

APPENDIX II.C

PRELIMINARY STORMWATER CONTROL PLAN

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

PARCEL C

July 14, 2015
Revised September 9, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

TABLE OF CONTENTS

I. Mitigated Alternative Data 1

II. Setting 2

II.A. Mitigated Alternative Location and Description 2

II.B. Existing Site Features and Conditions 2

II.C. Opportunities and Constraints for Stormwater Control 2

III. Low Impact Development Design Strategies 3

III.A. Optimization of Site Layout 3

III.B. Use of Permeable Pavements 3

III.C. Dispersal of Runoff to Pervious Areas 3

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control 3

II.D.1. Permeability of Site Soil 3

II.D.2. Potential Opportunities for Harvesting and Use 3

II.D.3. Harvesting and Use Feasibility Calculations 4

III.E. Integrated Management Practice 4

IV. Documentation of Drainage Design 4

IV.A. Descriptions of each Drainage Management Area 4

IV.A.1. Table of Drainage Management Areas 4

IV.A.2. Drainage Management Area Descriptions 5

IV.B. Tabulation and Sizing Calculations 5

IV.B.1. Information Summary for IMP Design 5

IV.B.2. Areas Draining to IMPs 5

V. Source Control Measures 6

IV.A. Site activities and potential sources of pollutants 6

IV.B. Source Control Table 7

IV.C. Features, Materials, and Methods of Construction of Source Control BMPs 7

VI. Stormwater Facility Maintenance 8

VI.A. Ownership and Responsibility for Maintenance in Perpetuity 8

VI.A.1. Commitment to Execute any Necessary Agreements 8

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is Transferred 8

VI.A.3. Stormwater Facilities Operations and Maintenance Plan 8

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility 8

VII. Construction Plan C.3 Checklist 8

VIII. Certifications 8

Tables

Table 1. Mitigated Alternative Data 1
Table 2. Assessment of Harvesting and Use (Toilet Flushing and Irrigation) 4
Table 3. Drainage Management Areas 4
Table 4. Alternative Compliance Summary 5
Table 5. IMP Design Summary 5
Table 6a, 6b, 6c. IMP Sizing Calculations. 6
Table 7. Sources and Source Control Measures 7
Table 8. Construction Plan C.3 Checklist 9

Attachments

Figure 1 Contra Costa County Isohyetal Map B 10
Figure 4 Storm Water Treatment Plan Parcel C Exhibit 11

Note: final SWCP will include landscape plans and soils report.

This Stormwater Control Plan was prepared using the template dated February 15, 2012.

I. MITIGATED ALTERNATIVE DATA

Table 1. Mitigated Alternative Data

Saranap Village Mitigated Alternative	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Application Submittal Date	September, 2013
Mitigated Alternative Location	Contra Costa County
Name of Developer	Hall Equities Group
Mitigated Alternative Phase No.	Saranap Village Parcel C
Mitigated Alternative Type and Description	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Mitigated Alternative Watershed	Las Trampas Creek Watershed
Total Mitigated Alternative Site Area	24,315 ft^2
Total Area of Land Disturbed	24,315 ft^2
Total New Impervious Surface Area	7,507 ft^2
Total Replaced Impervious Surface Area	14,908 ft^2
Total Pre-Mitigated Alternative Impervious Surface Area	14,908 ft^2
Total Post-Mitigated Alternative Impervious Surface Area	21,581 ft^2
50% Rule[*]	N/A
Mitigated Alternative Density	N/A
Applicable Special Mitigated Alternative Categories	N/A
Percent LID and non-LID treatment	100% LID **
HMP Compliance [†]	N/A

**At the request of the Owner, 100% LID Treatment is provided for Site C in the Mitigated Alternative. However, there may be constraints in final design that require the use of Non-LID treatment facilities in streets and/or sites, subject to the approval of County Public Works Department. These constraints may include utilities, parking, pedestrian and ADA facilities. Every attempt will be made to include LID treatment.

II. SETTING

II.A. Mitigated Alternative Location and Description

This Stormwater Control Plan (SWCP) will address the provisions recommended for post construction stormwater control for Saranap Village in accordance with the C.3 stormwater guidebook from Contra Costa County. The SWCP was based on research and environmental planning for water quality, and will showcase the steps taken to design an effective and environmentally conscious SWCP for post construction stormwater controls.

The proposed area for Parcel C of Saranap Village is will include additions and improvements on existing parcels in unincorporated area of Contra Costa County adjacent to Walnut Creek. Improvements will take place in areas along the south edge of Boulevard Way located southwest of site B/B1. The Mitigated Alternative site consists of existing Accessor Parcel Number 184-450-025. The total proposed site will include an area of 24,315 ft^2. The site will include new ingress/egresses, public improvements, utility improvements and a new multi-story building over parking.

Modifications to storm drainage will be very minimal during construction. Development will involve clearing and grubbing, use of heavy equipment, demolition of existing buildings, grinding of pavement & concrete, paving, grading and handling of a large variety of building materials. Stormwater runoff volumes may be affected during construction by demolition, grading, foundation construction, structural work and building finish work.

The Mitigated Alternative is designed to treat stormwater runoff and create negligible flow or volume to the existing drainage. The design will not exceed the capacity of off-site drainage facilities. Pervious surfaces will be used wherever feasible while replacing existing impervious surfaces to provide stormwater infiltration treatment. Stormwater runoff from the site will eventually drain downstream to the Las Trampas Creek more than a half mile away. This report will showcase the collective effort taken to design and implement an effective and environmentally conscious SWCP.

II.B. Existing Site Features and Conditions

The existing site consists of an existing retail building and a paved parking lot. The site is relatively level with existing impervious area of roughly 14,908 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

II.C. Opportunities and Constraints for Stormwater Control

The primary challenge for stormwater treatment is the existence of impermeable soils (soil clay group D). Discharge of runoff by deep infiltration is not feasible due to the low permeability of the clay soils. Every effort has been made to use indirect filtration methods like Bio-Retention Flow Through Planters (FTP) for stormwater treatment. FTPs are used for treating building roofs, driveways, sidewalks and all proposed hardscape.

We intend to treat 100% in properly designed FTPs and impervious surfaces wherever feasible. Every available roof area is designed to drain to one or more of the perimeter FTPs. The SWCP delineates the specific Drainage Management Areas (DMA) for each FTP. These areas are coordinated with architectural and landscape plans.

Total existing impervious area on the site is roughly 14,908 ft^2. As stated in the Mitigated Alternative Data Table K-1 of Contra Costa Clean Water Program for Stormwater C3 Guidebook, 50% rule applies to our site since the FAR ratio is greater than 2:1.However, at the request of the owner, the Mitigated Alternative includes 100% LID treatment. After construction, the site eventually drains downstream to the Las Trampas Creek more than a half mile away.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

Every effort has been made to limit the imperviousness of the Mitigated Alternative site. The existing site consists of a paved parking lot and buildings. The following site layout characteristics help reduce watershed impacts:

- The site design includes designing landscaped-based FTPs to collect runoff that would otherwise

flow directly to the storm drain system. See section IV for additional descriptions.

- Landscape areas were added in additional impervious areas of the Mitigated Alternative. There is a minimal increase in impervious area from pre-Mitigated Alternative condition.
- The roof drains of the proposed building will discharge into a bio-retention FTPs located within the parcel boundary.

III.B. Use of Permeable Pavements

Conventional concrete and asphalt are used throughout the Mitigated Alternative site. Permeable pavements will be considered if their use can be deemed beneficial to the Mitigated Alternative and watershed. Areas designated for self-treatment will be called out on the SWCP.

III.C. Dispersal of Runoff to Pervious Areas

Runoff from the proposed improvements, wherever possible within good engineering practice, has been directed to pervious areas. To offset runoff to new areas that do not directly drain to pervious areas, existing pavement area runoff is proposed to be collected in FTPs. Refer to Figure 4 FTP for locations and size.

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control

III.D.1. Permeability of Site Soils

Though the actual saturated hydraulic permeability (Ksat) is unknown, given the high clay content of the soils and known data in nearby surrounding area, this Mitigated Alternative's Ksat is much less than 1.6inches/hour. Typically high clay content is indicative of very low saturated hydraulic conductivity. Therefore stormwater treatment systems have been designed accordingly.

III.D.2. Potential Opportunities for Harvesting and Use

As most of the parcel is being occupied by a multi-story mixed used building, the opportunity to collect roof runoff and store that runoff is very limited. Although there is substantial roof area (20,725ft^2) the ability to gather, store and reuse is not feasible, due to the intricacies of the rooftop design and multi-level design. Besides the proposed building rooftop there are not much other opportunities for harvesting rainwater. The limited amount of at grade asphalt and sidewalk is split with a good percentage being within the public right of way. The remaining area is so limited that runoff volumes would be too small for any reuse or benefit.

III.D.2. Potential Opportunities for Harvesting and Use

As most of the parcel is being occupied by a multi-story mixed used building, the opportunity to collect roof runoff and store that runoff is very limited. Although there is substantial roof area (19,080 ft^2) the ability to gather, store and reuse is not feasible, due to the intricacies of the rooftop design and multi-level design. Besides the proposed building rooftop there are not much other opportunities for harvesting rainwater. The limited amount of at grade asphalt and sidewalk is split with a good percentage being within the public right of way. The remaining is so limited that runoff volumes would be too small for any reuse or benefits.

III.D.3. Harvesting and Use Feasibility Calculations

Table 2. Harvesting and Use Feasibility

A	B	C	D	E	F	G	H	I	J

Building or other Impervious Area Description	*Square Feet of impervious surface*	*Acres*	*Uses and User Units*	*Toilet and Urinal Water Usage (gal/day)*	*Water Use per Acre (gal/day/ acre)*	*Required demand (gal/day /acre).*	*Is Mitigated Alternative ed Use > Required Demand? (Column F > Column G?)*	*Can runoff be piped to an irrigated area 2.5x the impervious area (Column B)?*	*Is there any other consistent, reliable demand for the quantity in Column G?*
New BLDG & Site	21,581	0.56	Residential, Mixed use 43 Units per Acre	273	1520	4100	No	No	No

III.E. Integrated Management Practices

The Mitigated Alternative proposes to use treatment only FTPs to meet the stormwater quality standards for the improvements.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 3. Drainage Management Areas

DMA Name	*Surface Type*	*Area (ft²)*
DMA-1	*Roof, landscaping, site hardscape*	*9,664*
DMA-2	*Roof, landscaping, site hardscape*	*4,056*
DMA-3	*Roof, landscaping, site hardscape*	*1,861*
DMA-4	*Roof, landscaping, site hardscape*	*1,862*
DMA-5	*Roof, landscaping, site hardscape*	*3,747*
DMA-6	*Roof, landscaping, site hardscape*	*2,640*

A summary of the replaced and treated impervious areas:

IV.A.3. Drainage Management Area Descriptions

DMA-1, totaling 9,664 ft^2, will drain proposed rooftop area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-2, totaling 4,046 ft^2, will drain proposed rooftop and site hardscape area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-3, totaling 1,861 ft^2, will drain proposed rooftop and site hardscape area to a bio-retention treatment FTP. This FTP discharges to the proposed new storm drain system.

DMA-4, totaling 1,882 ft2, will drain proposed rooftop and site hardscape area to a bio-retention FTP. This FTP discharges to the proposed new storm drain system.

DMA-5, totaling 4,222 ft2, will drain proposed rooftop and site hardscape area to a bio-retention FTP. This FTP discharges to the proposed new storm drain system.

DMA-6, totaling 2,640 ft2, will drain hardscape and site landscape area to a bio-retention FTP. This FTP discharges to the proposed new storm drain system.

IV.B. Tabulation and Sizing Calculations

IV.B.1. Information Summary for IMP Design

Table 5. IMP Design Summary

Total Mitigated Alternative Area (ft^2)	24,315 SF
Mean Annual Precipitation	22.0 in
IMPs Designed For:	Treatment Only

IV.B.2. Areas Draining to IMPs

Table 6a – 6b. IMP Sizing Calculations

DMA Name	DMA Area (ft²)	Post-Mit Alt surface type	DMA Runoff factor	DMA Area ▯ runoff factor	Soil Type: D	IMP Name: IMP-1			
1-PV	*8,576*	*Concrete or asphalt*	*1.0*	*8,576*	*IMP Sizing factor*	*Rain Adjust-ment factor*	*Minimum Area*	*Proposed Area*	
1-LS	*1088*	*Landscape*	*0.1*	*109*					
		Total	**Tot**	8,685	0.04	1.00	347	347	**IMP Area**

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
2-PV	3,590	Roof landscaping	1.0	3,590	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
2-LS	456	Landscape	0.1	46					
			Total	3,636	0.04	1.00	145	145	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
3-PV	1,651	Roof landscaping	1.0	1,651	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
3-LS	210	Landscape	0.1	21					
			Total	1,672	0.04	1.00	67	67	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
4-PV	1,670	Roof landscaping	1.0	1,670	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
4-LS	212	Landscape	0.1	21					
			Total	1,691	0.04	1.00	68	68	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
5-PV	3,747	Roof landscaping	1.0	3,747	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
5-LS	475	Landscape	0.1	48					
			Total	3,795	0.04	1.00	152	152	IMP Area

DMA Name	DMA Area (square feet)	Post-Mit. Alternative surface type	DMA Runoff factor	DMA Area	Soil Type: D	IMP Name IMP-3			
6-PV	2,343	Roof landscaping	1.0	2,343	IMP Sizing factor	Rain Adjustment factor	Minimum Area	Proposed Area	
6-LS	247	Landscape	0.1	30					
			Total	2,373	0.04	1.00	95	95	IMP Area

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

Since site activities will be of mixed use in nature and there, transportation related emissions will not affect stormwater runoff. Activities such landscape maintenance, restaurant services, and residential & retail refuse disposal can be potential sources of pollutants.

V.B. Source Control Table

Table 7. Sources and Source Control Measures

Potential source of runoff pollutants	Permanent source control BMPs	Operational source control BMPs
Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to River"	Maintain and periodically repaint or replace inlet markings and provide stormwater pollution prevention information to new site owners, lessors, or operators.
Landscape/Outdoor Pesticide Use	The timing and application methods of the irrigation system at the site have been designed so as to minimize the runoff of excess irrigation water into the stormwater conveyance system.	Maintain landscaping using minimum or no pesticides and provide IPM information to new owners, lessors, and operators.
Plazas, Sidewalks	Sidewalks and other concrete areas drain to landscape areas where possible.	Sweeping plazas and sidewalks weekly.

V.C. Features, Materials, and Methods of Construction of Source Control BMPs

FTPs shall be per the C.3 Guidance Manual provided by Contra Costa Clean Water Program, 6th edition. Planters will feature 3 inch vertical distance from curb cut flow line to rim elevation of catch basins and provide for 6 inches of ponding. The FTP will contain 18 inches of Bio-retention soil mix per the C.3 Manual, and 12 inches of drain rock with an under drain. Construction of the planter must ensure the soil is not compacted as to negate the design infiltration rate of 5 in/hr.

VI. STORMWATER FACILITY MAINTENANCE

VI.A.1. Commitment to Execute any Necessary Agreements

Agree to provide any necessary easements or rights of entry to Contra Costa County for access and inspection of stormwater BMPs and to make provision of easements or rights of entry a condition of sale.

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is transferred

The developers of Saranap Village agrees to operate and maintain the bio-retention FTPss until one of the following occurs: (1) Acceptance of maintenance responsibility by Contra Costa County, including the filing of all required easements and establishment of a special district or other permanent funding mechanism or (2) Recordation of Codes, Covenants, and Responsibilities or other agreement that runs with the land and requires future owners to provide and pay for maintenance of stormwater BMPs.

VI.A.3. Stormwater Facilities Operations and Maintenance Plan

The developers of Saranap Village will submit, with the application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

Maintenance of BMPs is imperative for adequate stormwater treatment. Maintenance is as follows:

Bio-Retention Flow Through Planters: These areas remove stormwater pollutants through a combination of overland flow through vegetation, surface detention, and filtration through soil. Frequent inspection and maintenance is required until vegetation becomes established. Thereafter, routine maintenance requirements are considered minimal.

Typical routine maintenance consists of the following:

- Inspect soils and plantings. Remove weeds, prune vegetation and replenish mulch as needed. Clear any obstructions and remove accumulation of sediment.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the ponding area for uniform percolation throughout. If portions of the area do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulation of sediment.
- Examine the vegetation to insure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove invasive vegetation.
- Abate any potential vectors by filling in holes in the ground and around the ponding area. If mosquito larvae are present and persistent, contact the Contra Costa County Vector Control District for information and advice. Mosquito larvricides should be applied only when absolutely necessary and then only by a licensed professional.

VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 8. Construction Plan C.3 Checklist

Page #	*BMP Description*	*Stormwater Control Plan See Plan Sheet #s*

13	Bio-retention FTPs for proposed building improvements	C7
13	Bio-retention FTPs to treat storm water r	C7

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2009-0074 and Order R2-2011-0083.

APPENDIX II.D

PRELIMINARY STORMWATER CONTROL PLAN

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

STREET IMPROVEMENTS

July 14, 2015
Revised September 9, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

TABLE OF CONTENTS

I. Mitigated Alternative Data 1

II. Setting 2

II.A. Mitigated Alternative Location and Description 2

II.B. Existing Site Features and Conditions 2

II.C. Opportunities and Constraints for Stormwater Control 2

III. Low Impact Development Design Strategies 2

III.A. Optimization of Site Layout 2

III.B. Use of Permeable Pavements 2

III.C. Dispersal of Runoff to Pervious Areas 3

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control 3

II.D.1. Permeability of Site Soils 3

II.D.2. Potential Opportunities for Harvesting and Use 3

IV. Source Control Measures 4

IV.A. Site activities and potential sources of pollutants 4

IV.B. Source Control Table 4

IV.C. Features, Materials, and Methods of Construction of Source Control BMPs 4

V. Stormwater Facility Maintenance 5

VI.A.1. Commitment to Execute any Necessary Agreements 5

VI.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is Transferred 5

VI.A.3. Stormwater Facilities Operations and Maintenance Plan 5

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility 5

VI. Certifications 5

Tables

Table 1. Mitigated Alternative Data 1

Table 2. Sources and Source Control Measures 4

Attachments

Figure 1 Contra Costa County Isohyetal Map B
Figure 5 Storm Water Treatment Plan Streets Exhibit

Note: final SWCP will include landscape plans and soils report.

This Stormwater Control Plan was prepared using the template dated February 15, 2012.

I. MITIGATED ALTERNATIVE DATA

Table 1. Mitigated Alternative Data

Saranap Village Mitigated Alternative	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Application Submittal Date	September, 2013
Mitigated Alternative Location	Contra Costa County
Name of Developer	Hall Equities Group
Mitigated Alternative Phase No.	Associated Street Improvements
Mitigated Alternative Type and Description	Mixed Use Residential and Retail Buildings and Associated Street Improvements
Mitigated Alternative Watershed	Las Trampas Creek Watershed
Total Mitigated Alternative Site Area	81,196 ft^2
Total Area of Pavement Rehabilitation	71,000 ft^2
Total Reduced Impervious Surface Area	-2,180 ft^2
Total Replaced Impervious Surface Area	71,000 ft^2
Total Pre-Mitigated Alternative Impervious Surface Area	73,180 ft^2
Total Post-Mitigated Alternative Impervious Surface Area	71,000 ft^2
50% Rule[*]	N/A
Mitigated Alternative Density	N/A
Applicable Special Mitigated Alternative Categories	Pavement Rehabilitation within Existing Footprint
Percent LID and non-LID treatment	100% LID**
HMP Compliance [†]	N/A

** At the request of the Owner, 100% LID treatment is included in the street areas of the Mitigated Alternative. However, there may be constraints in final design that require use of Non-LID treatment facilities in streets and/or sites, subject to approval of County Public Works Department. These constraints may include utilities, parking, pedestrian and ADA facilities. Every attempt will be made to include LID treatment.

II. SETTING

II.A. Mitigated Alternative Location and Description

This Stormwater Control Plan (SWCP) will address the provisions recommended for post construction stormwater control for Saranap Village Mitigated Alternative (the Mitigated Alternative) in accordance with the C.3 stormwater guidebook from Contra Costa County. The SWCP was based on research and environmental planning for water quality, and will showcase the steps taken to design an effective and environmentally conscious SWCP for post construction stormwater controls.

The proposed area for Saranap Village Street Improvements will include additional landscaping, some pavement complete replacement and some pavement repair or no disturbance below the existing base rock layer. Improvements will take place on Boulevard Way and Saranap Ave adjacent to Saranap Village. The Mitigated Alternative site consists of primarily existing street ROW with minor dedications and vacations. The total proposed site will include an area of 81,196 ft^2. The street Mitigated Alternative includes reduction to impervious area and pavement rehabilitation within the existing public right of way to the structural section. Additional landscape bulbs and islands and parking is being added within existing ROW.

The design will not exceed the capacity of off-site drainage facilities. Pervious surfaces will be used wherever feasible while replacing existing impervious surfaces to provide stormwater infiltration treatment. Stormwater runoff from the site will eventually drain downstream to the Las Trampas Creek more than a quarter mile away. This report will showcase the collective effort taken to design and implement an effective and environmentally conscious SWCP.

II.B. Existing Site Features and Conditions

The existing streets consist of primarily pavement and sidewalks with minimal landscaping. The site slopes to the east along Boulevard Way and south along Saranap Ave with existing impervious area of roughly 73,180 ft^2. Mean annual precipitation for this area is 22.0 inches according to attached Figure 1 – Contra Costa County Isohyetal Map B-166.

II.C. Opportunities and Constraints for Stormwater Control

The primary challenge for stormwater treatment is the existence of impermeable soils (soil clay group D). Discharge of runoff by deep infiltration is not feasible due to the low permeability of the clay soils.

This Mitigated Alternative complies with pavement rehabilitation within existing Right of Way according to the Contra Costa StormwaterC.3 Guidebook.

The impervious area is reduced by 2,180 SF through the use of bulbs, landscape planters and roundabouts.

Total proposed impervious area is roughly 71,000 ft^2. The actual portion of existing pavement to be removed and replaced below the bottom of existing asphalt concrete is approximately 35,500 SF, with the remaining paving to be overlayed or have new paving installed above the bottom of existing asphalt concrete. The landscape area increases from approximately 2100 SF to 7,317 SF after construction within the public ROW. The site eventually drains downstream to the Las Trampas Creek more than a quarter mile away.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

Every effort has been made to limit the imperviousness of the Mitigated Alternative site by adding additional landscaping. The following site layout characteristics help reduce watershed impacts:

- Additional Landscape Planters along the Right of Way (ROW) where pavement currently exists
- Landscape bulbs and islands adjacent to new diagonal parking where pavement currently exists
- Roundabouts with Landscaping

III.B. Use of Permeable Pavements

Conventional concrete and asphalt are used throughout the Mitigated Alternative site. Permeable pavements will be considered if their use can be deemed beneficial to the Mitigated Alternative and watershed. Areas designated for self-treatment will be called out on the SWCP.

III.C. Dispersal of Runoff to Pervious Areas

Runoff from the proposed improvements, wherever possible within good engineering practice, is typically directed to pervious areas. Street pavement Rehabilitation Mitigated Alternatives within existing right of ways are not subject to this condition.

III.D. Feasibility Assessment of Harvesting and Use for Treatment and Flow-Control

III.D.1. Permeability of Site Soils

Though the actual saturated hydraulic permeability (Ksat) is unknown, given the high clay content of the soils and known data in nearby surrounding area, this Mitigated Alternative's Ksat is much less than 1.6inches/hour. Typically high clay content is indicative of very low saturated hydraulic conductivity.

III.D.2. Potential Opportunities for Harvesting and Use

The site is a street road rehabilitation Mitigated Alternative within existing right of way thus is not subject to this requirement.

IV. SOURCE CONTROL MEASURES

IV.A. Site activities and potential sources of pollutants

Since site activities will be of mixed use in nature and there, transportation related emissions will not affect stormwater runoff. Activities such landscape maintenance, restaurant services, and residential & retail refuse disposal can be potential sources of pollutants.

IV.B. Source Control Table

Table 2. Sources and Source Control Measures

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to River"	Maintain and periodically repaint or replace inlet markings and provide stormwater pollution prevention information to new site owners, lessors, or operators.
Landscape/Outdoor Pesticide Use	The timing and application methods of the irrigation system at the site have been designed so as to minimize the runoff of excess irrigation water into the stormwater conveyance system.	Maintain landscaping using minimum or no pesticides and provide IPM information to new owners, lessors, and operators.
Plazas, Sidewalks	Sidewalks and other concrete areas drain to landscape areas where possible.	Sweeping plazas and sidewalks weekly.

IV.C. Features, Materials, and Methods of Construction of Source Control BMPs

FTPs shall be per the C.3 Guidance Manual provided by Contra Costa Clean Water Program, 6th edition.

V. STORMWATER FACILITY MAINTENANCE

V.A.1. Commitment to Execute any Necessary Agreements

Agree to provide any necessary easements or rights of entry to Contra Costa County for access and inspection of stormwater BMPs and to make provision of easements or rights of entry a condition of sale.

V.A.2. Statement Accepting Responsibility for Operation and Maintenance until Responsibility is transferred

The developers of Saranap Village agrees to operate and maintain the bio-retention FTP's until one of the following occurs: (1) Acceptance of maintenance responsibility by Contra Costa County, including the filing of all required easements and establishment of a special district or other permanent funding mechanism or (2) Recordation of Codes, Covenants, and Responsibilities or other agreement that runs with the land and requires future owners to provide and pay for maintenance of stormwater BMPs.

V.A.3. Stormwater Facilities Operations and Maintenance Plan

The developers of Saranap Village will submit, with the application for building permits, a draft Stormwater Facilities Operation and Maintenance Plan including detailed maintenance requirements and a maintenance schedule.

V.B. Summary of Maintenance Requirements for Each Stormwater Facility

Maintenance of BMPs is imperative for adequate stormwater treatment. Maintenance is as follows:

Typical routine maintenance consists of the following:

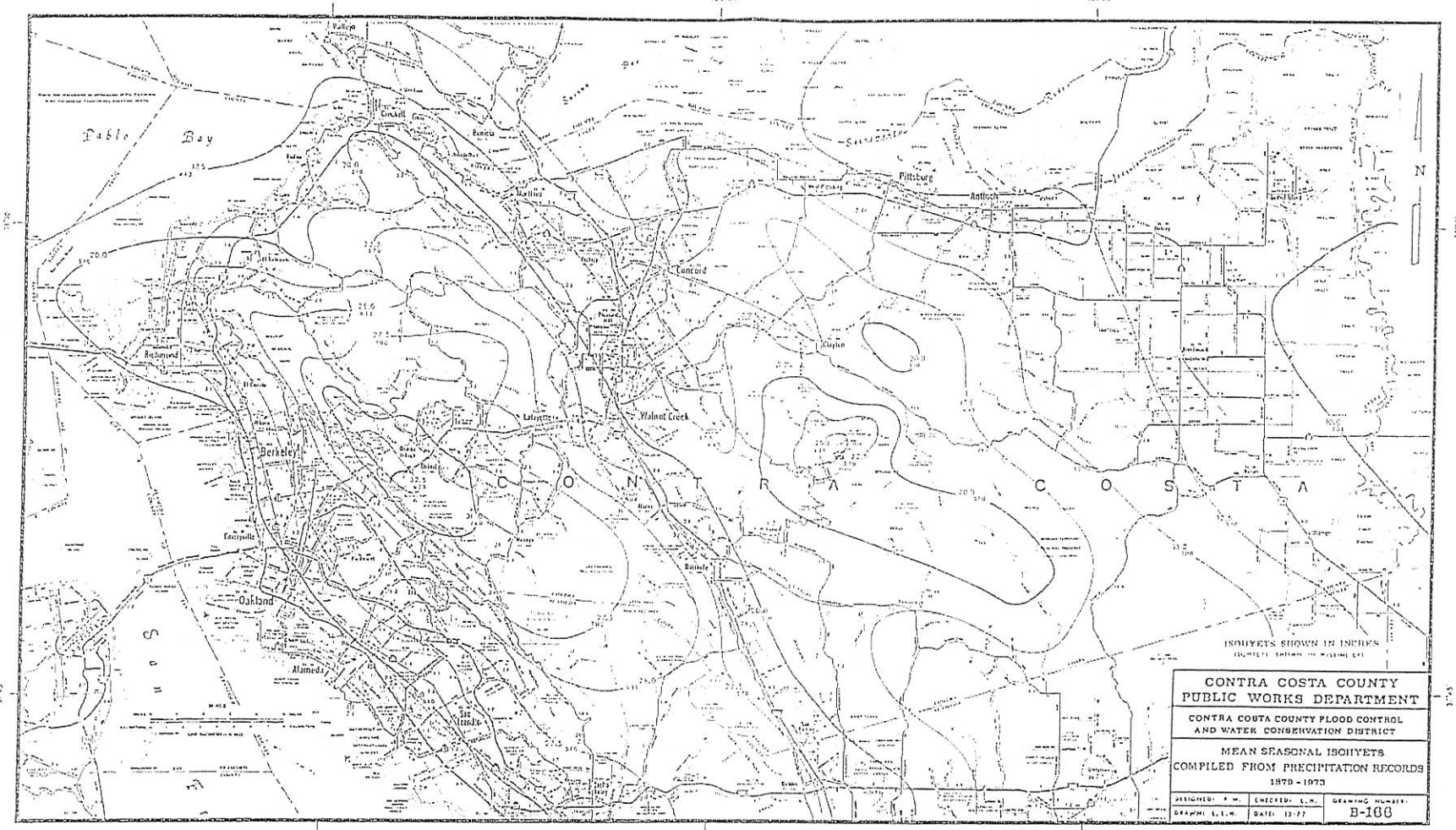
- Inspect soils and plantings. Remove weeds, prune vegetation and replenish mulch as needed.
    - Clear any obstructions and remove accumulation of sediment.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Abate any potential vectors by filling in holes in the ground and around the ponding area. If mosquito larvae are present and persistent, contact the Contra Costa County Vector Control District for information and advice. Mosquito larvricides should be applied only when absolutely necessary and then only by a licensed professional.

Routine sweeping of sidewalks and pavement areas per Contra Costa County Standards

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2009-0074 and Order R2-2011-0083.

FIGURE 1 Contra Costa County Isohyetal Map B-166

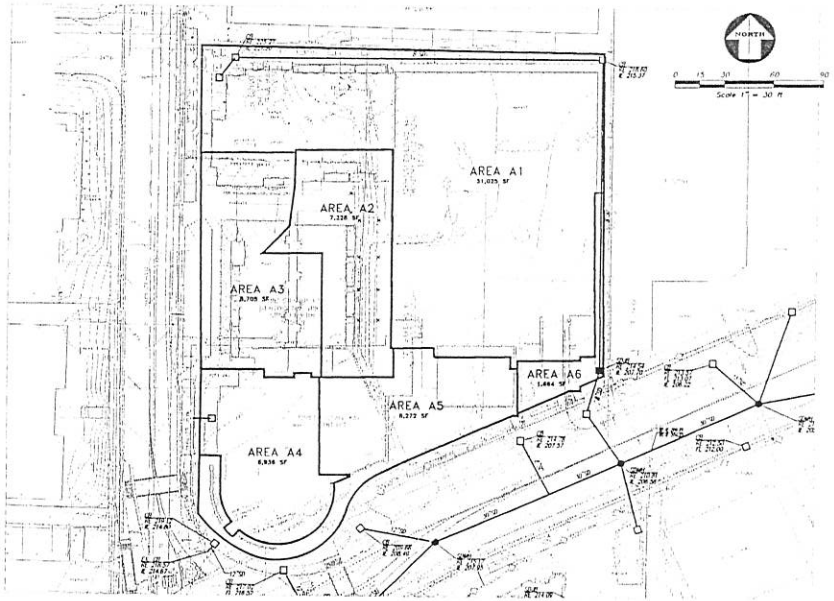


EXISTING SWTP CONDITIONS

DEVELOPMENT AREA 'A'

LEGEND EXISTING CONDITIONS

	AREA (SF)	% TOT AREA
IMPERVIOUS PAVEMENT AREA	38,186	61%
IMPERVIOUS ROOF TOP AREA	15,887	25%
LANDSCAPE AREA	8,030	14%
TOTAL	62,103	100%



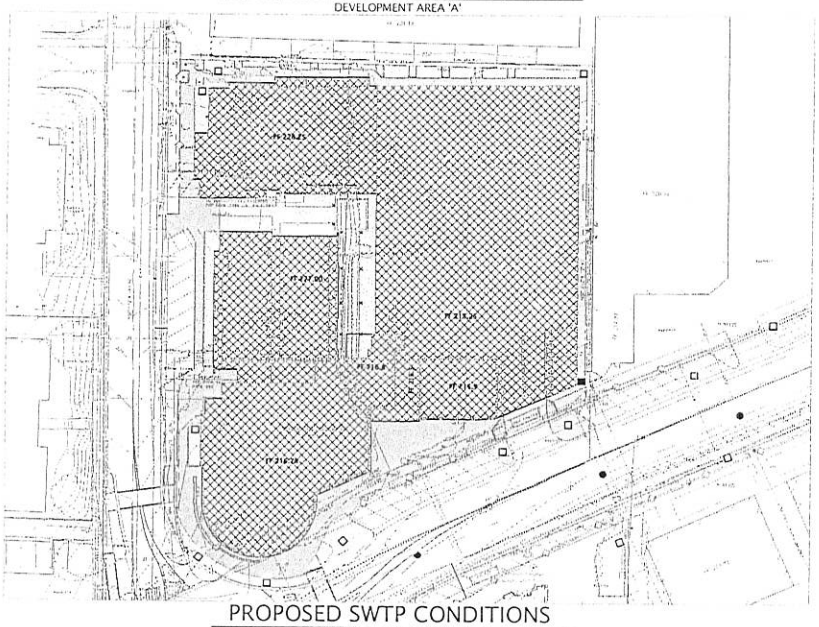
TREATMENT PLANTERS

DEVELOPMENT AREA 'A'

TREATMENT PLANTERS - Sub-Area BMP Summary

AREA ID#	TRIBUTARY AREA (SF)	IMPERVIOUS AREA (SF)	IMPERVIOUS AREA EQUIVALENT	BMP PROVIDED	BMP SIZE (SF)
1	31,025	27,649	31,025	PLANTER	
2	7,228	6,441	7,228	PLANTER	
3	8,705	7,757	8,705	PLANTER	
4	6,936	6,181	6,936	PLANTER	
5	8,272	7,372	8,272	PLANTER	
6	1,664	1,482	1,664	PLANTER	
TOTAL	63,830	56,887	56,887		3,312*

*NOTE: BMP SIZES AND CONNECTIONS TO DRAINAGE AREAS WILL BE CONFIRMED IN FINAL DESIGN. BMP AREA EXCEEDS 4.5% OF IMPERVIOUS AREA.

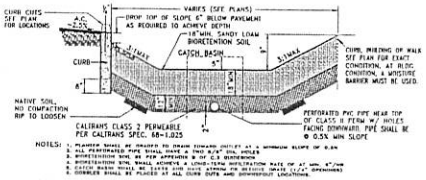


PROPOSED SWTP CONDITIONS

DEVELOPMENT AREA 'A'

LEGEND PROPOSED CONDITIONS

	AREA (SF)	% TOT AREA
TRIBUTARY AREA LIMITS		
PROPERTY AREA LIMITS		
IMPERVIOUS PAVEMENT DRAINING TO BIO-RETENTION AREA	14,984	5%
IMPERVIOUS ROOF TOP DRAINING TO BIO-RETENTION AREA	48,716	89%
LANDSCAPE AREA	2,948	4%
BIO-RETENTION AREA	1,152	2%
TOTAL	63,916	100%



NOTES:
1. PLANTER BASINS ARE DESIGNED TO DRAIN TOWARD OUTLET AT A MINIMUM SLOPE OF 0.5%
2. ALL PERFORATED PIPE SHALL HAVE A TWO 0.25" DIA. HOLES
3. BIORETENTION SOIL AS PER APPENDIX B OF C.3 GUIDEBOOK
4. BIORETENTION SOIL SHALL ACHIEVE A LONG-TERM INFILTRATION RATE OF AT MIN. 5"/HR
5. CURB CUTS SHALL BE PLACED TO ALLOW FOR DESIGN INFLOW (SEE PLAN DRAWINGS)
6. CURBLIP SHALL BE PLACED AT ALL CURB CUTS AND DOWNSPOUT LOCATIONS.

STORM WATER TREATMENT PLANTER - TYPICAL SECTION

N.T.S.

DRAFT DESIGN - SUBJECT TO MODIFICATION

NO.	REVISION	BY	NO.	REVISION	BY
△	NOVEMBER 8, 2013	TC	△		
△	JANUARY 17, 2014	TC	△		
△	FEBRUARY 21, 2014	TC	△		
△			△		
△			△		

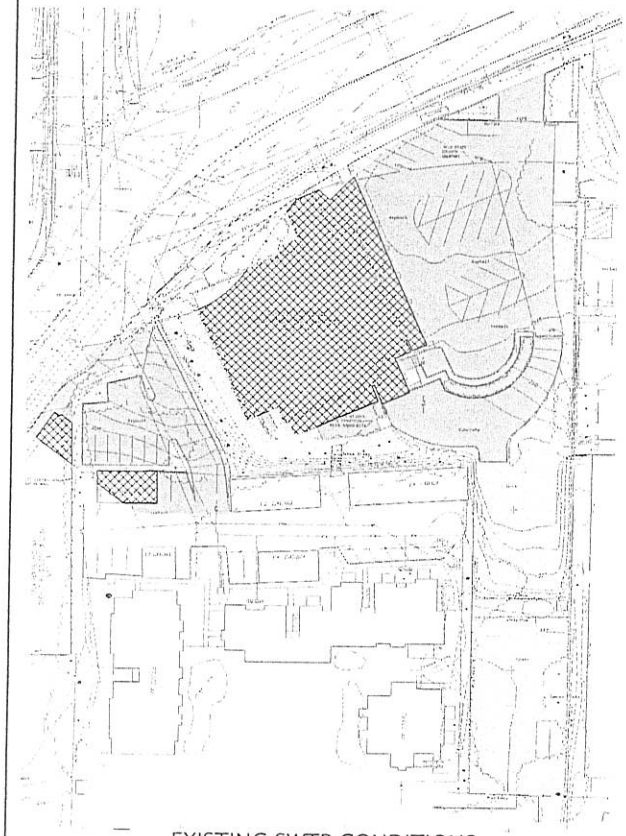
KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

PRELIMINARY DEVELOPMENT PLAN
STORM WATER TREATMENT PLAN - SITE A
OF
BOULEVARD WAY AND SARANAP AVENUE
FOR
HALL EQUITIES

CONTRA COSTA COUNTY CALIFORNIA

DATE	JULY 14, 2015
SCALE	1" = 10'
DRAWN BY	MC
JOB NO.	A12540-3
SHEET	C7
OF	SHEETS

Z:\2012\A12540-3\A12540-3 PR.dwg 7/13/2015 12:18:53 PM

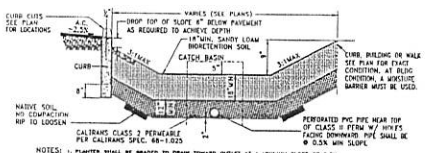


EXISTING SWTP CONDITIONS

DEVELOPMENT AREA 'B'

LEGEND EXISTING CONDITIONS

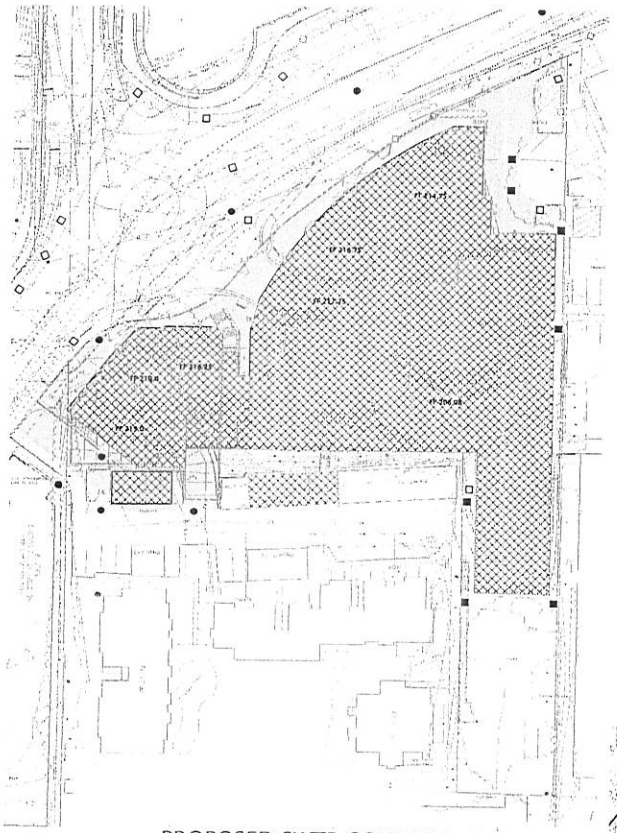
		AREA (SF)	% TOT. AREA
	TRIBUTARY AREA LIMITS		
	IMPERVIOUS PAVEMENT DRAINING TO BIO-RETENTION AREA	27,633	42%
	IMPERVIOUS ROOF TOP DRAINING TO BIO-RETENTION AREA	13,900	22%
	LANDSCAPE AREA	23,522	36%
	TOTAL	65,055	100%



NOTES:
1. PLANTER SHALL BE GRADED TO DRAIN TOWARD OUTLET AT A MINIMUM SLOPE OF 0.5%
2. ALL PERFORATED PIPE SHALL HAVE A TWO 5/8" DIA. HOLES
3. BIORETENTION SOIL BE PER APPENDIX B OF C.S. BIORETENTION.
4. BIORETENTION SOIL SHALL ATTAINT A LONG-TERM INFILTRATION RATE OF AT MIN. 5"/HR
5. CATCH BASIN SHALL BE SAFER AND HAVE ATRIUM OR BEEHIVE GRATE (1/2" OPENINGS)
6. CURBLES SHALL BE PLACED AT ALL CURB CUTS AND DOWNSPOUT LOCATIONS.

STORM WATER TREATMENT PLANTER – TYPICAL SECTION

N. T. S.

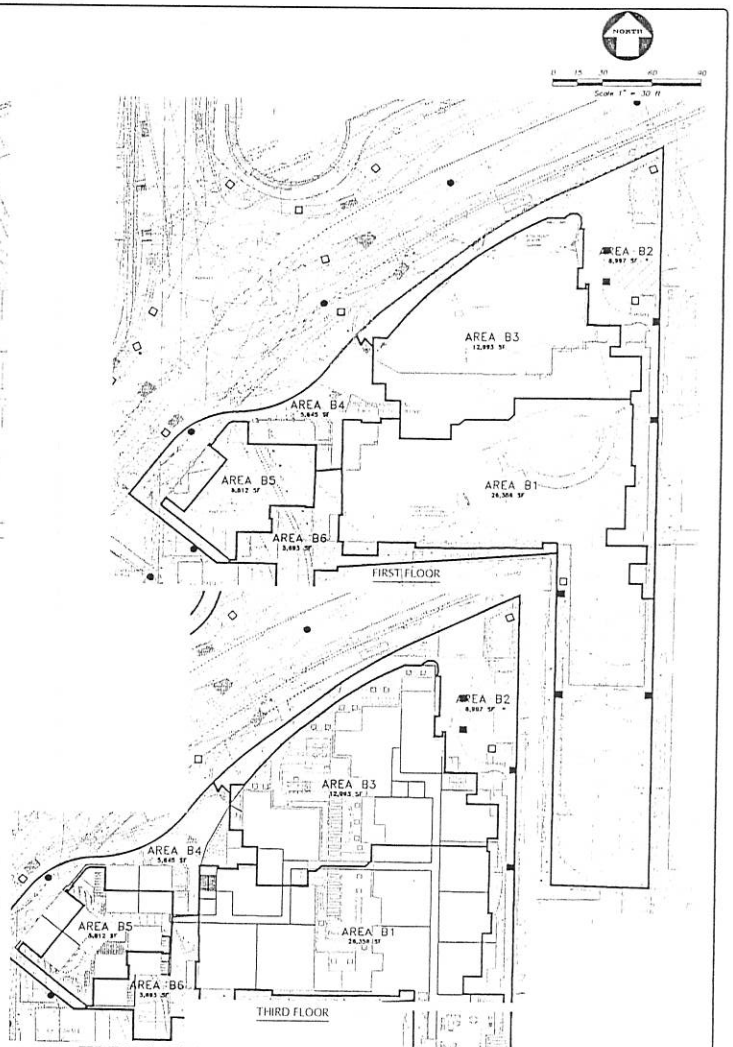


PROPOSED SWTP CONDITIONS

DEVELOPMENT AREA 'B'

LEGEND PROPOSED CONDITIONS

		AREA (SF)	% TOT. AREA
	TRIBUTARY AREA LIMITS		
	PROPERTY AREA LIMITS		
	IMPERVIOUS PAVEMENT	19,900	32%
	IMPERVIOUS ROOF TOP	38,900	61%
	LANDSCAPE AREA	2,622	5%
	BIO-RETENTION AREA	1,133	2%
	TOTAL	62,455	100%



TREATMENT PLANTERS

DEVELOPMENT AREA 'B'

TREATMENT PLANTERS - Sub-Area BMP Summary

AREA ID#	TRIBUTARY AREA (SF)	IMPERVIOUS AREA (SF)	IMPERVIOUS AREA EQUIVALENT	BMP PROVIDED	BMP SIZE (SF)
B1	26,356	23,232	23,232	PLANTER	
B2	8,997	7,930	7,930	PLANTER	
B3	12,993	11,453	11,453	PLANTER	
B4	5,645	4,976	4,976	PLANTER	
B5	3,812	3,360	3,360	PLANTER	
B6	3,693	3,255	3,255	PLANTER	
TOTAL	61,496	54,211	54,211		2,750

*NOTE: BMP SIZES AND CONNECTIONS TO DRAINAGE AREAS WILL BE CONFIRMED IN FINAL DESIGN. BMP AREA EXCEEDS 4.5% OF IMPERVIOUS AREA.

DRAFT DESIGN – SUBJECT TO MODIFICATION

NO.	REVISION	BY	NO.	REVISION	BY
△	NOVEMBER 8, 2013	EC	△		
△	JANUARY 17, 2014	EC	△		
△	FEBRUARY 21, 2014	EC	△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

PRELIMINARY DEVELOPMENT PLAN

STORM WATER TREATMENT PLAN – SITE B

OF

BOULEVARD WAY AND SARANAP AVENUE

FOR

HALL EQUITIES

CONTRA COSTA COUNTY CALIFORNIA

DATE	JULY 13, 2015
SCALE	1" = 50'
DESIGNER	MC
JOB NO.	K12549-3
SHEET	C7
OF	11 SHEETS

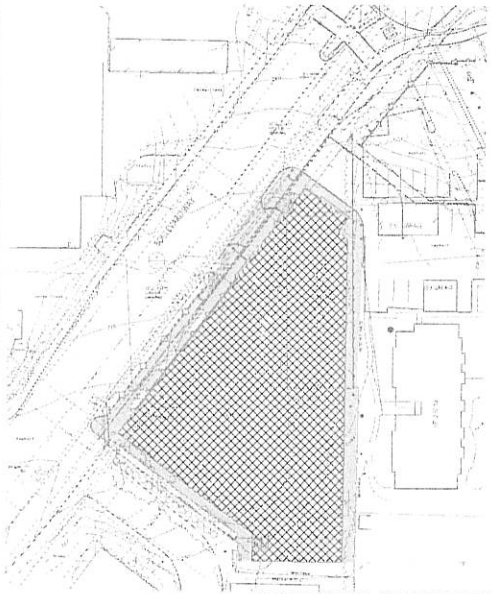
Z:\2012\K12549-3\K12549-3 PK.dwg 7/13/2015 12:19:53 PM

EXISTING SWTP CONDITIONS

DEVELOPMENT AREA 'C'

LEGEND EXISTING CONDITIONS

	AREA (SF)	% TOT. AREA
TRIBUTARY AREA LIMITS		
IMPERVIOUS PAVEMENT DRAINING TO BIO-RETENTION AREA	10,065	41%
IMPERVIOUS ROOFTOP DRAINING TO BIO-RETENTION AREA	5,409	22%
LANDSCAPE AREA	9,110	37%
TOTAL	24,584	100%

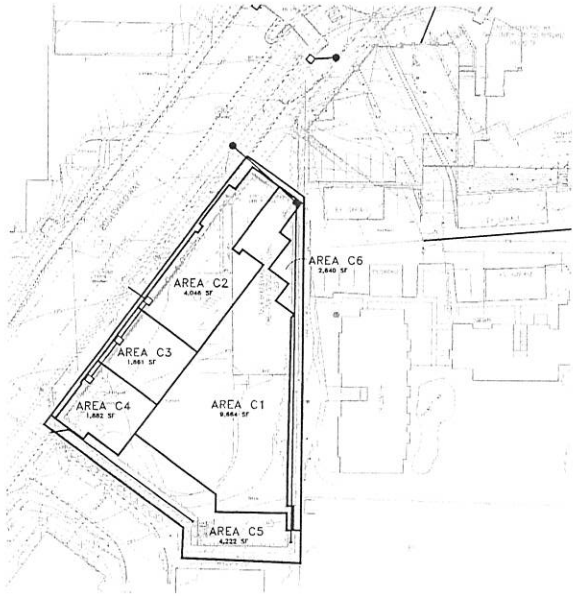


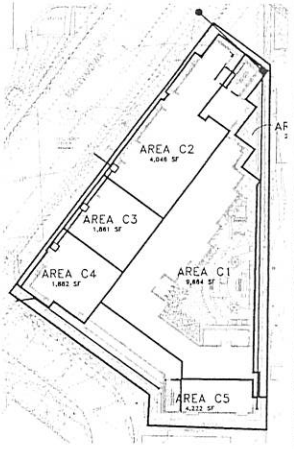
PROPOSED SWTP CONDITIONS

DEVELOPMENT AREA 'C'

LEGEND PROPOSED CONDITIONS

	AREA (SF)	% TOT. AREA
TRIBUTARY AREA LIMITS		
IMPERVIOUS PAVEMENT DRAINING TO BIO-RETENTION AREA	4,186	14%
IMPERVIOUS ROOFTOP DRAINING TO BIO-RETENTION AREA	19,080	78%
LANDSCAPE AREA	1,276	5.0%
BIO-RETENTION AREA	695	3.0%
TOTAL	25,237	100%





2ND FLOOR

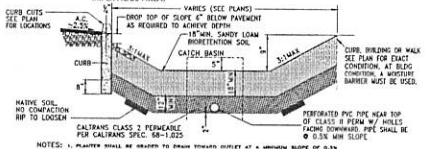
TREATMENT PLANTERS

DEVELOPMENT AREA 'C'

TREATMENT PLANTERS - Sub-Area BMP Summary

AREA ID#	TRIBUTARY AREA (SF)	IMPERVIOUS AREA (SF)	IMPERVIOUS AREA EQUIVALENT	BMP PROVIDED	BMP SIZE (SF)
1	9,664	8,576	8,576	PLANTER	
2	4,046	3,590	3,590	PLANTER	
3	1,861	1,651	1,651	PLANTER	
4	1,882	1,670	1,670	PLANTER	
5	4,222	3,747	3,747	PLANTER	
6	2,640	2,343	2,343	PLANTER	
TOTAL	24,315	21,581	21,581		875

*NOTE: BMP SIZES AND CONNECTIONS TO DRAINAGE AREAS WILL BE CONFIRMED IN FINAL DESIGN. BMP AREA EXCEEDS 4.5% OF IMPERVIOUS AREA.



NOTES:
1. PLANTER SHALL BE GRADED TO DRAIN TOWARD OUTLET AT A MINIMUM SLOPE OF 0.5%
2. ALL PERFORATED PIPE SHALL HAVE A MIN 3/4" DIA. HOLES
3. BIORETENTION SOIL BE PER APPENDIX B OF C.3 GUIDEBOOK
4. BIORETENTION SOIL SHALL ACHIEVE A LONG-TERM INFILTRATION RATE OF AT MIN. 5"/HR
5. CATCH BASIN SHALL BE 24X36 AND HAVE GRATE OR RECEIVE GRATE (1/4" OPENINGS)
6. CURBS SHALL BE PLACED AT ALL CURB CUTS AND DOWNSPOUT LOCATIONS.

STORM WATER TREATMENT PLANTER - TYPICAL SECTION

N.T.S.

DRAFT DESIGN - SUBJECT TO MODIFICATION

NO.	REVISION	BY	NO.	REVISION	BY
△	NOVEMBER 8, 2013	TC	△		
△	JANUARY 17, 2014	TC	△		
△	FEBRUARY 21, 2014	TC	△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

PRELIMINARY DEVELOPMENT PLAN

STORM WATER TREATMENT PLAN - SITE C

OF

BOULEVARD WAY AND SARANAP AVENUE

FOR

HALL EQUITIES

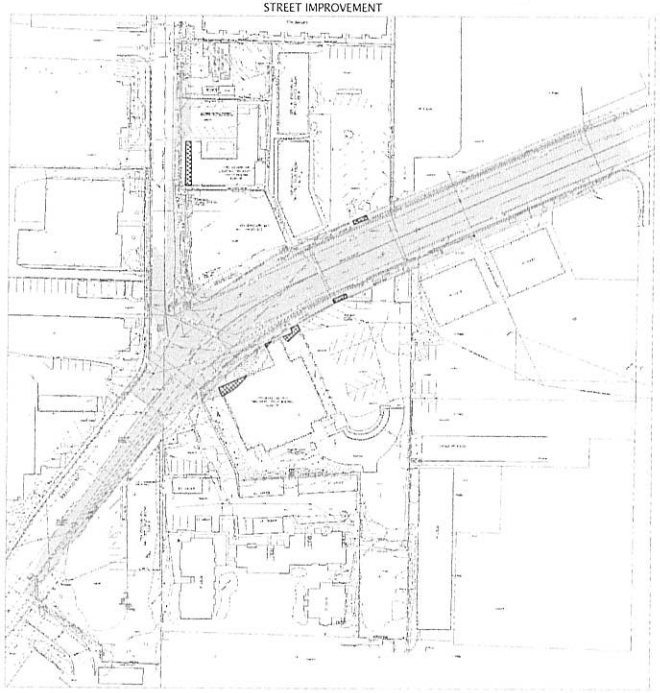
CONTRA COSTA COUNTY CALIFORNIA

DATE	JULY 14, 2015
SCALE	1" = 30'
DESIGNER	MC
JOB NO.	A12549-3
SHEET	C7
OF	11 SHEETS

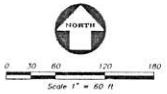
Z:\2012\A12549-3\A12549-3 PG.dwg 7/13/2015 12:19:53 PM

EXISTING SWTP CONDITIONS

STREET IMPROVEMENT

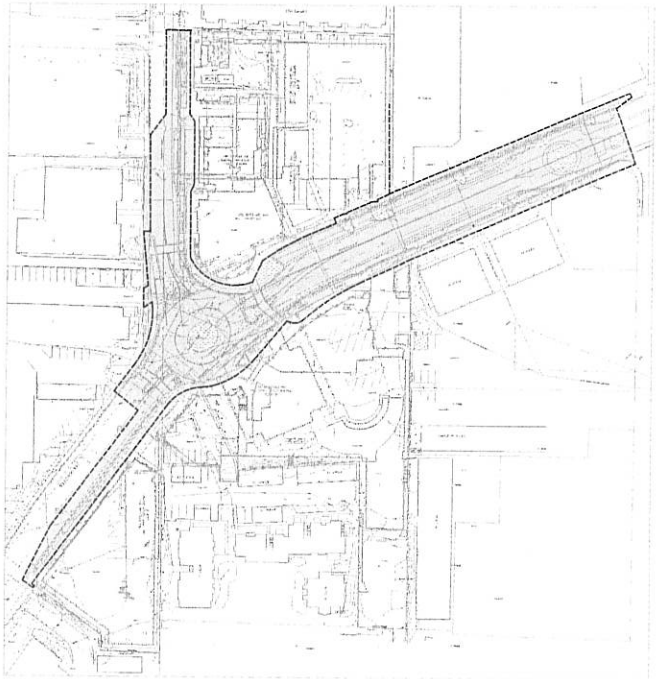


LEGEND EXISTING CONDITIONS	AREA (SF)	% TOT. AREA
IMPERVIOUS PAVEMENT AREA	73,180	97%
LANDSCAPE AREA	2,100	3%
TOTAL	75,280	100%



PROPOSED SWTP CONDITIONS

STREET IMPROVEMENT



LEGEND PROPOSED CONDITIONS	AREA (SF)	% TOT. AREA
IMPERVIOUS PAVEMENT AREA	73,869	90.97%
LANDSCAPE AREA	7,317	9.03%
TOTAL	81,196	100%

NOTE: BMP SIZES AND CONNECTIONS TO DRAINAGE AREAS WILL BE CONFIRMED IN FINAL DESIGN. BMP AREA EXCEEDS 4.5% OF IMPERVIOUS AREA.

DRAFT DESIGN - SUBJECT TO MODIFICATION

NO.	REVISION	BY	NO.	REVISION	BY
△	NOVEMBER 8, 2013	TC	△		
△	JANUARY 17, 2014	TC	△		
△	FEBRUARY 23, 2014	TC	△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

PRELIMINARY DEVELOPMENT PLAN

STORM WATER TREATMENT PLAN

OF

BOULEVARD WAY AND SARANAP AVENUE

FOR

HALL EQUITIES

CONTRA COSTA COUNTY CALIFORNIA

DATE	JULY 13, 2015
SCALE	1" = 50'
DESIGNER	MF
JOB NO.	A12549-3
SHEET	C8
OF	11 SHEETS

Z:\2012\A12549-3\A12549-3 PS.dwg 7/13/2015 12:19:53 PM

HYDROLOGY AND HYDRAULICS REPORT

For

SARANAP VILLAGE MITIGATED ALTERNATIVE

July 14, 2015

Saranap Village
Hall Equities Group
1855 Olympic Blvd, Walnut Creek, CA 94596

SWCP Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551
Chuck McCallum, PE
925-245-8788

Contents

Executive Summary.....3

Introduction.....6

Mitigated Alternative Site and Mitigated Alternative. 6

Design Goal to Eliminate Potential Drainage Impacts.....7

Section I: Existing On-site Topography and Drainage Patterns 8

Section 2: Rational Method Runoff Coefficients.....9

Section 3: Effect of Mitigated Alternative on Downstream Facilities.....10

Section 4: Summary and Recommendation.....10

Attachments

Appendix 1----- Existing Hydrology Calculations
Appendix 2----- Proposed Hydrology Calculations
Appendix 3----- SWHM Analysis
Appendix 4----- Achieving Zero Increase
Figure 1----- Overall Existing Hydrology Plan
Figure 2----- Overall Proposed Hydrology Plan
Figure 3----- Hydrology Plan

Executive Summary

This document addresses the hydrology of the Saranap Village Mitigated Alternative located at the intersection of Boulevard Way and Saranap Avenue, on the same site as the original Project. This document consists of:

- This Executive Summary,
- A report documenting the analysis of stormflows using the Contra Costa County Rational Method,
- Appendices 1 and 2 containing the calculations for existing and proposed watershed hydrology using the Rational Method,
- Appendix 3 documenting the analysis of stormflows using the Contra County Small Watershed Hydrograph Method (SWHM), and
- Appendix 4 discussing the possibility of achieving a zero increase goal.

The Mitigated Alternative Site is located near Walnut Creek, in the Saranap area of unincorporated Contra Costa County (Figure 1). The Mitigated Alternative Site consists of privately owned Sites A, B (including B1), C and the public right of way along Boulevard Way and Saranap Avenue that fronts Sites A, B and C. Off-site improvements are also proposed along Boulevard Way and Saranap Avenue.

The Mitigated Alternative includes 196 multi-family units and approximately 22,261 square feet (gross leasable area) of non-residential uses including neighborhood retail, grocery, restaurant, coffee shop, bank, bar, and fitness club uses. Roadway improvements will occur in Boulevard Way and Saranap Avenue, and will result in adding bulb outs, street parking and other landscaping features such as the proposed traffic circle along Boulevard Way. Onsite development will occur within a total area of 4.59 acres. Onsite street improvements will occupy an area of 1.11 acres, while offsite improvements of 0.69 acres will take place. The design includes a demolition plan for existing structures and facilities. The Mitigated Alternative will maintain existing pervious landscaped areas in key locations, add additional landscaping, and provide C.3 treatment throughout the Mitigated Alternative Site.

The Mitigated Alternative Site and the area of offsite improvements contribute flow to a tributary area of approximately 100 acres. Flows from that tributary area are collected in an existing 60" storm drain pipe in Flora Avenue, which drains to Las Trampas Creek approximately one half mile southeast of the Mitigated Alternative Site. Appendix Figure 1, "Overall Existing Hydrology Plan" (Sheet C12.1), depicts the existing overall watershed area. Proposed adjustments to stormwater management facilities and the overall watershed tributary area are shown in Appendix Figure 2, "Overall Proposed Hydrology Plan" (Sheet C12.2). Appendix Figure 3, "Hydrology Plan" (Sheet C12.3), delineates the proposed Mitigated Alternative Site and shows the proposed street modifications and changes to hydrology areas both on site and off site.

The Mitigated Alternative will redevelop an area that is currently occupied by institutional, commercial and residential uses and paved parking areas. The Mitigated

Alternative will increase the amount of impervious surface by covering some currently undeveloped areas on the Mitigated Alternative Site, but that increase will be partially offset by a decrease in impervious surface resulting from additional landscaping in bulb outs and roundabouts in the street area. The net increase in the amount of impervious area will be 21,033 gross square feet. The development will also slightly change drainage pipe routing, which will slightly increase time of concentration for the Mitigated Alternative. The Mitigated Alternative (including off-site improvements) will result in a negligible increase in peak drainage flow rates of less than 0.12 cubic feet per second (cfs) based on the Contra Costa County Rational Method. The calculations for existing and proposed watershed hydrology using the Rational Method can be found in Appendices 1 and 2. The appendices and flow rates shown in this report reflect and reference results of analyses and calculations for the Project. The increase in impervious surface is less for the Mitigated Alternative than for the Project (21,033 SF for the Mitigated Alternative compared to 28,283 SF for the Project.) Therefore, the analysis previously undertaken for the Project (Hydrology and Hydraulics Report for Saranap Village, Revised May 8, 2014), which demonstrates that the peak runoff for the post-development situation will result in only a neglible increase in peak runoff when compared to the pre-development situation, is still valid.

As an alternative to this analysis, and at the County's request, we have also evaluated the proposed and existing flows using the Contra County Small Watershed Hydrograph Method (SWHM). We evaluated both proposed and existing conditions and volumes of runoff using this modified rational method. We used the rational method hydrology from our base study as the basis for the input data. See Appendix 3 for the details on this alternative analysis. The hydrographs show that the increase to storm water volume between existing and proposed conditions in the 24-hour, 10-year design storm will be 12,304 cubic feet (CF). This SWHM analysis concludes that the Project, and hence the Mitigated Alternative will result in a decrease in the peak flow rate of 0.2 cfs.

The drainage calculations in this report are based upon use of conservative runoff coefficients. A runoff coefficient represents the percentage of storm rainfall not absorbed into the ground. The coefficient takes into account: soil type, impervious area, compaction of soils, treatment planters and ground cover. Runoff not absorbed into the ground flows into a drainage conveyance system (storm drain pipes) or continues to sheet flow across the ground. This analysis is conservative also because the C3 facilities are not assumed to detain stormflows during the 10-year design storm. The C3 facilities will, however, further reduce stormflows during 2-year and lesser events, resulting in a benefit to the neighborhood. In addition, compliance with current C3 requirements will ensure that water quality is substantially improved over existing.

The purpose of this report is to identify the potential impacts to off-site drainage facilities and to Las Trampas Creek from the Mitigated Alternative. There will be no substantial impacts from the Mitigated Alternative as it will not significantly increase surface runoff from current conditions. The 0.12 cfs flow rate increase calculated using the Contra Costa County Rational Method, and the 0.5 cfs flow rate decrease and 12,300 CF volume increase calculated using the

SWHM, are not projected to cause any significant impacts. These numbers are so small as to be imperceptible. The fact that one methodology produces a negligible increase in flow rate, while the other methodology produces a negligible decrease in flow rate demonstrates that the results are within the range of statistical insignificance. The differences between pre- and post-Mitigated Alternative numbers are not large enough to cause any appreciable differences in the volume or velocity of flows in any storm drain facilities. All Mitigated Alternative drainage originating on the site or from the off-site improvements will be conveyed to existing storm drainage facilities. The facilities have adequate capacity to convey this storm water to its point of discharge, which is the 60" SD within Flora Avenue. The Mitigated Alternative will not significantly impact preexisting conditions downstream within the Las Trampas Creek, the drainage system, or the intermediary storm drain system within the watershed at Blade Court.

Hall Equities Group, the applicant, requested that we also investigate methods that could be used to eliminate any Mitigated Alternative-related increase in either the flow rate (using the Contra Costa County Rational Method) or volume (using SWHM) during the 24-hour, 10-year design storm. Such measures are not necessary to reduce impacts because the Mitigated Alternative will produce only a negligible increase in storm flows and peak period volume. However, as discussed in Appendix 4, it is possible to construct a stormwater detention vault within Parcel B that is approximately 5' deep x 2600 square feet, to achieve this zero increase goal.

End of Executive Summary

ANALYSIS OF STORMFLOWS USING THE CONTRA COSTA COUNTY RATIONAL METHOD

Introduction

This report addresses hydrology issues related to the Saranap Village Mitigated Alternative. This report addresses all Mitigated Alternative development onsite and offsite that would affect drainage.

The purpose of this report is to identify the potential impacts to off-site drainage facilities and to Las Trampas Creek from the Mitigated Alternative. The Mitigated Alternative Site is located in a watershed that is approximately 100 acres, which is far smaller than one square mile. Under County standards, drainage facilities in watersheds of less than one square mile must be hydraulically adequate for a 10-year design storm. This report accordingly addresses drainage during a 10-year design storm. A 10-year design storm has a statistical likelihood of occurring approximately once every ten years. The 10-year design storm lasts 24 hours.

The Mitigated Alternative and Mitigated Alternative Site

The Saranap Village Mitigated Alternative proposes to redevelop an area located at the corner of Saranap Avenue and Boulevard Way in the unincorporated (Walnut Creek) area of Contra Costa County (See Appendix Figure 1). All existing structures and pavement on the privately-owned portions of the Mitigated Alternative Site will be removed and replaced with new facilities. The Mitigated Alternative includes up to 196 multi-family units, and up to 22,261 square feet of gross leasable area of retail, grocery, restaurant, coffee shop, bank, nightclub and health club uses. Proposed improvements also include underground, multi-level parking structures for residential and commercial use. The Mitigated Alternative includes roadway and sidewalk improvements to Boulevard Way and Saranap Avenue. These roadway improvements include a narrowing of Boulevard Way along the length of the Mitigated Alternative Site, and extending offsite to the intersection of Boulevard Way and Flora Avenue. Roundabouts, landscaped bulb-outs, island, angled street parking, and new crosswalks will be located within the new street design.

The Mitigated Alternative Site includes privately-owned properties and the public rights of way that front those properties. The three privately-owned sites comprise approximately 3.5 acres combined, and are referred to in this report as Site A, Site B (which includes the area called Site B1 in other documents) and Site C. The Mitigated Alternative Site also includes the public right of way along the frontage of Sites A, B and C. Offsite areas will also be disturbed, for additional improvements to Saranap Avenue and Boulevard Way.

Sites A, B and C are currently developed with multiple buildings, including an apartment building, commercial and office space, the Sufism Reoriented church facility, one single family

house and parking lots associated with these uses. Most of the existing site is impervious area that includes paved streets, roof areas, sidewalks, paved parking, driveways, patios, walkways, and compacted base rock or asphalt areas for parking. Accordingly, the increase the Mitigated Alternative will cause in the amount of impervious area is small, especially in comparison to the overall watershed area. The change in pervious area is shown in Table 1.

TABLE 1 – PERVIOUS AND IMPERVIOUS SURFACE AREA

	Pre-Mitigated Alternative Impervious Area	Post-Mitigated Alternative Impervious Area	Difference
Site A	54,073 SF	56,877 SF	+ 2,744 SF
Site B (includes B1)	41,534 SF	54,211 SF	+ 12,677 SF
Site C	15,474 SF	23,266 SF	+ 7,792 SF
Boulevard Way and Saranap Blvd. improvements (includes onsite and offsite areas)	73,180 SF	71,000 SF	- 2,180 SF
Mitigated Alternative Total	184,261 SF	205,294 SF	+ 21,033 SF

Designed landscape areas will minimize runoff through the use of C.3 storm water treatment planters. Runoff will be further reduced through landscaping proposed on building roof levels and planters around the perimeter of the building, with C.3 treatment measures (including biotreatment planters) placed throughout the Mitigated Alternative Site. Though the analysis does not assume that C3 facilities will act as detention facilities during the 10-year design storm, we note that these facilities will act as on-site detention to reduce rates of runoff during two-year and annual events. The planters will also fulfill storm water treatment requirements for Contra Costa County. The stormwater management facilities and water treatment planters are shown on the Storm Water Treatment Plans (sheets C11.1-C11.3 of the Civil Plan Submittal). Upgrading the stormwater quality treatment from the standards employed when the existing buildings were constructed in the 1960s to the C3 standards applicable currently will have a beneficial impact on water quality.

Design Goal to Avoid Significant Drainage Impacts

This Mitigated Alternative is designed so drainage from the site will not substantially increase rates of storm flows into Las Trampas Creek, or cause storm flows to exceed the capacity of any off-site drainage facility. The rate of flow generated from the existing site compared to the rate of flow and volume of Las Trampas Creek is negligible. The receiving watershed area that drains to Las Trampas Creek is approximately 13,000 acres. The total Mitigated Alternative Site consists 4.59 acres, or 0.035% of this receiving watershed. The tributary area that drains to

the 60 inch pipe is approximately 100 acres. The Mitigated Alternative Site is only about 4.6% of this tributary area. The Mitigated Alternative will increase flows by a negligible 0.12 cfs using the rational method.

These conclusions are based upon calculations with the use of recommended County runoff factors for development. The hydrology calculations utilized conservative factors; i.e. the County has a range of runoff factors to be used for undeveloped areas of the site, but for this study higher runoff values were used, resulting in more conservative flows for worst case scenarios, as explained in more detail below.

Section 1: Existing On-site Topography and Drainage Patterns

The Mitigated Alternative Site and the offsite improvement areas drain into a single drainage area, which flows downstream into the Las Trampas Creek approximately one half mile southeast of the Mitigated Alternative Site. The Mitigated Alternative Site currently contributes drainage to a tributary watershed of approximately 100 acres that connects to an existing 60" storm drain pipe that drains to the Flora watershed. The existing drainage shed area was previously analyzed in the EIR the County certified for the New Sanctuary for Sufism Reoriented Mitigated Alternative[1] and has been analyzed in this report in more detail. Sites A, B and C, plus the area of all streetscape improvements that will affect drainage represent approximately 4.6% of the approximate 100-acre tributary area.

The Mitigated Alternative Site and the area of offsite improvements drain to an existing 30" storm drain pipe that crosses Site B as noted on Figure 1. This drainage combines with drainage from a 36" storm drain that extends north of the Mitigated Alternative Site, and then flows to a 60" storm drain pipe near Flora Avenue. Approximately 76 acres (labeled Drainage Area "S" in Figure 1) drain into the 36" storm drain pipe. Existing flow from Drainage Area S is predominantly sheet flow and is currently discharged to along a ditch and curb and gutter on the south side of Boulevard Way before entering the 36" pipe. The flows from the 36" pipe represent approximately 78% of the flows that drain into the 60" storm drain pipe. The approximate time of concentration and flows from the 100-acre watershed were determined. Ultimately this area drains from the 60" RCP into a 48" SD across Blade Court and eventually into the Las Trampas Creek, which is a Contra Costa County Flood Control and Water Conservation District (FC Creek) maintained creek.

Upstream and west of the Mitigated Alternative Site is a drainage area that was analyzed in the Sufism Reoriented New Sanctuary EIR, and that represents approximately 18% of the 100-acre tributary watershed. The drainage from this area currently flows overland to the south side of Boulevard Way and west of Saranap Avenue where it is picked up in roadside swales that empties into structure ST2 and ST5. This may change with final construction of the Sufism

[1] The EIR is SCH 2010032038. The information relied upon here is contained in Appendix L, "Preliminary Drainage Report, Sanctuary for Sufism Reoriented," dated January 3, 2011 and prepared by Aliquot Associates, Inc.

Reoriented New Sanctuary, and will be confirmed prior to final design of the Mitigated Alternative. Structures ST5 and ST2 drain to the 30" storm drain pipe mentioned above. Accordingly, the flows from this drainage area combine with the Saranap Village Mitigated Alternative flows (see Figures 1-3).

The 100-acre watershed eventually drains into Las Trampas Creek approximately one half mile downstream from the Mitigated Alternative Site. See hydraulic and hydrology study within the appendix of the approved Sufism Reoriented New Sanctuary EIR for the drainage path to the Las Trampas Creek. (New Sanctuary for Sufism Reoriented Mitigated Alternative EIR, SCH 2010032038, Appendix L, Figure 3.) As noted, the watershed that drains to Las Trampas Creek is approximately 13,000 acres. The Mitigated Alternative Site plus the area of offsite improvements, combined, is less than one-third of one percent of this Las Trampas Creek tributary area.

Before reaching Las Trampas Creek, the drainage course passes near Blade Court. The EIR recently certified by the County for the New Sanctuary for Sufism Reoriented Mitigated Alternative notes that minor erosion was evident downstream of the Saranap Village Mitigated Alternative near the Blade Court area. As noted in the July 25, 2014 letter from Kier & Wright, in response to questions raised about the Blade Court area, we analyzed the capacity of the 48" pipe near Blade Court, and observed and confirmed its slope. Water exits the 60" pipe that extends from just upstream of Flora Avenue to a point just upstream of this 48" pipe. It then passes through a drop box, a short open channel, and then into the 48" pipe. We measured the short channel upstream of the 48" pipe to have a depth of between 4'-6', and a slope of approximately 1%. The 48" pipe appears to accommodate a hydraulic slope greater than 1%. The capacity of the 48" pipe therefore exceeds 115 cf. Peak flows during a 10 year design storm at this location are projected to be approximately 100 cfs. This was determined by using a conservative estimate of drainage area of 120 acres and a conservative estimate of time of concentration of 40.3 minutes, and applying the Contra Costa County Small Watershed Hydrograph Method. Accordingly, the 48" pipe, combined with the measured depth and slope of the channel, is adequate to provide the required hydraulic capacity for upstream drainage, if properly maintained, for the 10-year storm runoff from Blade Court. Since the Saranap Village Mitigated Alternative is not adding any additional peak flow in comparison to the Project, the pipe and channel should continue to be adequate after the Mitigated Alternative is constructed.

We also conducted further investigation of possible reports of flooding in the Blade Court area. The Sufism Reoriented New Sancturary EIR mentioned deficiencies in the drainage channel downstream from Blade Court, but did not identify any flooding concerns for that area. Vince D'Alo, the engineer who prepared the hydraulic analysis for the Sufism Reoriented project, reported to us that in his personal visits to backyards in the area, he observed only minimal erosion in that channel, but nothing that concerned him. He also reported that he saw no indication of flooding emanating from the channel. Also, while several people have heard claims that the Public Works Department received complaints of flooding in that area, no one at the department can identify any flooding complaint relating to that channel. Lastly, as noted in the County's EIR

for the Sufism Reoriented Mitigated Alternative reports, no structures are within 50 feet of the creek in this area and the erosion occurred in a woodsy overgrown area, so a threat to improvements does not exist in that area.

Section 2: Rational Method Runoff Coefficients

The offsite areas within the watershed are primarily residential and zoned R-10. The County standard for runoff coefficients for R-10 is 0.45-0.60. For drainage area "S" outside the Mitigated Alternative Site, a C-value of 0.60 was chosen to produce a larger, and therefore more conservative, Q value. Portions of the overall tributary drainage areas, outside of the Mitigated Alternative Site, are apartments and multifamily residential and commercial and retail businesses for which the County has a range for C values of 0.6-0.95. A typical C value of 0.75 or 0.85 was used for these areas, depending on open space areas. For the road areas directly related to the Mitigated Alternative, a C value of 0.90 was used. For areas that were benefiting from bio filtration treatment, normal C values were used for the 10-year design storm analysis, though we note there will be a reduction in storm flows in 2 year and annual events because of the use of these treatment measures.

Pervious areas were analyzed according to the conservative end of the range of typical values used in the County for such areas, to account for the clay soils found in the area. Contra Costa County standards for open space specify C-values from 0.20 to 0.40. A coefficient of 0.40 was used in the calculations for pre- and post-development open space areas. All other subtributary areas for the pre- and post-development conditions were assigned a C-values of 0.70 to 0.9, depending on the amount of proposed landscaping. Additional landscaping can reduce C factors through percolation and detention in soil, as well as reduction of impervious area.

Section 3: Effect of Mitigated Alternative on Downstream Facilities Based On Contra Costa County Rational Method

There would be no substantial impacts from the Mitigated Alternative as it would not significantly increase surface runoff from current conditions of the three sites (A, B and C) and affected streetscape areas. The installation of landscaping on the private sites, roundabout, landscaped bulb-outs, and a traffic circle island in the street areas will limit flows. Though no detention is assumed for C.3 measures in the analysis of the 10-year design storm, we note that C.3 treatment measures will act as on-site detention to reduce rates of runoff in 2 year and annual rain events. The Mitigated Alternative is projected to increase the flow rate above existing pre-development levels by a negligible 0.12 cubic feet per second (cfs) for the 10 year storm event using the rational method to determine flow. This flow rate increase is so insignificant that it will not be perceptible. The flow increase is well within the range of statistical insignificance, and is not large enough to cause any appreciable differences in the volume or velocity of flows

in any storm drain facilities through which it passes during peak flow periods. Accordingly, it will not exacerbate any downstream deficiencies in the area of Blade Court, and will not cause storm flows to exceed the capacity of that or any other off-site drainage facility.

The calculations of the HGL show sufficient freeboard for the pre and post-Mitigated Alternative flows from structure ST6A to the confluence of the north and south lines at OUT node shown on the proposed (Appendix B).

Accordingly, the Mitigated Alternative will have no adverse impact on this system and have no negative impacts on the downstream system.

Section 4: Summary of Analysis Based On Contra Costa County Rational Method

The Mitigated Alternative will cause flow rates during a 10-year design storm to increase only by 0.12 cfs, which is a negligible amount. Accordingly, the Mitigated Alternative will have no appreciable adverse impact on any downstream system, and will not exacerbate any existing deficiencies in the area of Blade Court. The Mitigated Alternative will not cause an increase in flooding or erosion downstream.

These conclusions are based upon calculations using the recommended County runoff factors for development. Calculations utilized conservative factors; i.e. the County has a range of runoff factors to be used for the undeveloped areas of the site, but this study uses higher runoff values resulting in the most conservative flows for worst case scenarios.

In addition, the Mitigated Alternative's stormwater quality treatment measures will create a beneficial impact on water quality, and will reduce flows for 2 year events and smaller due to storage provided by the C.3 facilities.

Storm Frequency 10 years

Open & Closed System Calculations

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches — Saranap — Project:Saranap

Free Board Requirement = 1.25 feet — Design :Bilal

File = H:\A12549\Exkw~1 — Date: 04-28-2014 Time: 05:44:03pm

TLW_Hydr — Hydrology — Hydraulics — Page 1 of 3 -- version 2.01f

Pt. #	Area Descr. (Acres)	dA	"C"	dCA	Sum A (Acres)	Sum dCA (Acres)	Time of Conc.	Inten. "n"	Q CiA (cfs)	#/=Dia/ SS Width (in./ft.)	Sf Sp	Length Dn (ft.)	Vel. (fps)	Sect Time (min)	Frict Loss (ft.)	HGL (ft.)	MTC HGL+ F.B.	Plan T.C. F.L.	Flow Cond. to Pt.
ST7	G	4.02	0.60	2.41	4.02	2.41	11.0	2.14								229.77	231.02	233.69	Dn*
								0.015	5.17	1= 18.0	0.0032	58	2.9	0.3	0.19			229.19	
											0.0328	0.58	8.2	0.1					ST6A
ST6A	H2	0.95	0.60	0.57	4.97	2.98	11.1	2.13								228.04	229.29	231.37	Dn*
								0.015	6.36	1= 18.0	0.0049	392	3.6	1.8	1.91			227.37	
											0.0285	0.67	8.3	0.8					ST6B
ST6B	F	1.41	0.75	1.06	6.33	4.04	11.9	2.06								217.03	218.28	221.20	Dn*
								0.015	8.32	1= 18.0	0.0083	220	4.7	0.8	1.84			216.20	
											0.0240	0.83	8.3	0.4					ST2
ST4	D	0.55	0.75	0.41	0.55	0.41	7.0	2.69								217.16	218.41	223.42	Dn*
								0.015	1.11	1= 24.0	0.0000	141	0.4	6.7	0.00			216.92	
											0.0331	0.24	5.1	0.5					ST3
ST3	C	0.78	0.75	0.58	1.33	1.00	7.5	2.59								212.59	213.84	217.45	Dn*
								0.015	2.59	1= 24.0	0.0002	42	0.8	0.8	0.01			212.25	
											0.0440	0.34	7.3	0.1					ST2
ST2	B	2.77	0.75	2.08	10.48	7.11	12.3	2.03								211.19	212.44	215.03	Dn*
								0.015	14.41	1= 30.0	0.0016	113	2.9	0.6	0.19			210.40	
											0.0347	0.79	10.8	0.2					ST1
ST8	H1	1.83	0.68	1.24	1.83	1.24	7.5	2.59								222.04	223.29	226.28	Dn*
								0.015	3.23	1= 15.0	0.0033	325	2.6	2.1	1.08			221.53	
											0.0283	0.51	6.9	0.8					ST5
ST5	E	2.42	0.68	1.65	4.25	2.89	7.7	2.56								212.73	213.98	216.31	Dn*
								0.015	7.40	1= 18.0	0.0066	77	4.2	0.3	0.51			212.03	
											0.0343	0.70	9.2	0.1					ST1
ST1	A	0.57	0.85	0.48	15.30	10.49	12.6	2.00								208.01	209.26	211.61	Dn*
								0.015	20.99	1= 30.0	0.0035	206	4.3	0.8	0.72			206.47	
											0.0071	1.54	6.6	0.5					ST0
ST0	R	1.19	0.70	0.83	16.49	11.32	12.9	1.98								206.36	207.61	212.00	Dn*
								0.015	22.39	1= 30.0	0.0040	182	4.6	0.7	0.72			205.00	
											0.0119	1.36	8.2	0.4					BP17
BP14	S	76.00	0.75	57.00	76.00	57.00	39.5	1.13								210.03	211.28	214.73	DC
								0.015	64.43	1= 36.0	0.0124	20	9.1	0.0	0.25			206.98	
											0.0100	Does not apply							BP15
BP15	A2	1.31	0.85	1.11	77.31	58.11	39.5	1.13								208.53	209.78	213.63	Dn*
								0.015	65.69	1= 36.0	0.0129	65	9.3	0.1	0.84			206.78	
											0.0313	1.75	15.3	0.1					BP16
BP16	A3	0.35	0.85	0.30	77.66	58.41	39.6	1.13								207.12	208.37	212.14	Dn*
								0.015	65.94	1= 42.0	0.0057	203	6.9	0.5	1.16			204.84	
											0.0099	2.28	9.9	0.3					BP17

Storm Frequency 10 years

Open & Closed System Calculations

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches — Saranap — Project:Saranap

Free Board Requirement = 1.25 feet — Design :Bilal

File = H:\A12549\Exkw~1 — Date: 04-28-2014 Time: 05:44:03pm

TLW_Hydr — Hydrology — Hydraulics — Page 2 of 3 -- version 2.01f

Pt. #	Area Descr. (Acres)	dA	"C"	dCA	Sum A (Acres)	Sum dCA (Acres)	Time of Conc.	Inten. "n"	Q CiA (cfs)	#/=Dia/ SS Width (in./ft.)	Sf Sp	Length Dn (ft.)	Vel. (fps)	Sect Time (min)	Frict Loss (ft.)	HGL (ft.)	MTC HGL+ F.B.	Plan T.C. F.L.	Flow Cond. to Pt.
BP17		0.00	0.75	0.00	94.15	69.73	39.9	1.12								204.25	205.50	210.00	Dn*
								0.015	78.42	1=114.0	0.0000	114	1.1	1.7	0.00			202.84	
											0.0175	1.41	12.0	0.2					OUT

Beginning Water Surface = 202.58

Storm Frequency 10 years

Open & Closed System Summary

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches | Saranap | Project:Saranap

Free Board Requirement = 1.25 feet | Design :Bilal

File = H:\A12549\Exkw~1 | Date: 04-28-2014 Time: 05:44:03pm

TLW_Hydr | Hydrology | Hydraulics | Page 3 of 3 -- version 2.01f

Pt	Area	Q	Vel	F.L.	Dn	Dc	HGL	EGL	MTC	Plan TC	Flow	Net.
ST7	G	5.17	8.24	229.19	0.58	0.88	229.77	230.83	231.02	233.69	Dn*	ST6A
ST6A	H2	6.36	8.29	227.37	0.67	0.97	228.04	229.11	229.29	231.37	Dn*	ST6B
ST6B	F	8.32	8.30	216.20	0.83	1.12	217.03	218.10	218.28	221.20	Dn*	ST2
ST4	D	1.11	5.12	216.92	0.24	0.36	217.16	217.57	218.41	223.42	Dn*	ST3
ST3	C	2.59	7.31	212.25	0.34	0.56	212.59	213.42	213.84	217.45	Dn*	ST2
ST2	B	14.41	10.79	210.40	0.79	1.28	211.19	213.00	212.44	215.03	Dn*	ST1
ST8	H1	3.23	6.94	221.53	0.51	0.72	222.04	222.79	223.29	226.28	Dn*	ST5
ST5	E	7.40	9.22	212.03	0.70	1.05	212.73	214.05	213.98	216.31	Dn*	ST1
ST1	A	20.99	6.60	206.47	1.54	1.56	208.01	208.69	209.26	211.61	Dn*	ST0
ST0	R	22.39	8.18	205.00	1.36	1.61	206.36	207.40	207.61	212.00	Dn*	BP17
BP14	S	64.43	9.11	206.98	N/A	N/A	210.03	211.32	211.28	214.73	DC	BP15
BP15	A2	65.69	15.34	206.78	1.75	2.60	208.53	212.18	209.78	213.63	Dn*	BP16
BP16	A3	65.94	9.92	204.84	2.28	2.55	207.12	208.65	208.37	212.14	Dn*	BP17
BP17		78.42	11.96	202.84	1.41	2.08	204.25	206.47	205.50	210.00	Dn*	OUT

Point	MTC	Plan TC	Diff.	Point	MTC	Plan TC	Diff.
ST7	231.02	233.69	2.67	ST6A	229.29	231.37	2.08
ST6B	218.28	221.20	2.92	ST4	218.41	223.42	5.01
ST3	213.84	217.45	3.61	ST2	212.44	215.03	2.59
ST8	223.29	226.28	2.99	ST5	213.98	216.31	2.33
ST1	209.26	211.61	2.35	ST0	207.61	212.00	4.39
BP14	211.28	214.73	3.45	BP15	209.78	213.63	3.85
BP16	208.37	212.14	3.77	BP17	205.50	210.00	4.50

Storm Frequency 10 years

Open & Closed System Calculations

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches — Saranap — Project:Saranap

Free Board Requirement = 1.25 feet — Design :Bilal

File = H:\A12549\Kw-Pr3 — Date: 04-28-2014 Time: 05:44:42pm

TLW_Hydr — Hydrology — Hydraulics — Page 1 of 3 -- version 2.01f

Pt. #	Area Descr.	dA (Acres)	"C"	dCA	Sum A (Acres)	Sum dCA (Acres)	Time of Conc.	Inten. "n"	Q CiA (cfs)	#/=Dia/ SS Width (in./ft.)	Sf Sp	Length Dn (ft.)	Vel. (fps)	Sect Time (min)	Frict Loss (ft.)	HGL (ft.)	MTC HGL+ F.B.	Plan T.C. F.L.	Flow Cond. to Pt.
ST7	G	4.02	0.60	2.41	4.02	2.41	11.0	2.14								229.89	231.14	233.69	Dn*
								0.015	5.17	1= 18.0	0.0032	58	2.9	0.3	0.19			229.19	
											0.0160	0.70	6.3	0.2					ST6A
ST6A	H2	0.95	0.60	0.57	4.97	2.98	10.0	2.25								228.98	230.23	231.37	Dn*
								0.015	6.70	1= 18.0	0.0054	286	3.8	1.3	1.55			228.26	
											0.0250	0.72	8.0	0.6					ST6B
ST6B	F	1.41	0.75	1.06	6.38	4.04	10.6	2.18								217.23	218.48	221.20	Dn*
								0.015	8.81	1= 21.0	0.0041	317	3.7	1.4	1.31			216.20	
											0.0096	1.03	6.0	0.9					ST2
ST4	D	0.55	0.75	0.41	0.55	0.41	7.0	2.69								217.22	218.47	223.42	Dn*
								0.015	1.11	1= 24.0	0.0000	141	0.4	6.7	0.00			216.92	
											0.0139	0.30	3.8	0.6					ST3
ST3	C	0.78	0.75	0.58	1.33	1.00	7.6	2.58								215.32	216.57	220.41	Dn*
								0.015	2.57	1= 24.0	0.0002	42	0.8	0.8	0.01			214.96	
											0.0350	0.36	6.8	0.1					ST2
PR7	PR7	0.22	0.85	0.19	0.22	0.19	10.0	2.25								215.62	216.87	219.28	Dn*
								0.015	0.42	1= 24.0	0.0000	110	0.1	13.7	0.00			215.45	
											0.0200	0.17	3.2	0.6					ST2
ST2	B	2.57	0.75	1.93	10.50	7.15	11.5	2.09								214.01	215.26	218.07	Dn*
								0.015	14.98	1= 30.0	0.0018	113	3.1	0.6	0.20			213.18	
											0.0320	0.83	10.6	0.2					ST1
ST8	H1	1.83	0.68	1.24	1.83	1.24	7.0	2.69								222.05	223.30	226.28	Dn*
								0.015	3.34	1= 15.0	0.0036	325	2.7	2.0	1.16			221.53	
											0.0283	0.52	7.0	0.8					ST5
ST5	E	0.74	0.75	0.56	2.57	1.80	7.8	2.54								212.56	213.81	216.31	Dn*
								0.015	4.58	1= 18.0	0.0025	77	2.6	0.5	0.19			212.03	
											0.0343	0.53	8.1	0.2					ST1
ST1	A	0.55	0.80	0.44	13.62	9.39	11.7	2.08								211.21	212.46	214.43	BW
								0.015	19.50	1= 27.0	0.0053	106	4.9	0.4	0.56			209.18	
											0.0116	Does not apply							PR4
PR4	PR4	0.81	0.85	0.69	14.43	10.08	12.1	2.04								210.65	211.90	215.31	BW
								0.015	20.58	1= 30.0	0.0034	124	4.2	0.5	0.42			207.95	
											0.0120	Does not apply							PR5
PR5	PR5	0.54	0.85	0.46	14.97	10.54	12.6	2.00								210.23	211.48	213.38	BW
								0.015	21.09	1= 30.0	0.0035	90	4.3	0.3	0.32			206.56	
											0.0120	Does not apply							PR6
E14	S	76.00	0.75	57.00	76.00	57.00	40.0	1.12								210.04	211.29	214.73	BW
								0.015	64.02	1= 40.3	0.0067	20	7.2	0.0	0.13			206.98	
											0.0350	Does not apply							PR6

Storm Frequency 10 years

Open & Closed System Calculations

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches — Saranap — Project:Saranap

Free Board Requirement = 1.25 feet — Design :Bilal

File = H:\A12549\Kw-Pr3 — Date: 04-28-2014 Time: 05:44:42pm

TLW_Hydr — Hydrology — Hydraulics — Page 2 of 3 -- version 2.01f

Pt. #	Area Descr.	dA (Acres)	"C"	dCA	Sum A (Acres)	Sum dCA (Acres)	Time of Conc.	Inten. "n"	Q CiA (cfs)	#/=Dia/ SS Width (in./ft.)	Sf Sp	Length Dn (ft.)	Vel. (fps)	Sect Time (min)	Frict Loss (ft.)	HGL (ft.)	MTC HGL+ F.B.	Plan T.C. F.L.	Flow Cond. to Pt.
E15	E15	0.43	0.85	0.37	0.43	0.37	10.0	2.25								209.92	211.17	213.14	BW
								0.015	0.82	1= 15.0	0.0002	30	0.7	0.7	0.01			206.18	
											0.0200	Does not apply							PR6
PR6	A3	0.00	0.90	0.00	91.40	67.90	40.0	1.12								209.91	211.16	212.58	BW
								0.015	76.27	1= 36.0	0.0174	25	10.8	0.0	0.44			205.48	
											0.0256	Does not apply							E16
E16	A3	1.09	0.90	0.98	92.49	68.88	40.0	1.12								209.47	210.72	212.14	DC
								0.015	77.37	1= 36.0	0.0179	203	10.9	0.3	3.64			204.84	
											0.0099	Does not apply							E17
PR1	PR1	0.33	0.75	0.25	0.33	0.25	10.0	2.25								220.49	221.74	228.80	Dn*
								0.015	0.56	1= 12.0	0.0003	226	0.7	5.3	0.07			220.21	
											0.0114	0.28	3.1	1.2					PR2
PR2	PR2	0.78	0.75	0.58	1.11	0.83	11.2	2.12								218.11	219.36	225.84	Dn*
								0.015	1.77	1= 12.0	0.0033	54	2.3	0.4	0.18			217.63	
											0.0150	0.48	4.7	0.2					PR3
PR3	PR3	0.28	0.85	0.24	1.39	1.07	11.4	2.10								217.27	218.52	225.57	Dn*
								0.015	2.25	1= 12.0	0.0053	115	2.9	0.7	0.61			216.82	
											0.0300	0.45	6.5	0.3					BP0
BP0	BP0	0.27	0.85	0.23	1.66	1.30	11.7	2.08								205.98	207.23	212.00	BW
								0.015	2.70	1= 12.0	0.0076	182	3.4	0.9	1.39			205.00	
											0.0119	Does not apply							E17
E17	E17	0.00	0.75	0.00	94.15	70.18	40.3	1.12								204.59	205.84	210.00	Dn*
								0.015	78.54	1= 60.0	0.0012	114	4.0	0.5	0.14			202.84	
											0.0175	1.75	12.8	0.1					OUT

Beginning Water Surface = 202.56

Storm Frequency 10 years

Open & Closed System Summary

Contra Costa County Method

Mean Annual Precipitation = 22.00 inches | Saranap | Project:Saranap

Free Board Requirement = 1.25 feet | Design :Bilal

File = H:\A12549\Kw-Pr3 | Date: 04-28-2014 Time: 05:44:42pm

TLW_Hydr | Hydrology | Hydraulics | Page 3 of 3 -- version 2.01f

Pt	Area	Q	Vel	F.L.	Dn	Dc	HGL	EGL	MTC	Plan TC	Flow	Net.
ST7	G	5.17	6.34	229.19	0.70	0.88	229.89	230.51	231.14	233.69	Dn*	ST6A
ST6A	H2	6.70	8.00	228.26	0.72	1.00	228.98	229.97	230.23	231.37	Dn*	ST6B
ST6B	F	8.81	5.97	216.20	1.03	1.10	217.23	217.78	218.48	221.20	Dn*	ST2
ST4	D	1.11	3.81	216.92	0.30	0.36	217.22	217.44	218.47	223.42	Dn*	ST3
ST3	C	2.57	6.75	214.96	0.36	0.56	215.32	216.03	216.57	220.41	Dn*	ST2
PR7	PR7	0.42	3.21	215.45	0.17	0.22	215.62	215.78	216.87	219.28	Dn*	ST2
ST2	B	14.98	10.58	213.18	0.83	1.31	214.01	215.75	215.26	218.07	Dn*	ST1
ST8	H1	3.34	7.01	221.53	0.52	0.74	222.05	222.81	223.30	226.28	Dn*	ST5
ST5	E	4.58	8.13	212.03	0.53	0.82	212.56	213.59	213.81	216.31	Dn*	ST1
ST1	A	19.50	4.91	209.18	N/A	N/A	211.21	211.58	212.46	214.43	BW	PR4
PR4	PR4	20.58	4.19	207.95	N/A	N/A	210.65	210.92	211.90	215.31	BW	PR5
PR5	PR5	21.09	4.30	206.56	N/A	N/A	210.23	210.52	211.48	213.38	BW	PR6
E14	S	64.02	7.23	206.98	N/A	N/A	210.04	210.85	211.29	214.73	BW	PR6
E15	E15	0.82	0.67	206.18	N/A	N/A	209.92	209.93	211.17	213.14	BW	PR6
PR6	A3	76.27	10.79	205.48	N/A	N/A	209.91	211.72	211.16	212.58	BW	E16
E16	A3	77.37	10.95	204.84	N/A	N/A	209.47	211.33	210.72	212.14	DC	E17
PR1	PR1	0.56	3.13	220.21	0.28	0.31	220.49	220.64	221.74	228.80	Dn*	PR2
PR2	PR2	1.77	4.74	217.63	0.48	0.57	218.11	218.46	219.36	225.84	Dn*	PR3
PR3	PR3	2.25	6.51	216.82	0.45	0.64	217.27	217.93	218.52	225.57	Dn*	BP0
BP0	BP0	2.70	3.44	205.00	N/A	N/A	205.98	206.16	207.23	212.00	BW	E17
E17	E17	78.54	12.83	202.84	1.75	2.51	204.59	207.15	205.84	210.00	Dn*	OUT

Point	MTC	Plan TC	Diff.	Point	MTC	Plan TC	Diff.
ST7 .	231.14	233.69	2.55	ST6A	230.23	231.37	1.14
ST6B	218.48	221.20	2.72	ST4	218.47	223.42	4.95
ST3	216.57	220.41	3.84	PR7	216.87	219.28	2.41
ST2	215.26	218.07	2.81	ST8	223.30	226.28	2.98
ST5	213.81	216.31	2.50	ST1	212.46	214.43	1.97
PR4	211.90	215.31	3.41	PR5	211.48	213.38	1.90
E14	211.29	214.73	3.44	E15	211.17	213.14	1.97
PR6	211.16	212.58	1.42	E16	210.72	212.14	1.42
PR1	221.74	228.80	7.06	PR2	219.36	225.84	6.48
PR3	218.52	225.57	7.05	BP0	207.23	212.00	4.77
E17	205.84	210.00	4.16				

Appendix 3
SWHM Analysis

The County requested an evaluation of proposed and existing flows using the Contra County Small Watershed Hydrograph Method (SWHM), for the purpose of evaluating flows and volume adjustments due to the Mitigated Alternative. This Appendix 3 provides that alternative analysis. We used the rational method hydrology from our base study as the basis for the input data.

Attached are the results using this modified rational method. The resulting calculations vary slightly from the normal rational method and are based on the analysis provided in Appendices 1 and 2. The flow varies slightly from the rational method that it is derived from, as follows:

APPENDIX 3 TABLE Peak Flow Rate and Volume Comparison Of Rational Method and SWHM (24-hour, 10 yr. design storm)

	Peak Flows Rational Method	Peak Flows SWHM Method	Difference between Rational and SWHM
Flow Rate			
Existing Condition (cfs)	78.42 cfs	78.60 cfs	+/- 0.18 cfs
Post-Mitigated Alternative Condition (cfs)	78.52 cfs	78.40 cfs	+/- 0.121 cfs
Difference between existing and post-Mitigated Alternative conditions	+ 0.12 cfs	- 0.20 cfs	0.30 cfs
Volume			
Existing Condition (cf)		1,010,190 CF	
Post-Mitigated Alternative Condition(cf)		1,022,494 CF	
Difference between existing and post-Mitigated Alternative conditions (increase in volume)		+ 12,304 CF	

The hydrographs show that the increase to storm water volume between existing and proposed conditions during the 24-hour, 10-year design storm is 12,304 cubic feet (CF) for the entire Mitigated Alternative, including off-site improvements. In this SWHM analysis, the peak flow rate is reduced post-Mitigated Alternative by 0.20 cfs. This reduction is due to the timing of rain events in the SWHM. As noted in the Executive Summary above, the 12,304 CF increase is so small as to be imperceptible. It is within the range of statistical insignificance and is not large

enough to cause any appreciable differences in the volume or velocity of flows in any storm drain facilities. It will not cause any significant, adverse impacts.

As stated in the Executive Summary, the appendicies and flowrates shown in this report reflect and reference calculations made using the SWHM for the Project. The increase in impervious area is less for the Mitigated Alternative than for the Project, and therefore difference in post-development runoff when compared to predevelopment runoff will be less for the Mitigated Alternative than for the Project. Accordingly, it is not expected to result in any material difference in the calculations or results reflected in this report and appedicies.

Appendix 4

Achieving Zero Increase in Post-Mitigated Alternative Flow Rate and Peak Period Volume

Hall Equities Group asked us to investigate whether facilities could be installed that would result in no increase in the flow rate or volume of stormwater leaving the Mitigated Alternative Site during the 24-hour, 10-year design storm. This Appendix 4 responds to that request and presents a possible means of accomplishing this goal. We note that, because the Mitigated Alternative will not cause any significant impacts and will produce only a negligible increase in flow rate in the 10-year design storm (as calculated using the Rational Method), these potential additional measures are not necessary to reduce impacts, but are studied solely for informational purposes.

As stated in the Executive Summary, the appendicies and flowrates shown in this report reflect and reference calculations made using the rational method and SWHM for the Project. The increase in impervious area is less for the Mitigated Alternative than for the Project. Therefore, the difference in post-development runoff when compared to predevelopment runoff will be less for the Mitigated Alternative than for the Project. Accordingly, it is not expected to result in any material difference in the calculations or results reflected in this report and appendicies.

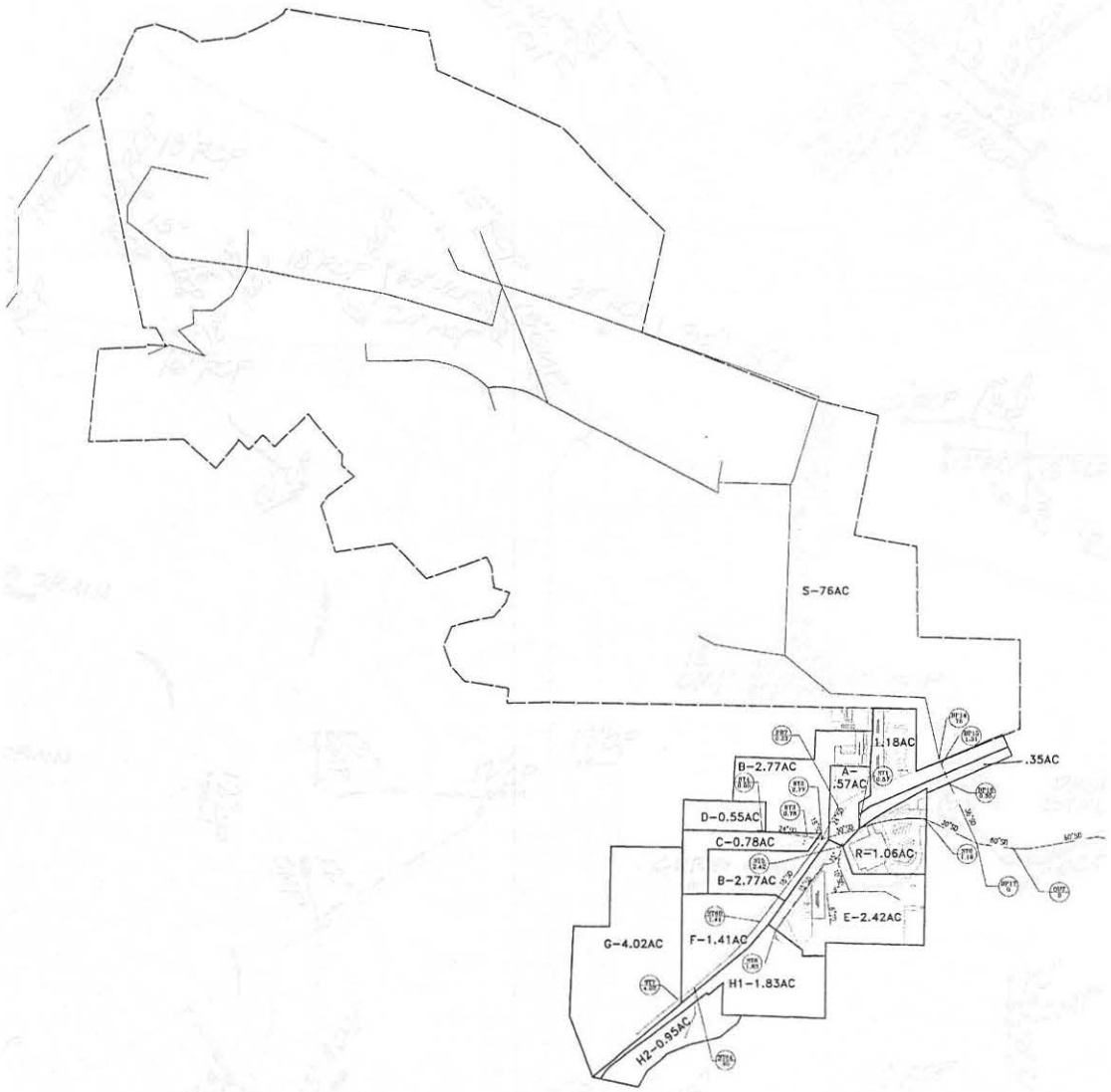
The calculations and analysis reflected in the foregoing report and in Appendix 3 assume installation of all storm management facilities referenced in the Preliminary Stormwater Control Plans. If, in addition to those facilities, the Mitigated Alternative includes a storm water detention vault that is approximately 5' deep x 2600 SF, which would accommodate storage capacity of 12,304 CF of stormwater. This is the volume of stormwater generated in a 24-hour, 10-year design storm that exceeds pre-Mitigated Alternative conditions, as explained in Appendix 3 above.

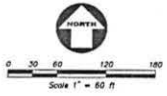
A vault could be installed within the Mitigated Alternative project area with a likely location within Site B. A portion of the roof water could be diverted to this the detention structure and not released until after the peak flow period has passed. We calculated the volume of flow from approximately 0.91 acres of roof area for Building B for the entire 24 hour storm. The total volume for that area is 12,300 +/- CF.

By eliminating 12,304 CF of stormwater that would otherwise flow offsite during the 10-year storm peak flow period, and releasing this water after the peak flow period has passed through a properly-sized orifice, this proposal would result in an approximate 0.5 cfs decrease in stormflow rate below pre-Mitigated Alternative levels (calculated using the Contra Costa County Rational Method). If this vault were installed, the Mitigated Alternative would, according to Rational Method calculations, reduce the flow rate to a level that is below the existing rate, providing a benefit to the neighborhood and improving existing conditions. The vault would also ensure there would be no increase from pre-Mitigated Alternative conditions in the volume of

stormwater flowing from the Mitigated Alternative Site during the 24-hour, 10-year storm event.

This Appendix presents one possible means of capturing the additional stormwater runoff generated by the Mitigated Alternative. It does not describe the only possible additional detention facilities, and other facilities could be installed to achieve the zero increase goal.





LEGEND

- HYDROLOGY AREA
- OUTER HYDROLOGY AREA
- EXISTING STORM DRAIN
- 1/11.1 — NODE / AREA

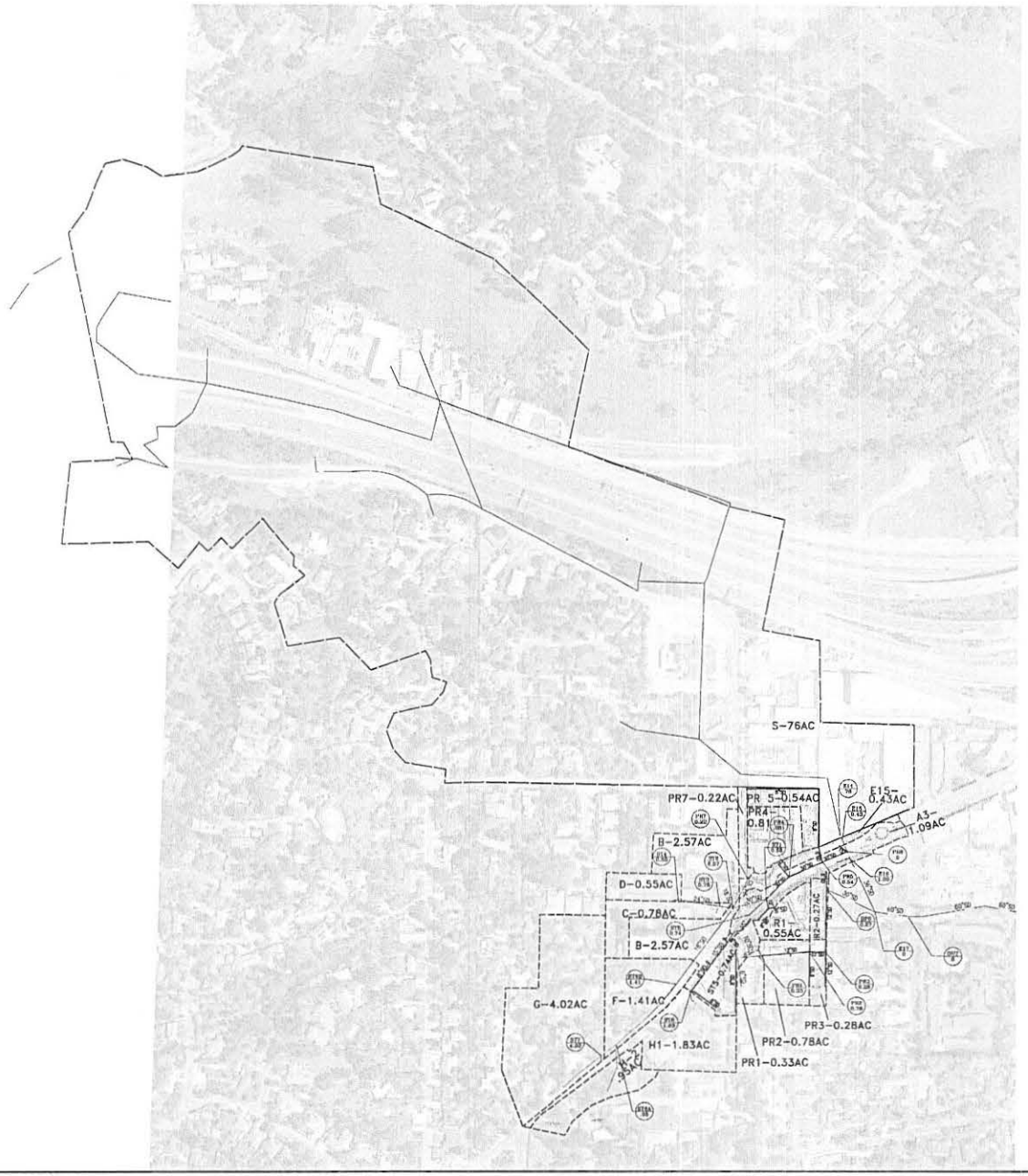
PROGRESS SET

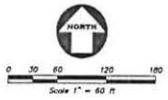
NO.	REVISION	BY	NO.	REVISION	BY
△			△		
△			△		
△			△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8798

EXHIBIT 1 - OVERALL EXISTING HYDROLOGY PLAN
OF
BOULEVARD WAY AND SARANAP AVENUE
FOR
HALL EQUITIES
CONTRA COSTA COUNTY CALIFORNIA

DATE	MARCH, 2013
SCALE	1" = 150'
DESIGNER	TC
JOB NO.	A12549-2
SHEET	C12.1
OF	13 SHEETS





LEGEND

- HYDROLOGY AREA
- OUTER HYDROLOGY AREA
- EXISTING STORM DRAIN
- 1/11.1 — NODE / AREA

PROGRESS SET

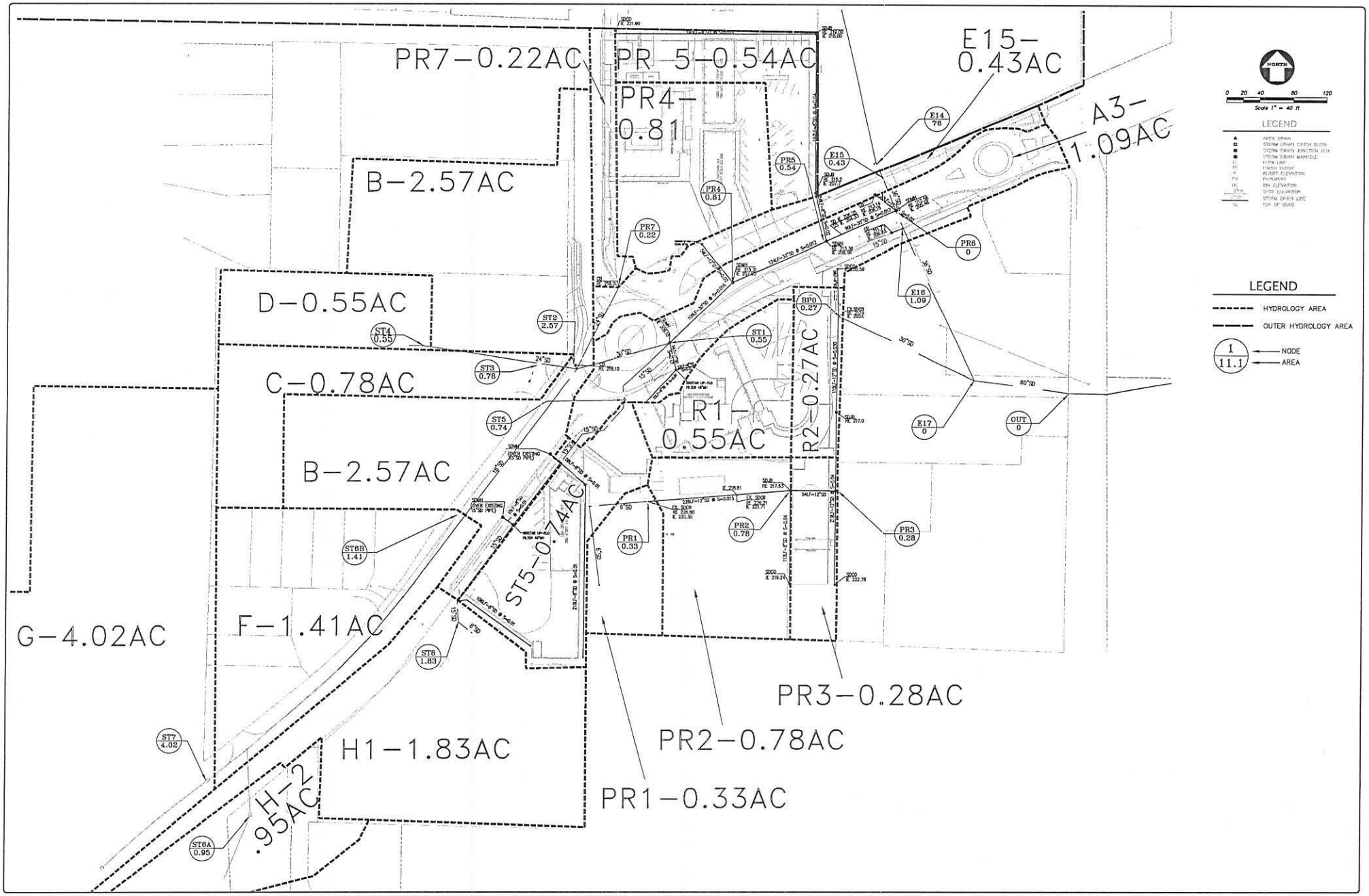
NO.	REVISION	BY	NO.	REVISION	BY
△			△		
△			△		
△			△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8798

EXHIBIT 2 – OVERALL PROPOSSED HYDROLOGY PLAN
OF
BOULEVARD WAY AND SARANAP AVENUE
FOR
HALL EQUITIES

CONTRA COSTA COUNTY CALIFORNIA

DATE	MARCH, 2013
SCALE	1" = 150'
DESIGNER	TC
JOB NO.	A12549-2
SHEET	C12.2
OF	13 SHEETS



NO.	REVISION	BY	NO.	REVISION	BY
△			△		
△			△		
△			△		
△			△		
△			△		

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
2850 Collier Canyon Road (925) 245-8788
Livermore, California 94551 Fax (925) 245-8796

EXHIBIT 3 – HYDROLOGY PLAN
OF
BOULEVARD WAY AND SARANAP AVENUE
FOR
HALL EQUITIES

CONTRA COSTA COUNTY CALIFORNIA

DATE	MARCH, 2013
SCALE	1" = 40'
DESIGNER	TC
JOB NO.	A12549-2
SHEET	C12.3
OF	13 SHEETS

APPENDIX F

Transportation Technical Reports

This page intentionally left blank

Traffic Impact Analysis For the Proposed Saranap Village Mitigated Alternative

Prepared For:

Contra Costa County

Report Revised: September 4, 2015

Prepared By:

omni · means
ENGINEERS · PLANNERS

PROPOSED SARANAP VILLAGE MITIGATED ALTERNATIVE
TRAFFIC IMPACT ANALYSIS

PREPARED FOR:
CONTRA COSTA COUNTY

PREPARED BY:
OMNI-MEANS, LTD.
ENGINEERS & PLANNERS
1901 OLYMPIC BOULEVARD, SUITE 120
WALNUT CREEK, CA 94596
(925) 935-2230

REPORT REVISED: SEPTEMBER 4, 2015

35-3528-06
(R16671TIA009.DOCX)

Table of Contents

MITIGATED ALTERNATIVE DESCRIPTION 1
STUDY METHODOLOGY 2
MITIGATED ALTERNATIVE TRIP GENERATION 4
MITIGATED ALTERNATIVE TRIP DISTRIBUTION 8
MITIGATED ALTERNATIVE TRANSPORTATION IMPACTS 13
Local Streets and SR 24 13
I-680 Freeway Segments 21
Pedestrian and Bicycle Transportation 23
Delivery Vehicles 25
Driveway Operation 25
Roundabout Operation 25
Transit Service 26
Parking 27
Construction Traffic 28

List of Tables

Table 1A Mitigated Alternative Daily Trip Generation Rates 4
Table 1B Mitigated Alternative AM and PM Peak Hour Trip Generation Rates 4
Table 2a Mitigated Alternative Trip Generation: Daily Trips 5
Table 2B Mitigated Alternative Trip Generation: AM and PM Peak Hour 6
Table 3 Travel Time comparison 11
Old Tunnel Road/Saranap avenue & state route 24 11
(pleasant hill Road to Project Site) 11
PM Weekday Commute period 11
Table 4 Year 2030 + Project with Maximum SR-24 Diversion Old Tunnel Road-Saranap Avenue Corridor Intersection LOS; PM Peak Hour 12
Reproduction of Results for Existing Plus Project for (Mitigated Alternative would be the same or lower): 15
Table 5 Existing and Existing Plus Project Conditions: Intersection LOS AM and PM Peak Hour 15
Table 6 Existing And Existing Plus Project Conditions: Roadway Segment Levels of Service 15
Table 7 Freeway Operations; Existing and Existing Plus Project LOS Results 15
Reproduction of Results for Near Term Plus Project (Mitigated Alternative would be the same or lower): 16
Table 8 Near-Term (No project) AND Near-Term Plus Project Conditions: Intersection LOS AM and PM Peak Hour 16
Table 9 Near-Term Plus Project Conditions: Roadway Segment Levels of Service 16
Table 10 Freeway Operations; Near-Term and Near-Term Plus Project LOS Results 16
Reproduction of Results for Cumulative Plus Project (Mitigated Alternative would be the same or lower): 17
Table 11 Year 2030 Cumulative (No project) and Year 2030 Cumulative Plus Project Conditions: Intersection LOS / AM and PM Peak Hour 17
Table 12 Year 2030 Cumulative (No Project) and Plus Project Conditions: Roadway Segment Levels of Service 17
Table 13 Freeway Operations; Year 2030 Cumulative (no Project) and Plus Project LOS Results 17
Table 14 Existing, exist+Mitigated Alternative, Near-Term+Mitigated Alternative, Year 2030+ Mitigated Alternative Old Tunnel Road-Saranap Avenue Corridor Intersection LOS; PM Peak Hour 18

Table 15 Existing, exist+mitigated alternative, Near-Term+mitigated alternative, Year 2030+ mitigated alternative I-680: NB On-ramp from Lawrence Way LOS/Density; AM/PM Peak Hour 21
Table 16 Existing, exist+Mitigated Alternative, Near-Term+Mitigated Alternative, Year 2030+ Mitigated Alternative I-680: NB Off-ramp To Ygnacio valley Road LOS/Density; AM/PM Peak Hour 22
Table 17 I-680 Southbound Freeway Operations 22
Table 18 I-680 Northbound Freeway Operations 23

Appendices (Attached)

Introduction

This report addresses the proposed Saranap Village Mitigated Alternative, a reduced project alternative that includes 196 residential units and 22,261 square feet of commercial uses. A Site Plan for the Mitigated Alternative is attached as Exhibit 1 (Appendices).

This report is based upon the information contained in the Traffic Impact Analysis prepared for the Project (Omni Means, August 22, 2014). The text of that earlier report is attached as Exhibit 10. This baseline for the analysis of the Mitigated Alternative is the same as was used for analysis of the Project.

Trip generation was calculated for the Mitigated Alternative, to confirm that it will produce fewer trips than the Project. This report includes detailed discussions of trip generation and trip reduction calculations. The Mitigated Project is projected to generate 3,885 net new daily trips with 217 net new AM peak hour trips and 214 net new PM peak hour trips. These daily and peak hour trip totals would represent a decrease of 1,113 daily trips, 80 AM peak hour trips, and 191 PM peak hour trips compared to the Project.

This analysis evaluates the same intersections and roadways as our earlier analysis. Because the Mitigated Alternative proposes the same types of uses as the Project, trip distribution is expected to be generally the same for the Mitigated Alternative as for the Project. The potential for cut-through traffic was evaluated, and determined not to result in a material change to traffic distribution patterns. Because Mitigated Alternative-generated trips are not projected to impact significantly the study intersections, it can be seen that intersections further away, which will experience even fewer trips due to traffic dissipation, will not experience significant impacts. Accordingly, there is no need to study those intersections at a greater level of detail.

Our earlier report established that the larger Project would not result in any significant adverse transportation impacts under three scenarios (existing plus Project, Near-term plus Project and Cumulative plus Project). Because the Mitigated Alternative is smaller, it also will not create any significant transportation impacts under any of these scenarios.

This report also documents the feasibility and safety of truck movements, and the assignment and operation of Mitigated Alternative trips through existing and new driveways. (see Exhibit 11---Phase III---Saranap Avenue/Boulevard Way Roundabout Feasibility Analysis, Omni-Means).

Mitigated Alternative Description

The proposed Mitigated Alternative is smaller than the Project. The Mitigated Alternative proposes the following uses:

Use	SF Gross Leasable Area	Location
Shopping Areas	7,677	1,750 on Site A 2,475 Site B 3,452 on Site B1
Neighborhood Grocery	7,636	Site A
Restaurant	4,813	Site B
Coffee Shop	2,135	Site B1
Total Non-Residential	22,261	
Residential Units	196 units (111 mid-rise apts.) (85 high-rise condominiums)	111 on Site A 55 on Site B 6 on Site B1 24 on Site C

Compared to the Project, the Mitigated Alternative represents reduction of 39 residential units (196 units vs. 235 units) and 21,280 square feet of commercial-retail uses (22,261 sq. ft. vs. 43,541 sq. ft.).

Similar to the Project, the Mitigated Alternative would continue to include a roundabout at the Saranap Avenue/Boulevard Way intersection, diagonal parking along its Boulevard Way frontages, and a traffic circle immediately west of the Flora Avenue/Boulevard Way intersection. Please see the Mitigated Alternative Site Plan, Exhibit 1. Vehicle access from Boulevard Way would change slightly from the Project. Like the Project, the Mitigated Alternative would have access to Site A on the north side of Boulevard Way, with a full-access driveway that would serve residents within the building as well as all commercial-retail uses located in both Site A and Site B. Compared to the Project, the Mitigated Alternative driveway for Site B would be moved west along Boulevard Way to the proposed roundabout at the Saranap Avenue/Boulevard Way intersection and form the forth leg of the roundabout opposite the Saranap Avenue approach leg. Project Site's C driveway would be located west of the proposed roundabout and would be the same as proposed for the Project. Unlike the Project, the Mitigated Alternative would have no driveway to/from Saranap Avenue serving Site A.

All parking for the Mitigated Alternative would be provided on-site and would meet standard County Code requirements. Compliance with County Code requirements related to parking would be ensured during plan check, and permit issuance. Construction traffic for the Mitigated Alternative would comply with standard Contra Costa County requirements.

Study Methodology

This section of the report describes the methodology used to study the impacts of the Mitigated Alternative. Please see the following sections for the results of this analysis.

The analysis of the Mitigated Alternative employed the same methodologies as the analysis of the Project. The study of the Mitigated Alternative studies the same intersections and roadways as were addressed for the Project. Please see Exhibit 10, pages 1 through 32. Intersection #15 (Pleasant Hill Road/Old Tunnel Road/SR-24 EB off-ramp) is studied with the proper eastbound off-ramp direction. As did the study of the Project, this study of the Mitigated Alternative addresses transit routes and level of transit service, and evaluates the capacity of Boulevard Way in light of the narrowing proposed by both the Project and the Mitigated Alternative. As was the case with the analysis of Project traffic, this analysis of the Mitigated Alternative used cumulative traffic volumes derived from CCTA's 2030 model. As explained in our earlier report (please see Exhibit 10, page 45) these 2030 model volumes are slightly greater than the volume of cumulative traffic derived from CCTA's 2040 model as confirmed by CCTA transportation staff, and thus provide a more conservative analysis.[1] The horizon for near-term conditions is 3 years.

This analysis of the Mitigated Alternative uses the same baseline as was used for the study of the Project, and relies upon traffic counts that were taken for that earlier analysis. The only new data that was collected for this Mitigated Alternative report relates to the cut-through analysis addressed below. All schools (Walnut Creek, Lafayette and Acalanes District schools, and St.

1 Matt Kelly, Associate Transportation Planner, Contra Costa Transportation Authority (CCTA), Central County transportation model plots (Year 2000, 2030, 2040), October 24, 2012 and August, 2014.

Mary's College) were in session during all phases of data collection.[2] Vehicle counts were taken in winter pursuant to standard practices and methodologies in CCTA's Technical Procedures Update, which do not discourage the use of any season except summer counts which can be influenced by vacations and lack of school sessions.[3] Trip generation calculations are based upon data from the Institute of Transportation Engineers (ITE), again according to standard practices. ITE trip generation rates include all trips associated with given categories of uses, including employees, residents, guests, customers, visitors, deliveries and all other trips. They likewise encompass all expected trips from the project site, including those to work, school, commercial and recreational sites.

As is the case with the Project study, this Mitigated Alternative study uses HCM operations methodology for all study intersections within the City of Lafayette and Contra Costa County per guidance in the CCTA Technical Procedures Manual.[4] For intersections located within the City of Walnut Creek, the CCTA methodology was used consistent with all recent traffic studies conducted within the City of Walnut Creek. No delay index calculations were used to evaluate State Facilities. All freeway and ramp intersection analyses have been based on HCM 2000/2010 methodologies and/or City of Walnut Creek criteria for intersection LOS. All intersection LOS methodologies were reviewed by Contra Costa County and CCTA staff prior to proposed project analyses.

As noted, additional studies were undertaken for this Mitigated Alternative report to further analyze the Old Tunnel Road-Saranap Avenue corridor as well as the potential "cut-though" traffic (diverting from SR-24). New data collection was conducted on weekdays (excluding Mondays and Fridays) that did not include holidays. New PM peak period traffic counts were conducted at the following intersections:

- Old Tunnel Road/Pleasant Hill Road/SR-24 EB off-ramp
- Old Tunnel Road/Bachon Road
- Old Tunnel Road/Windsor
- Old Tunnel Road/Leland Drive
- Saranap Avenue/Juanita Drive

In addition to new PM peak period intersection counts, new average daily traffic (ADT) counts were conducted on Old Tunnel Road (between Leland Drive and El Curtola Boulevard) and on Saranap Avenue (between El Curtola Boulevard and Juanita Drive), during the same time periods described above.
"Floating car" studies were also conducted (see Floating Car-Diversion Analysis), on both SR-24 (eastbound) and Old Tunnel Road-Saranap Avenue (eastbound) between Pleasant Hill Road and the proposed project site during the PM peak period (4:00-6:00 p.m.), during the same weekday periods described above.

The PM peak period was selected for evaluation to provide a "worst case" analysis. The Project and all alternatives (except the no project alternative) would generate the highest amount of trips through the corridor during the PM peak period. In addition, potential diversion of vehicle trips from SR-24 to the Old Tunnel Road-Saranap Avenue corridor would typically occur during the PM peak period when eastbound commute direction on SR-24 approaching I-680 can become congested. During this time period, the concern is that residents from the proposed

2 Baymetrics Traffic Resources, AM and PM peak period intersection counts (7:00-9:00 a.m. and 4:00-6:00 p.m.) on Boulevard Way, Old Tunnel Road-Saranap Avenue, January 2013, February 2014, March 2015, Cities of Lafayette and Walnut Creek.
3 Contra Costa Transportation Authority (CCTA), Technical Procedures, January 16, 2013.
4 *Contra Costa Transportation Authority (CCTA), Technical Procedures, January 16, 2013.*

project would divert to the Old Tunnel Road-Saranap Avenue corridor rather than use SR-24 eastbound to Mt. Diablo Boulevard.

Mitigated Alternative Trip Generation

Daily and AM/PM peak hour trip generation rates for the Mitigated Alternative are shown in Tables 1A and 1B. Daily and AM/PM peak hour for the Project are shown in Tables 2A and 2B, respectively.

TABLE 1A
MITIGATED ALTERNATIVE DAILY TRIP GENERATION RATES

Land Use Category	Unit[1]	Daily Trip Rate/KSF
Mid-Rise Apartment (3-10 levels)	DU	4.18
High-Rise Condominium (3+ levels)	DU	4.18
Shopping Center (Retail)	KSF	166.73
Restaurant (High-Turnover Sit-Down)	KSF	127.15
Grocery (Supermarket)	KSF	102.24
Coffee Shop (no drive-through)	KSF	761.27

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, (2012) and proprietary trip generation research on Starbuck's Coffee Shop (2005). Shopping center trip rate based on ITE fitted curve equation. Mid-Rise Apartment daily rate based on PM peak hour trip ratio of mid-rise apartment and apartment applied to daily apartment trip rate.

TABLE 1B
MITIGATED ALTERNATIVE AM AND PM PEAK HOUR TRIP GENERATION RATES

Land Use Category	Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
		Total	In %	Out %	Total	In %	Out %
Mid-Rise Apartment (3-10 levels)	DU	0.30	31%	69%	0.39	58%	42%
High-Rise Condominium (3+ levels)	DU	0.34	19%	81%	0.38	62%	38%
Shopping Center (Retail)	KSF	4.29	62%	38%	13.94	48%	52%
Restaurant (High-Turnover Sit-Down)	KSF	10.81	55%	45%	9.85	60%	40%
Grocery (Supermarket)	KSF	3.40	62%	38%	9.48	51%	49%
Coffee Shop (no drive-through)	KSF	101	51%	48%	40.75	50%	50%

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, (2012) and proprietary trip generation research on Starbuck's Coffee Shop (2005).

TABLE 2A
MITIGATED ALTERNATIVE TRIP GENERATION: DAILY TRIPS

Project Use	Quantity KSF/DU	Daily Trips
Mid-Rise Apartment (Gross)	111 du	464
High-Rise Condominium (Gross)	85 du	355
Net New Residential Trips		**819**
Shopping Center (Gross)	7.677ksf	1,280
Internal Trip Reduction 6%		-77
		1,203
Pass-By Reduction 12.5% (50% of Peak Hour PM Pass-By Rate)		-150
Shopping Center (Net)		**1,053**
Restaurant (Gross)	4.813ksf	612
Internal Trip Reduction 6%		-37
		575
Pass-By Reduction 21.5% (50% of Peak Hour PM Pass-By Rate)		-124
Restaurant (Net)		**451**
Grocery (Gross)	7.636ksf	781
Internal Trip Reduction 6%		-47
		734
Pass-By Reduction 18% (50% of Peak Hour PM Pass-By Rate)		-132
Grocery (Net)		**602**
Coffee Shop (Gross)	2.135ksf	1,625
Internal Trip Reduction 6%		-98
		1,527
Pass-By Reduction 17.5%		-267
Coffee Shop (Net)		**1,260**
Net New Commercial Trips (less Internal/P-By)		**3,366**
Net New Residential & Commercial Trips		**4,185**
Less Existing Site Driveway Trips		300
TOTAL NET NEW PROJECT TRIPS		**3,885**

KSF = 1,000 square feet, DU = Dwelling Unit, n.a. = not applicable
Daily Pass-By rate represents 50% of the stated peak hour rate, with the exception of Coffee Shop use. For Coffee Shop use, a conservative Daily Pass-By rate of 17.5% is applied, in recognition that most pass-by trips for the Coffee Shop are expected to be concentrated during the AM peak period, as people head to their daily destinations. ITE trip generation rate for Shopping Center uses has been based on fitted curve (logarithmic) equations based on overall size of development. The average ITE shopping Center rate reflects centers averaging 200-300K feet.

TABLE 2B
MITIGATED ALTERNATIVE TRIP GENERATION: AM AND PM PEAK HOUR

Project Use	Quantity KSF/DU	AM Peak Hour Trips			PM Peak Hour Trips		
		Total	In	Out	Total	In	Out
Mid-Rise Apartment (Gross)	111	33	10	23	43	25	18
High-Rise Condominium (Gross)	85	29	6	23	32	20	12
Net New Residential Trips		**62**	**16**	**46**	**75**	**45**	**30**
Shopping Center (Gross)	7.677ksf	33	20	13	107	51	56
Internal Trip Reduction 6%		-2	-1	-1	-6	-3	-3
		31	19	12	101	48	53
Pass-By Reduction 25%--PM Only		n.a.	n.a.	n.a.	-25	-12	-13
Shopping Center (Net)		**31**	**19**	**12**	**76**	**36**	**40**
Restaurant (Gross)	4.813ksf	52	29	23	47	28	19
Internal Trip Reduction 6%		-3	-2	-1	-3	-2	-1
		49	27	22	44	26	18
Pass-By Reduction 43%--PM Only		n.a.	n.a.	n.a.	-19	-11	-8
Restaurant (Net)		**49**	**27**	**22**	**25**	**15**	**10**
Grocery (Gross)	7.636ksf	26	16	10	72	37	35
Internal Trip Reduction 6%		-2	-1	-1	-4	-2	-2
		24	15	9	68	35	33
Pass-By Reduction 36%--PM Only		n.a.	n.a	n.a.	-25	-13	-12
Grocery (Net)		**24**	**15**	**9**	**43**	**22**	**21**
Coffee Shop (Gross)	2.135ksf	216	110	106	87	44	43
Internal Trip Reduction 6%		-13	-7	-6	-5	-3	-2
		203	103	100	82	41	41
Pass-By Reduction 70%--AM & PM,		-142	-72	-70	-57	-29	-28
Coffee Shop (Net)		**61**	**31**	**30**	**25**	**12**	**13**
Net New Commercial Trips (less Internal/Pass-By)		**165**	**92**	**73**	**169**	**85**	**84**
Net New Residential & Commercial Trips		**227**	**108**	**119**	**244**	**130**	**114**
Less Existing Site Driveway Trips		10	2	8	30	15	15
TOTAL NET NEW PROJECT TRIPS		**217**	**106**	**111**	**214**	**115**	**99**

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, Apartment (#210), Shopping Center (#820), Restaurant (#932), and Supermarket (#850), 9th Edition, 2012. Fitted curve equations used for shopping center uses. Coffee Shop trip rates based on surveys conducted for three Bay Area Starbucks, April 4-7, 2005.

KSF = 1,000 square feet, DU = Dwelling Unit, n.a. = not applicable

Pass-by rate of 25% (Shopping Center), 43% (Restaurant), and 36% (Supermarket), based on ITE, Trip Generation Manual, 9th Edition User's Guide and Handbook, October 2012. Coffee Shop pass-by rate (70%) based on Starbucks surveys, 2005.

Internal Trip Reduction rate of 6% based on CCTA, Technical Procedures, Chapter 4, Adjustments to Trip Generation Rates, January 16, 2013.

These trips represent the Mitigated Alternative's projected net new trip generation. Net new Mitigated Alternative trips were determined by subtracting existing site driveway counts from overall Mitigated Alternative trip generation. Given the relatively small size of the Mitigated Alternative , and consistent with the analysis performed for the Project, the CCTA transportation model was not "re-run" to include proposed project uses. The County determined in its Draft EIR that development under the current General Plan designations would yield 24 residential units and approximately 83,000 square feet of commercial uses, compared to the existing baseline of 25 units and 37,501 square feet of commercial and institutional uses. (See DEIR, Table 3-1 on page 3-11, and page 6-23) The Mitigated Alternative's commercial (retail-restaurant) uses and housing would be generally consistent with uses allowed under existing land use regulations. . However, it is likely that model volume projections do not include the additional amount of development the Mitigated Alternative proposes. As noted, the Mitigated Alternative proposes 196 units and 22,261 square feet of commercial uses. The additional Mitigated Alternative trips were added to the no project projections even though those no project projections already include uses similar to those proposed by the Mitigated Alternative. Therefore, manually adding proposed trips is conservative in nature.

As was the case with the study of the Project, this study of the Mitigated Alternative calculated vehicle trip generation without employing any reductions to account for anticipated pedestrian or bicycle access to and from the project site. Similarly, the studies conducted for purposes of assessing the impacts of vehicular traffic conservatively assumed no trips would be taken on BART or busses. The analysis of vehicle traffic therefore conservatively maximized the amount of traffic the project site would generate. (An analysis of alternative transportation modes was also conducted, and is addressed below.)

Overall trip generation for the Mitigated Alternative is consistent with the CCTA Technical Guidelines related to overall trip reduction factors and ITE recommendations for specific trip data collection. The 7,677 square feet of general retail uses were classified using the ITE "shopping center" category because the specific nature of the uses that would occupy that space is not known. No multi-use deductions were applied to these "shopping center" trips, because the ITE trip generation rates for "shopping center" already contain trip discounts for multi-use commercial sites that attract multi-purpose trips. Also, the recommended ITE pass-by rate (50-60%) was reduced to 25% to provide very conservative analysis of these general retail uses.

The other retail components were individually categorized according to their specific uses. Because these specific trip generation rates do not already account for deductions, deductions for both pass-by and mixed use were applied. The pass-by trip reduction reflects existing vehicle trips already on Boulevard Way that would stop at one of these specific uses in the Mitigated Alternative, and then continue on their primary trip purpose. The mixed-use reduction reflects residents living in the Mitigated Alternative walking to on-site retail uses rather than driving to a similar retail use off-site. The categories that were used for these specific uses were ITE "supermarket" for the grocery uses and ITE "high-turnover sit-down" for restaurant uses. Trip generation and pass-by rates for proposed "coffee shop" uses were based on empirical data collected and used in a proprietary analysis of Bay Area Starbucks locations. The resulting pass-by rate applied to coffee shop uses (70%) is slightly higher than stated in CCTA guidelines (60% or less based on ITE recommendations). However, CCTA guidelines indicate that "published (ITE) trip generation data are based on very limited data (in some cases) and that trip generation rates should be verified through local peak-period field observation of similar uses."5 Using the empirical data for the Starbucks rate implements that recommendation. Therefore, it is reasonable to assume that trip generation studies based on

5 *Contra Costa Transportation Authority (CCTA), Technical Procedures*, January 26, 2013.

local Starbucks restaurants would be representative of estimated coffee shop trip generation and pass-by factors for the Mitigated Alternative and for the Project.

Mixed-use internal trip reductions were also applied to all retail uses. Internal trips are trips from one portion of the project site to another; the interaction between residential and commercial-retail uses on-site allowing that residents would not have to drive off-site to access specific needs related to market, coffee, and retail uses. Due to the substantially reduced size of the commercial component, the internal trip reduction factor has been reduced from the 15% used in the Project analysis to 6% used in this analysis of the Mitigated Alternative.

This methodology is more precise than combining all proposed project retail uses into a single "shopping center" category and then applying the associated ITE trip generation rate for that use. By calculating the proposed retail components of the project individually, specific rates for both trip generation and trip deductions could be applied.

The proposed Mitigated Alternative would be expected to generate 3,885 net new daily trips with 217 net new AM peak hour trips and 214 net new PM peak hour trips. These daily and peak hour trip totals would represent a decrease of 1,113 daily trips, 80 AM peak hour trips, and 191 PM peak hour trips compared to the Project.

Mitigated Alternative Trip Distribution

Consistent with the assignment of proposed Project trips, weekday AM and PM peak hour Mitigated Alternative trips were assigned onto the street network based on existing traffic flow patterns on Boulevard Way and previous transportation studies conducted for adjacent projects along Boulevard Way and in the City of Walnut Creek.[6] Consideration was also given to freeway access, project driveway location, and adjacent residential areas. Since the Mitigated Alternative would have a predominantly residential emphasis and other commercial uses are neighborhood-serving and not anticipated to be "destination oriented," the same trip distribution was used for both residential and retail uses. In addition, when considering overall project trip assignment CCTA Technical Procedures recommends "analyses should include any signalized intersection to which at least 50 (peak hour) project trips would be added. This level of impact will normally reflect a one to three percent increase in critical volumes." The traffic assignment for proposed project intersection impacts goes beyond CCTA guidelines and extends to both signalized/unsignalized intersections that would experience less than a 50 trip increase in volumes. Based on these factors, proposed Mitigated Alternative trip assignment would be as follows:

<u>Estimated Mitigated Alternative Trip Assignment:</u>

Boulevard Way to/from the west:	**30%**
Kinney Drive to/from the west:	6%
Olympic Blvd. to/from the east:	11%
Olympic Blvd. to/from the west:	4%
Tice Valley Blvd. to/from the south:	9%
Boulevard Way to/from the east:	**60%**
Flora Ave. to/from the south:	5%
Mt. Diablo Blvd. to/from the east:	36%
SR-24 to/from the west:	17%
Camino Pablo to/from the north:	2%
Saranap Avenue to/from the north:	**10%**
Total Trip Assignment:	**100%**

6AECOM, 1500 North California Boulevard Project EIR-Transportation Impact Study, City of Walnut Creek, October 2, 2012

Mitigated Alternative AM and PM peak hour trips have been shown in Figure A (attached). This trip distribution includes trips travelling to and from schools. Based on previous analyses conducted for residential development, there is typically one (1) student per 20 dwelling units. Based on 196 units, one could expect approximately 10 students. These students would likely attend any public/private school in the area based on age and advancement. School vehicle trips to/from the project site would primarily occur during the AM peak commute hours and mid-day (2:00-3:00 pm) periods. Based on the normal course of the proposed project trip distribution, vehicle trips would use Boulevard Way, Saranap Avenue, Kinney Drive, El Curtola Boulevard, Mt. Diablo Boulevard, and Olympic Boulevard to access local elementary and intermediate high schools in the area (i.e. White Pony School, Parkmead elementary/intermediate, Las Lomas High School, Acalanes High School, St. Mary's Collect, etc.).

As was the case with the Project analysis, this Mitigated Alternative analysis does not distribute a significant amount of traffic along cut-through routes or diverted traffic because such cut-through or diverted traffic is not likely to occur once the Project or Mitigated Alternative commences operation. The Draft EIR explains why the Project and its traffic calming measures are not likely to trigger drivers to divert to neighboring streets. That analysis applies equally to the Mitigated Alternative.

There is little reason for motorists to/from the project site to use either Leland Drive and/or Condit Road as a cut-through route. There are less than ten (10) peak hour vehicle trips projected to use the Kinney Drive-Condit Road corridor to access the site. For any project trip wishing to access Pleasant Hill Road via Condit Drive, there would be no reason to divert from Olympic Boulevard (south of Condit Road) or Mt. Diablo Boulevard- SR-24 (north of Condit Road) to access Condit Road. Motorists would stay on Olympic Boulevard (via Boulevard Way or use the Old Tunnel Road as the most direct and time-saving routes. The majority of the assigned project traffic using Kinney Drive to/from the west (and Condit Road) is local neighborhood trips associated with proposed project commercial-retail uses or project trips to/from the White Pony School to drop off students.

Potential cut-through routes involve local neighborhood streets that are narrow, have many driveways and parked vehicles, poor visibility and road layouts not designed for the type of traffic typically encountered on collectors and arterials. This physical description would be especially true of Leland Drive. In addition, for any project vehicle trips traveling to/from the west it would far more efficient to travel east via Boulevard Way to the SR-24 westbound on-ramp (particularly during the AM commute periods) than use Old Tunnel Road to access the freeway. Acalanes Road is not a likely cut-through candidate. It is located approximately 4.26 miles west of the proposed project site. Motorists attempting to reach the project site would not gain any time advantage using this route given multiple signals/delays along Mt. Diablo Boulevard. None of these routes would save drivers time, and would therefore not likely be used. Also, both the Pleasant Hill Road/Old Tunnel Road/SR-24 EB off-ramp and Old Tunnel Road/El Curtola Boulevard/Saranap Avenue intersections were analyzed in our study of the Project and found to operate acceptably with proposed project traffic, with plenty of capacity to accommodate additional cut-through traffic without affecting the LOS levels.

Floating Car—Diversion Analysis

The potential for "cut-through" trips from the Mitigated Alternative and from the Project, diverting from SR-24 to the Old Tunnel Road-Saranap Avenue corridor during the PM peak commute period has been further evaluated. Specifically, "floating car" travel time surveys were

conducted on both eastbound SR-24 and eastbound Old Tunnel Road-Saranap Avenue between Pleasant Hill Road and the proposed project site to record average travel times.[7] The purpose of the travel time surveys was to determine if significant time could be saved using the Old Tunnel Road-Saranap Avenue corridor or remaining on SR-24 during times of vehicle congestion on SR-24. The travel time surveys were conducted during the PM commute period between 4:00-6:30 p.m. During these time periods, a maximum of six (6) travel time surveys were conducted for each eastbound route to obtain an average travel time. During these time periods, peak vehicle congestion on eastbound SR-24 was observed and would typically become worse (i.e. slower vehicle speeds typically below) as the commute period extended through the 5:00-6:30 p.m. time period. During all three time periods, eastbound vehicle congestion on SR-24 extended from the I-680/SR24 interchange through Pleasant Hill Road west past the Lafayette BART Station (and beyond).

Based on a comparison of average vehicle travel times on eastbound State Route 24 between Pleasant Hill Road and the proposed project site and the eastbound Old Tunnel Road-Saranap Avenue corridor to access the project site, vehicle travel times would be within 20 seconds using either route. As shown in Table 3, over the course of three congested sample days the average vehicle travel time to use SR-24 between Pleasant Hill Road and the proposed project site would be 5 minutes and 23 seconds during the PM commute period. During the same time period, using the eastbound Old Tunnel Road-Saranap Avenue corridor from Pleasant Hill Road (exiting SR-24) averages approximately 5 minutes and three (3) seconds. This results in a time differential of 20 seconds or less using either route during the same eastbound PM commute period. During some time periods, it was quicker to stay on SR-24 while during other time periods it was quicker to divert to the Old Tunnel Road-Saranap Avenue corridor to access the project site.

7 Omni-Means Engineering Solutions, Travel time surveys, Eastbound State Route 24 and eastbound Old Tunnel Road-Saranap Avenue (between Pleasant Hill Road and proposed project site), 4:00-6:30 PM, March 3 (Tuesday), March 5 (Thursday), and March 6 (Friday).

TABLE 3
TRAVEL TIME COMPARISON
OLD TUNNEL ROAD/SARANAP AVENUE & STATE ROUTE 24
(PLEASANT HILL ROAD TO PROJECT SITE)
PM WEEKDAY COMMUTE PERIOD

Date	Travel Segment PHR to Project Site	Average Travel Time Minutes/Seconds
March 3, 2015 (Tuesday)	SR-24	4:32
March 5, 2015 (Thursday)	SR-24	6:03
March 6, 2015 (Friday)	SR-24	5:33
Average Travel Time	**SR-24**	**5:23**
March 3, 2015 (Tuesday)	Old Tunnel Rd./Saranap Ave.	5:40
March 5, 2015 (Thursday)	Old Tunnel Rd./Saranap Ave.	4:48
March 6, 2015 (Friday)	Old Tunnel Rd./Saranap Ave.	5:20
Average Travel Time	**Old Tunnel Rd./Saranap Ave.**	**5:03**

Source: Omni-Means Engineering Solutions, Travel time surveys, Eastbound State Route 24 and eastbound Old Tunnel Road-Saranap Avenue (between Pleasant Hill Road and proposed project site), 4:00-6:30 PM, March 3 (Tuesday), March 5 (Thursday), and March 6 (Friday), 2015.

The difference of 20 seconds between staying on SR-24 to access the project site or using the Old Tunnel Road-Saranap Avenue corridor to access the project site would not be considered significant. Therefore, Mitigated Alternative and Project trips would be no more likely to divert to the Old Tunnel Road-Saranap Avenue corridor than to stay on SR-24 to access the project site. In addition, recorded ADT volumes on both Old Tunnel Road and Saranap Avenue did not vary significantly during the course of the survey week indicating that significant additional cut-through traffic was not occurring through the Old Tunnel Road-Saranap Avenue corridor (see below).

It is noted that during times of extreme congestion on eastbound SR-24 during the PM commute period (i.e. travel speeds of less than 15 mph), many motorists on SR-24 divert onto Mt. Diablo Boulevard and Pleasant Hill Road to avoid congestion. During these extreme periods of congestion on eastbound SR-24, 50% of the Mitigated Alternative trips could likely divert off of eastbound SR-24 to the Old Tunnel Road-Saranap Avenue corridor. However, for a “worst case” analysis it has been assumed that 100% of the Mitigated Alternative trips from the west would divert from eastbound SR-24 to the Old Tunnel Road-Saranap Avenue corridor. This would equate to all inbound project trips coming from the west on SR-24 (or 35 PM peak hour trips) when combined with existing eastbound Mitigated Alternative traffic traveling on the corridor. Under these conditions, all study intersections along the Old Tunnel Road-Saranap Avenue corridor would continue to operate at acceptable conditions under cumulative year 2030 with project conditions as shown in Table 4 (LOS calculation sheets—attached).

TABLE 4
YEAR 2030 + PROJECT WITH MAXIMUM SR-24 DIVERSION
OLD TUNNEL ROAD-SARANAP AVENUE CORRIDOR
INTERSECTION LOS; PM PEAK HOUR

#	Intersection	Control Type	PM Peak Hour/LOS Delay	
			Yr. 2030+Prj.	Yr. 2030+Prj. Maximum
1	P.H.R./O.T.R/SR-24 EB off-ramp	Signal	C 28.2	C 28.3
2	Old Tunnel Rd./Buchan Dr.	TWSC	B 11.6	B 11.8
3	Old Tunnel Rd./Windsor Dr.	AWSC	A 8.2	A 8.3
4	Old Tunnel Rd./Leland Dr.	TWSC	A 9.9	B 10.1
5	O.T.R./El Curtola Blvd./Saranap Ave.	AWSC	A 8.4	A 8.5
6	Juanita Drive/Saranap Ave.	TWSC	A 9.7	A 9.8

Note: intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). N-T(NP) = Near-Term (No Project), N-T+Prj. = Near-Term plus Project, P.H.R. = Pleasant Hill Road, O.T.R. = Old Tunnel Road

The lack of cut-through traffic is confirmed by analysis of Average Daily Traffic (ADT) counts that were conducted on Old Tunnel Road and Saranap Avenue. Specifically, ADT counts were conducted on Old Tunnel Road (west of El Curtola Boulevard) and Saranap Avenue (east of El Curtola Boulevard) to gauge existing roadway capacity and potential increases in daily traffic from potential cut-through traffic.[8] West of El Curtola Boulevard, Old Tunnel Road is currently carrying 1,896 vehicles on a weekday. East of El Curtola Boulevard, Saranap Avenue is carrying 889 vehicles on a weekday. Based on a two-lane collector street status, these volumes would be well below the carrying capacity and both roadways are operating at LOS A.

With proposed Mitigated Alternative daily trips, ADT on Old Tunnel Road and Saranap Avenue would increase by 439 daily trips. ADT on Old Tunnel Road would increase to 2,335 vehicles while Saranap Avenue would increase to 1,328 daily vehicles. While these daily volumes would still be well within the LOS A range for a two-lane collector street (less than 6,000 vehicles), residents living along these roadway segments would notice an increase in daily volumes. This would equate to 23% increase along Old Tunnel Road and 50% increase in daily vehicles along Saranap Avenue.

Related to cut-through traffic using the Old Tunnel Road-Saranap Avenue corridor during the PM commute period; recorded ADT volumes were very consistent along the corridor Monday through Friday. ADT volumes on Old Tunnel Road rarely varied by more than 20 daily trips (Tuesday-Thursday) and actually decreased on Friday (typically a very congested period on SR-24 during the PM peak hour). If traffic diverted to avoid congested SR-24, one would expect these volumes to fluctuate according to the level of congestion on SR-24. However, these ADT volumes indicate a stable flow along the corridor with most vehicle traffic accessing existing residential areas off of El Curtola Boulevard, Leland Drive, Windsor Drive, and Buchan Drive.

The trip distribution analysis also does not anticipate any diversion of Rossmoor-based traffic from Boulevard Way to other roads. Unless Rossmoor residents are traveling to business or other residents located directly off Boulevard Way; most residents would use Tice Valley Boulevard via Olympic Boulevard to access the Walnut Creek downtown areas or City of Lafayette via Pleasant Hill Road. In addition, the traffic calming measures proposed by the

8 Baymetrics Traffic Resources, Average Daily Traffic (ADT) counts, Old Tunnel Road-Saranap Avenue (west and east of El Curtola Boulevard), March 1-7, 2015.

Project and by the Mitigated Alternative would create more safety through the Boulevard Way corridor by calming traffic (slightly) thereby further discouraging diversion away from this area.

Mitigated Alternative Transportation Impacts

Local Streets and SR 24

Summary. With the Mitigated Alternative generating less daily and AM/PM peak hour trips than the previously analyzed Project, all study intersections and roadway segments would continue to operate at acceptable levels. Overall intersection and roadway operation would remain consistent with Project levels or improve due to less overall traffic. All mitigation identified in the DEIR transportation section for existing plus project, near-term plus project, or cumulative plus project would continue to apply the Mitigated Alternative, with one exception. Mitigation Measure TRA-2a would not be applicable, since the Mitigated Alternative does not include a relocated oak tree in the street area.

Safety. The studies of pedestrian and bicycle safety, including crosswalk shadow studies conducted for the Project also apply to the Mitigated Alternative, but the lesser amount of traffic, pedestrians and bicyclists would result in an even greater level of safety.

Safety along Boulevard Way south of Kinney Drive would not be degraded by the Project or the Mitigated Alternative. With proposed Project traffic, the Warren Road/Boulevard Way intersection is expected to operate at LOS B under 2030 plus project conditions during the AM and PM peak hour. This is the same LOS as the intersection operates at today under existing (no project) conditions. No physical changes are planned as part of the Project or Mitigated Alternative to that corridor, and therefore would not result in the creation of any hazards or unsafe situations. Pedestrian improvements on Boulevard Way are planned as part of the approved Sufism Sanctuary project, which will greatly improve vehicle sight distance at this intersection. Specifically, the approved project would increase the radius of the curb on Boulevard Way (at Kinney Drive) and extend the pedestrian sidewalk around the curve to the edge of property. It was recommended that existing trees/shrubs along Boulevard Way be trimmed (to the extent possible). Both of these measures would improve vehicle sight distance to/from the north (towards Kinney Drive) on Boulevard Way. Vehicle sight distance to the south on Boulevard Way from Warren Road is limited due to existing shrubs/trees, utility pole, and roadway signing.

Research has been conducted on vehicle/pedestrian accident history for Boulevard Way at both Boulevard Court and Warren Road based on County/CHP/County accident records.[9] A series of vehicle/pedestrian accidents at a specific location would indicate an existing safety issue at that location. Based on Caltrans guidelines, an accident problem exists at any location that is experiencing three (3) or more vehicle/pedestrian accidents per year. Based on County collision report history from Year 2009 to present, there has been one (1) vehicle accident at the Boulevard Court/Boulevard Way intersection and one (1) vehicle accident at the Warren Road/Boulevard Way intersection over the past five years. The vehicle accident at the Boulevard Court intersection involved a solo vehicle running off Boulevard Way due to unsafe speed. The vehicle accident at Warren Road was a rear-end accident that occurred 32-feet north of the intersection (any accident within 50-feet of the intersection is considered “at” the intersection). Again, this rear-end accident is listed as unsafe speed on Boulevard Way. In addition to specific vehicle accidents occurring at these intersections, an overall “accident rate” has been calculated to determine if the rate is higher than the statewide average for similar

9 California Highway Patrol, Statewide Integrated Traffic Records (SWITRS), Boulevard Way at Boulevard Court and Leland Drive, Contra Costa County, Collision Report Database, 2009-Present.

intersections. Accident rates are calculated in terms of "accidents per million vehicles." For intersections, the rate reflects accidents per million vehicles entering the intersection and are stated as "accidents per million vehicles (or AMV). The accident rate is based on the number of accidents and average daily traffic volume. Based on Caltrans 2011 collision data, the basic average accident rate for suburban "t-type" intersections is 0.14 accidents per million vehicles.[10] The calculated accident rate for Boulevard Court and Warren Road intersections at Boulevard Way is 0.105 or 0.11 based on the number of accidents and overall ADT. This accident rate would indicate the intersections are experiencing fewer accidents than the statewide average.

The occurrence of two (2) vehicle accidents at these intersections over the last five years indicates no trend or safety issue at these locations. However, as stated in the DEIR Boulevard Way narrows in this segment and vehicle sight distance is limited due to roadway curvature and/or existing foliage. Motorists exceeding the speed limit on Boulevard Way can cause vehicle conflicts/accidents for residents turning out of minor streets along this roadway (as with any other similar roadway). Planned circulation improvements to Boulevard Way associated with the Sufism Sanctuary project would improve vehicle sight distance north of Warren Road.

For outbound motorists turning left from Boulevard Court onto Boulevard Way, there is an existing vehicle sight distance issue to the south. Vehicle sight distance limited due to the existing topography, curvature of the roadway, and that the roadway has a descending grade towards Las Trampas Creek to the south. All these factors can contribute to limited vehicle sight from Boulevard Court to the south on Boulevard Way. However, as noted above, neither the Project nor the Mitigated Alternative create or contribute to this sight distance issue.
Trip Impacts. The following are the tables (Tables 5-13) from our previous report on the Project, reflect the resulting Level of Service that is projected. The LOS resulting from the Mitigated Alternative would be the same, and the specific numerical results (volume-to-capacity ratio, ADT) would be the same or lower.

10 Caltrans, 2011 Collision Data on California State Highways (road miles, travel, collisions, collision rates), Basic Average Accident Rate Table for Intersections.

REPRODUCTION OF RESULTS FOR EXISTING PLUS PROJECT FOR (MITIGATED ALTERNATIVE WOULD BE THE SAME OR LOWER):

TABLE 5
EXISTING AND EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LOS
AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			Existing	Exist+Prj.	Existing	Exist+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.43	A 0.44	A 0.46	A 0.49
2	Boulevard Way/Warren Road	TWSC	B 10.2	B 10.7	B 11.2	B 12.1
3	Boulevard Way/Kinney Drive	TWSC	B 10.5	B 11.3	B 11.2	B 12.7
4	Boulevard Way/Saranap Avenue	RDABT	B 11.4	A 8.2	B 12.0	A 8.3
5	Boulevard Way/Flora Avenue	TWSC	B 10.1	B 11.1	B 10.8	B 12.9
6	Boulevard Way/Nicholson Road	TWSC	B 13.1	C 15.2	B 14.5	C 17.2
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.45	A 0.49	A 0.52	A 0.53
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.40	A 0.41	A 0.47	A 0.50
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.49	A 0.52	A 0.60	B 0.64
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.40	A 0.41	A 0.54	A 0.55
11	Olympic Blvd./Alpine Rd.	Signal	A 0.39	A 0.41	A 0.51	A 0.54
12	Olympic Blvd./I-680 NB Ramps	Signal	A 0.58	B 0.61	D 0.86	D 0.89
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	B 0.62	B 0.63	A 0.51	A 0.52
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.5	A 7.6	A 7.5	A 7.7
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 16.6	B 17.4	B 18.6	C 20.4

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions).

TABLE 6
EXISTING AND EXISTING PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Existing		Exist+ Project	
		ADT	LOS	ADT	LOS
Boulevard Way: Warrant Rd. to Kinney Dr.	2-Ln. Arterial	4,484	A	5,662	A
Kinney Dr. west of Boulevard Way	2-Ln. Collector	1,908	A	2,202	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	4,706	A	6,178	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	4,865	A	6,337	A

TABLE 7
FREEWAY OPERATIONS; EXISTING AND EXISTING PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	Direction	Existing LOS/Density	Exist+Prj. LOS/Density	Existing LOS/Density	Exist+Prj. LOS/Density
I-680: North. of N. Main St.	NB	C 22.3	C 22.3	D 31.7	D 31.8
	SB	C 24.2	C 24.2	C 19.7	C 19.8
I-680: South of SR-24	NB	C 25.0	C 25.1	C 21.6	C 21.7
	SB	C 22.2	C 22.3	C 24.2	C 24.3
SR-24: West of I-680	EB	B 15.3	B 15.4	D 31.3	D 31.5
	WB	D 34.4	D 34.5	B 17.0	B 17.1

Source: AECOM, 1500 N. California Boulevard EIR—Chapter 4.13 Transportation and Traffic, December 2012.. Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

REPRODUCTION OF RESULTS FOR NEAR TERM PLUS PROJECT (MITIGATED ALTERNATIVE WOULD BE THE SAME OR LOWER):

TABLE 8
NEAR-TERM (NO PROJECT) AND NEAR-TERM PLUS PROJECT CONDITIONS: INTERSECTION LOS AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			N-T (NP)	N-T+Prj.	N-T (NP)	N-T+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.44	A 0.45	A 0.50	A 0.50
2	Boulevard Way/Warren Road	TWSC	B 10.4	B 10.9	B 11.5	B 12.4
3	Boulevard Way/Kinney Drive	TWSC	B 10.8	B 11.5	B 11.5	B 13.0
4	Boulevard Way/Saranap Avenue	TWSC	B 11.6	A 8.2	B 12.4	A 8.3
5	Boulevard Way/Flora Avenue	TWSC	B 10.2	B 11.3	B 11.1	B 13.2
6	Boulevard Way/Nicholson Road	TWSC	B 13.6	C 15.7	B 14.9	C 17.8
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.47	A 0.50	A 0.54	A 0.54
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.41	A 0.42	A 0.49	A 0.51
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.49	A 0.53	B 0.61	B 0.66
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.42	A 0.42	A 0.57	A 0.58
11	Olympic Blvd./Alpine Rd.	Signal	A 0.40	A 0.42	A 0.53	A 0.56
12	Olympic Blvd./I-680 NB Ramps	Signal	A 0.60	B 0.62	**E 0.91**	**E 0.93**
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	B 0.62	B 0.63	A 0.52	A 0.53
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.5	A 7.6	A 7.5	A 7.7
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 16.6	B 16.7	B 18.6	C 21.0

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). N-T(NP) = Near-Term (No Project), N-T+Prj. = Near-Term plus Project

TABLE 9
NEAR-TERM PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Near-Term		NT + Project	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-Ln. Arterial	4,700	A	5,878	A
Kinney Dr. west of Boulevard Way	2-Ln. Collector	1,958	A	2,252	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	4,950	A	6,422	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	5,180	A	6,652	A

TABLE 10
FREEWAY OPERATIONS; NEAR-TERM AND NEAR-TERM PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	Direction	Near-Term LOS/Density	N-T+Prj. LOS/Density	Near-Term LOS/Density	N-T+Prj. LOS/Density
I-680: North. of N. Main St.	NB	C 22.5	C 22.6	D 32.3	D 32.4
	SB	C 24.6	C 24.6	C 20.2	C 20.3
I-680: South of SR-24	NB	C 25.0	C 25.1	C 21.8	C 21.9
	SB	C 22.4	C 22.5	C 24.4	C 24.5
SR-24: West of I-680	EB	B 15.5	B 15.5	D 31.4	D 32.1
	WB	**E 36.4**	**E 36.6**	B 17.2	B 17.4

Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl). N-T+Prj. = Near-Term plus Project

REPRODUCTION OF RESULTS FOR CUMULATIVE PLUS PROJECT (MITIGATED ALTERNATIVE WOULD BE THE SAME OR LOWER):

TABLE 11
YEAR 2030 CUMULATIVE (NO PROJECT) AND YEAR 2030 CUMULATIVE PLUS PROJECT CONDITIONS: INTERSECTION LOS / AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			2030 (NP)	2030+Prj.	2030 (NP)	2030+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.44	A 0.45	A 0.50	A 0.50
2	Boulevard Way/Warren Road	TWSC	B 10.7	B 11.2	B 12.0	B 13.0
3	Boulevard Way/Kinney Drive	TWSC	B 10.9	B 11.7	B 11.9	B 13.5
4	Boulevard Way/Saranap Avenue	RDABT	B 12.0	A 8.1	B 12.9	A 8.2
5	Boulevard Way/Flora Avenue	TWSC	B 10.5	B 11.6	B 11.5	B 14.0
6	Boulevard Way/Nicholson Road	TWSC	B 14.9	C 17.2	C 16.4	C 19.8
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.60	B 0.61	C 0.74	C 0.75
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.49	A 0.50	B 0.62	B 0.64
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.60	B 0.64	C 0.74	C 0.78
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.48	A 0.49	C 0.72	C 0.73
11	Olympic Blvd./Alpine Rd.	Signal	A 0.51	A 0.52	A 0.60	B 0.63
12	Olympic Blvd./I-680 NB Ramps	Signal	E 0.92	E 0.94	**F 1.15**	**F 1.18**
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	**D 0.85**	**D 0.86**	B 0.66	B 0.67
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.8	A 7.8	A 7.8	A 8.0
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 19.2	B 19.8	C 24.0	C 26.2

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). 2030(NP) = 2030 (No Project), 2030+Prj. = 2030 plus Project

TABLE 12
YEAR 2030 CUMULATIVE (NO PROJECT) AND PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Yr. 2030 (NP)		Yr. 2030+Prj.	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-Ln. Arterial	5,448	A	6,626	A
Kinney Dr: west of Boulevard Way	2-Ln. Collector	2,318	A	2,612	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	5,718	A	7,190	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	5,911	A	7,383	A

TABLE 13
FREEWAY OPERATIONS; YEAR 2030 CUMULATIVE (NO PROJECT) AND PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	Direction	2030 (NP) LOS/Density	2030+Prj. LOS/Density	2030 (NP) LOS/Density	2030+Prj. LOS/Density
I-680: North. of N. Main St.	NB	D 26.3	D 26.4	**E 38.8**	**E 38.9**
	SB	D 29.0	D 29.0	C 22.3	C 22.4
I-680: South of SR-24	NB	D 28.8	D 28.8	C 25.9	C 26.0
	SB	D 26.3	D 26.4	D 26.9	D 26.9
SR-24: West of I-680	EB	C 18.3	C 18.3	**E 41.8**	**E 42.1**
	WB	**F 46.6**	**F 46.9**	C 20.8	C 20.9

Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

The additional study performed for the Old Tunnel Road – Saranap Avenue corridor confirmed there would be no significant impacts along this corridor. Consistent with the traffic analysis of the Project, all intersection operations along Old Tunnel Road and Saranap Avenue would continue to operate acceptably during the PM peak hour with vehicle trips from the Mitigated Alternative. As shown in Table 14, all study intersections along the Old Tunnel Road-Saranap Avenue corridor would be operating at acceptable levels (LOS C or better) during the PM peak hour (worst case). It is noted that stated LOS for the Pleasant Hill Road/Old Tunnel Road/SR-24 EB off-ramp intersection is consistent with ongoing studies performed for the proposed "Terraces" residential project in the City of Lafayette. In addition, there was no need to analyze Old Tunnel Road/Linda Vista Lane intersection due to the lack of minor street traffic to/from Linda Vista Lane. However, based on higher generated traffic vehicular traffic to/from Leland Lane/Old Tunnel Road intersection (which would be operating at LOS A), overall operation at Old Tunnel Road/Linda Vista Lane would be LOS A under all scenarios (LOS Calculation Sheets attached).

TABLE 14
EXISTING, EXIST+MITIGATED ALTERNATIVE, NEAR-TERM+MITIGATED ALTERNATIVE, YEAR 2030+ MITIGATED ALTERNATIVE
OLD TUNNEL ROAD-SARANAP AVENUE CORRIDOR
INTERSECTION LOS; PM PEAK HOUR

#	Intersection	Control Type	PM Peak Hour/LOS Delay			
			Exist (NP)	Exist+Prj.	N-T+Prj.	Yr. 2030+Prj.
1	P.H.R./O.T.R/SR-24 EB off-ramp	Signal	C 26.1	C 26.1	C 27.2	C 36.5
2	Old Tunnel Rd./Buchan Dr.	TWSC	B 10.7	B 10.8	B 10.9	B 11.6
3	Old Tunnel Rd./Windsor Dr.	AWSC	A 7.7	A 7.8	A 7.8	A 8.2
4	Old Tunnel Rd./Leland Dr.	TWSC	A 9.4	A 9.5	A 9.5	A 9.9
5	O.T.R./El Curtola Blvd./Saranap Ave.	AWSC	A 7.9	A 8.0	A 8.0	A 8.4
6	Juanita Drive/Saranap Ave.	TWSC	A 9.1	A 9.2	A 9.3	A 9.7

Note: intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). N-T(NP) = Near-Term (No Project), N-T+Prj. = Near-Term plus Project

The Mitigated Alternative would contribute 439 daily trips to the Old Tunnel Road-Saranap Avenue corridor with 16 AM peak hour trips (7 in, 9 out) and 16 PM peak hour trips (9 in, 7 out). PM peak hour east-west through-volumes on Old Tunnel Road are averaging approximately 265 vehicles between Buchan Drive and El Curtola Boulevard. The addition of 16 PM peak hour trips from Mitigated Alternative would represent a six percent increase in PM peak hour traffic volumes along the corridor. It is likely that residents living along Old Tunnel Road would notice this very slight increase in peak hour traffic. However, overall roadway operations during this time period would remain very acceptable with all intersection operations at LOS B or better between Buchan Drive and El Curtola Boulevard. In addition, daily traffic volumes recorded on Old Tunnel Road west of El Curtola Boulevard indicate an average of 1,933 daily vehicles (two-way).

Other Intersections Not Likely To Experience Impacts. As was the case with the analysis of Project traffic, this analysis of the Mitigated Alternative is based upon review of intersections and roadways further away or not likely to experience significant impacts. These intersections would experience so little traffic generated by either the Project or the Mitigated Alternative, that they normally would not be mentioned in detail in a traffic report.

Consistent with the transportation analysis of the Project, the intersections of Pleasant Hill Road/Mt. Diablo Blvd./SR-24 EB on-ramp and the SR-24 WB on-ramp (outside Lafayette) have been analyzed with proposed project traffic and found to operate acceptably under all three

project scenarios. The traffic analysis evaluated 13 intersections and six freeway segments in Contra Costa County and the cities of Walnut Creek and Lafayette. With respect to project vehicle trips to/from the City of Lafayette, the analysis evaluated the following "gateway" intersections that would allow access to the project site from the Pleasant Hill Road-Olympic Boulevard corridor areas:

1. Boulevard Way/Tice Valley Boulevard/Olympic Boulevard (Intersection #1 in our study)
2. Pleasant Hill Road/Old Tunnel Road/SR-24 Eastbound off-ramp (Intersection #15 in our study)
3. Old Tunnel Road/El Curtola Boulevard/Saranap Avenue (Intersection #14 in our study)
4. Boulevard Way/Kinney Drive (Intersection #3 in our study)

All four intersections were evaluated for existing, near-term (no Project), existing plus Project, near-term plus Project, cumulative year 2030 (no Project), and cumulative year 2030 plus Project conditions. In all cases, the four intersections were found to operate acceptably within the City of Lafayette, City of Walnut Creek, and Contra Costa County significance thresholds. Because these intersections operate acceptably when Project traffic is included, it can be concluded that they would operate acceptably with the lesser amount of Mitigated Alternative traffic is included.

Neither the Project nor the Mitigated Alternative would add enough traffic to other intersections or routes to appreciably affect traffic levels. Related to the Pleasant Hill Road/Mt. Diablo Blvd./SR-24 Eastbound On-Ramp intersection, previous recent transportation studies have already determined that this intersection would be operating at LOS B under Year 2030 cumulative conditions during both the AM and PM peak hours.[11] Given the limited number of trips the Project [13 AM peak and 14 PM peak] and the Mitigated Alternative [10 AM peak and 11 peak] would generate at this onramp, it is clear that the LOS B conclusion would not change.

Regarding the loop on-ramp to SR-24 Westbound from Pleasant Hill Road (near its intersection with Mt. Diablo Boulevard), this on-ramp is uncontrolled. Vehicle flows on this westbound SR-24 on-ramp are largely controlled westbound traffic flows on SR-24 and motorists ability to merge into westbound flows. During the AM peak commute period, vehicle flow on the on-ramp can delayed due to congested SR-24 westbound flow and the southbound SR-24 on-ramp merge from Pleasant Hill Road. For these reasons, proposed project traffic from the mitigated alternative would use the much faster and more convenient westbound SR-24 on-ramp at the Mt. Diablo Boulevard/Boulevard Way/SR-24 WB on-ramp just east of the proposed project site.

Trips using the Pleasant Hill/Condit Road, Sunset Loop/Meek Place, and Meek Place/Leland Drive intersections would primarily be originating from the neighborhoods immediately surrounding these intersections and/or comprise project trips accessing the White Pony School or Sun Valley Swimming Pool recreational area. Using these intersections would require drivers to take a highly circuitous route between Pleasant Hill Road and the project site and therefore these intersections are not likely to experience traffic generated by the Project or the Mitigated Alternative. All vehicle trips wishing to access Pleasant Hill Road would likely use the much more direct route of Saranap Avenue via Old Tunnel Road and/or Boulevard Way via Olympic Boulevard. The trips using this more direct route are accounted for in this traffic analysis. The intersection at Kinney Drive/Boulevard Way/Garden Court, which would provide access to these intersections, is projected to operate at LOS B under cumulative plus project conditions. For the Mitigated Alternative, 14 AM peak hour and 16 PM peak hour trips are projected to be traveling east-west through the Kinney Drive neighborhood and dissipate between Pleasant Hill Road

11 TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012.

and Boulevard Way. Cumulative year 2030 (no project) AM and PM two-way peak hour volumes on Kinney Drive west of Boulevard Way are 136 vehicle and 126 vehicles, respectively. Based on these very low peak hour volumes on Kinney Drive, and the minimal number of trips to and from the project site that would use these intersections, neither the Project nor the Mitigated Alternative is likely to affect the LOS along these routes/intersections.

In addition, the Pleasant Hill Road/Condit Road intersection has been signalized by the City of Lafayette and is used for controlling vehicle speeds on Pleasant Hill Road and safer vehicle egress to/from Condit Road. Any mitigated alternative generated trips using the Pleasant Hill Road/Condit Road intersection would either be Lafayette residents already on the street network who reroute their trips to access the commercial uses on the project site or accessing the White Pony School and/or Sun Valley Swim Club. The addition of 7-8 peak hour Mitigated Alternative trips at this intersection would not degrade overall operations particularly with the recent addition of signal control to this intersection.

Previous transportation studies conducted for the Leland Drive/Meek Place/Condit Drive intersection indicate LOS A operations during both the AM and PM peak hours and this would not change with proposed project trips. The Sunset Loop/Meek Place intersection is directly east of Leland Drive. AM and PM peak hour volumes extending through this intersection are 150 or less during these time periods which would indicate acceptable operations. Neither the Project nor the Mitigated Alternative would add more than 8-10 peak hour trips to either of these intersections. Therefore, the Sunset Loop/Meek Place intersection would not experience a significant increase in vehicle trips from proposed project uses that would cause operational impacts.

The Mitigated Alternative is estimated to add 10 peak hour trips to the Pleasant Hill Road/Olympic Boulevard intersection, while the Project is projected to generate 11 peak hour trips, neither of which is enough to appreciably affect this intersection or the Olympic Boulevard corridor or Glenside Drive north areas. It is understood that these intersections experience significant vehicle queuing during the AM commute periods when school related traffic (primarily) is high. The City of Lafayette is currently evaluating circulation improvements for this corridor (*Stantec*, *Reliez Station Road/Olympic Corridor Study, City of Lafayette, 2015*) to improve traffic flow and vehicle delays. Accordingly, neither the Project nor the Mitigated Alternative would interfere with any plans Lafayette has regarding those roadways.

From Pleasant Hill Road, Olympic Boulevard extends west to its intersection with Reliez Station Road. Reliez Station Road then extends south over the hill to its intersection with Glenside Drive. Similar to the Pleasant Hill Road/Olympic Boulevard intersection, both the Reliez Station Road/Olympic Boulevard and Reliez Station Road/Glenside Drive intersections are all-way-stop controlled and experience significant vehicle queuing during the AM commute periods when school related traffic (primarily) is high. Again, the Mitigated Alternative would add 10 peak hour trips or less to these intersections. The City of Lafayette is currently evaluating circulation improvements for this corridor (*Stantec*, *Reliez Station Road/Olympic Corridor Study, City of Lafayette, 2015*) to improve traffic flow and vehicle delays. Accordingly, neither the Project nor the Mitigated Alternative would interfere with any plans Lafayette has regarding those roadways and related project traffic would not be cumulatively considerable.

The Mitigated Alternative would add 8 AM peak hour and 8 PM peak hour trips to the Camino Diablo/El Curtola Boulevard intersection. Again, a portion of this traffic would be Lafayette residents already on the street network, who would change their routes once the Mitigated Alternative is constructed to access the commercial uses in the project site or project trips

travelling to existing schools north of SR-24. Neither this increase of 8 peak hour trips, nor the Project's projected 14 peak hour trips, is enough to appreciably affect intersection operations.

The Mitigated Alternative would be adding less than 8 peak hour trips to the Camino Diablo/Stanley Boulevard intersection, compared to the Project's 11 trips. These numbers are too low to affect overall intersection operations based on overall intersection LOS.

The Stanley Boulevard/Deer Hill Road/Pleasant Hill Road intersection is operating poorly (LOS F) during both the AM and PM peak hour based on recent transportation studies conducted for the proposed Terraces of Lafayette project.[12] The addition of proposed Saranap Village Mitigated Alternative or Project trips at this intersection (less than 10 peak hour trips) would represent 0.002% of overall cumulative volumes. This increase is within the range of statistical insignificance and would not present a noticeable contribution to this cumulative impact.

Finally, additional study was conducted of a hypothetical scenario in which all proposed project traffic to/from the west assigned to Saranap Avenue-Old Tunnel Road and SR-24 used Old Tunnel Road (27% of all proposed project trips). As explained above (see Mitigated Alternative Trip Distribution section of this report), this cut-through traffic is not likely and is not expected to occur. However, if it did, all intersection and roadway operation would continue to perform at acceptable levels. (The County standards state that acceptable levels are LOS C-D or better).

I-680 Freeway Segments

Analysis of the I-680 Lawrence Way on-ramp has been conducted and included below in Table 15. The Mitigated Alternative would be adding very few trips to the northbound I-680 Lawrence Way on-ramp during the AM and PM peak hour (less than four [4] peak hour trips). Under cumulative year 2030 plus project conditions, ramp density would be operating at unacceptable conditions (LOS F / 33.6 density). However, this increase would represent a very small increment over year 2030 (no project) conditions (LOS F / 33.5 density). The marginal increases from a result of Mitigated Alternative traffic are not cumulatively considerable and 0.01 change in density is within the range of statistical significance and would be considered less than significant with regard to operations of the surrounding mainline and ramp facilities (ramp density LOS sheets attached).

TABLE 15
EXISTING, EXIST+MITIGATED ALTERNATIVE, NEAR-TERM+MITIGATED ALTERNATIVE, YEAR 2030+ MITIGATED ALTERNATIVE
I-680: NB ON-RAMP FROM LAWRENCE WAY
LOS/DENSITY; AM/PM PEAK HOUR

Intersection	Control Type	AM Peak Hour LOS/Density			
		Exist (NP)	Exist+Prj.	N-T+Prj.	Yr. 2030+Prj.
I-680 Lawrence Way On-Ramp		C 21.1	C 21.2	C 21.2	C 22.5
		PM Peak Hour LOS/Density			
I-680 Lawrence Way On-Ramp		D 29.0	D 29.1	D 30.2	F 33.6

Source: DC&E, BART Transit Village Draft EIR, Transportation and Traffic, City of Walnut Creek, 2012. Proposed Mitigated Alternative trips added to ramp/density calculations.

The likelihood of proposed Mitigated Alternative trips using the I-680 northbound off-ramp at I-680 / Ygnacio Valley Road would be very, very small. Any project trips using I-680 to/from the south would exit at the I-680/Olympic Boulevard northbound off-ramp rather than continuing to

12TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012.

travel north to the northbound I-680 off-ramp at Ygnacio Valley Road. This would be a highly circuitous route to reach the project site. Similarly, any project trips using SR-24 to/from the west would exit at the SR-24 eastbound off-ramp at Mt. Diablo Boulevard rather than continue to the eastbound SR-24 Ygnacio Valley Road off-ramp.

Analysis of the northbound I-680 Ygnacio Valley Road off-ramp has been conducted and included below in Table 16. The proposed Mitigated Alternative would be adding very few trips to the northbound I-680 Ygnacio Valley Road off-ramp during the AM and PM peak hour (less than three [3] peak hour trips). Under cumulative year 2030 plus project conditions, ramp density would be operating at unacceptable conditions (LOS F / 28.0 density). However, this increase would represent a very small increment over year 2030 (no project) conditions (LOS F / 27.9 density). The marginal increases from a result of proposed project traffic are not cumulatively considerable and would be within the range of statistical significance and would be considered less than significant with regard to operations of the surrounding mainline and ramp facilities (ramp density LOS sheets attached).

TABLE 16
EXISTING, EXIST+MITIGATED ALTERNATIVE, NEAR-TERM+MITIGATED ALTERNATIVE, YEAR 2030+ MITIGATED ALTERNATIVE
I-680: NB OFF-RAMP TO YGNACIO VALLEY ROAD
LOS/DENSITY; AM/PM PEAK HOUR

Intersection	Control Type	AM Peak Hour LOS/Density			
		Exist (NP)	Exist+Prj.	N-T+Prj.	Yr. 2030+Prj.
I-680 NB Off-Ramp to Ygnacio Valley		A 5.2	A 5.2	A 5.3	A 9.7
		PM Peak Hour LOS/Density			
I-680 NB Off-Ramp to Ygnacio Valley		B 12.7	B 12.7	B 12.7	F 28.0

Source: DC&E, BART Transit Village Draft EIR, Transportation and Traffic, City of Walnut Creek, 2012. Proposed Mitigated Alternative trips added to ramp/density calculations.

Freeway segment operations for the I-680 segment between North Main Street and Ygnacio Valley Road have been calculated in Tables 17 and 18. The proposed Mitigated Alternative would not increase the peak hour density by more than 0.1 passenger cars per mile per lane for this freeway segment.

TABLE 17
I-680 SOUTHBOUND FREEWAY OPERATIONS

Scenario	Freeway Segment N. Main St. – Ygnacio Valley Road	
	AM Peak Density / LOS	PM Peak Density / LOS
Existing	C 21.3	C 22.2
Existing plus Mitigated Alternative	C 21.4	C 22.3
Near-Term	C 21.3	C 22.3
Near-Term plus Mitigated Alternative	C 21.4	C 22.4
Yr. 2030	C 23.9	D 28.2
Yr. 2030 plus Mitigated Alternative	C 23.9	D 28.2

Source: W-Trans, Traffic Impact Study for Shadelands Gateway Specific Plan, City of Walnut Creek, December, 2013. Proposed Mitigated Alternative trips added to ramp/density calculations.

TABLE 18
I-680 NORTHBOUND FREEWAY OPERATIONS

Scenario	N. Main St. – Ygnacio Valley Road	
	AM Peak Density / LOS	PM Peak Density / LOS
Existing	D 26.3	E 36.7
Existing plus Mitigated Alternative	D 26.4	E 36.8
Near-Term	D 26.3	E 36.9
Near-Term plus Mitigated Alternative	D 26.4	E 36.9
Yr. 2030	C 24.9	D 33.0
Yr. 2030 plus Mitigated Alternative	C 24.9	D 33.0

Source: W-Trans, Traffic Impact Study for Shadelands Gateway Specific Plan, City of Walnut Creek, December, 2013. Proposed Mitigated Alternative trips added to ramp/density calculations.

Pedestrian and Bicycle Transportation

Existing pedestrian sidewalks exist along both sides of Boulevard Way in the project site area. The sidewalk on the north side of Boulevard Way extends from proposed project site to downtown Walnut Creek. There is also a sidewalk along the west side of Saranap Avenue. New pedestrian sidewalks are currently being constructed along Boulevard Way west of Saranap Avenue as part of the approved Sufism Sanctuary project that will provide improved access to/from the Kinney Drive neighborhood. The proposed project would greatly enhance pedestrian access and safety through the incorporation of vehicle roundabouts, reduced travel lanes on Boulevard Way, increased pedestrian crossings, and wider pedestrian sidewalks. The project will accordingly not overburden pedestrian facilities, and there will be safe walking paths for the future residents of the project.

As noted, the Mitigated Alternative would add 16 PM peak hour vehicle trips to the Old Tunnel Road – Saranap Avenue corridor. This would equate to a new vehicle trip along the corridor approximately every three minutes and 45 seconds during the PM peak hour. This small increase in vehicle traffic would not result significant driveway access or pedestrian safety issues.

The Contra Costa County Complete Streets Policy envisions more “livable” streets that would accommodate all modes of travel including auto, transit, pedestrian, and bicycles. To accomplish this goal, multimodal levels of travel must (to the extent possible) be provided in all newly designed roadways where the County deems multimodal design appropriate. For existing roadways such as Boulevard Way, the proposed project would install traffic calming measures to improve both vehicle and pedestrian safety as well as accommodate bicycle travel through the corridor. This would be accomplished by installing roundabouts, safer pedestrian crosswalks, and wider pedestrian sidewalks throughout the proposed project frontage. With respect to bicycle travel Boulevard Way, it is expected that bicycle traffic would gradually increase along the corridor if any new development is constructed, and more bicycle friendly circulation improvements could occur. Though removed from consideration as the preferred route for the Lafayette-Moraga Iron Horse Trail connector study, Boulevard Way is identified as a Class III facility by Contra Costa County (bike route). The proposed project would provide wider travel lanes through the project frontage to allow greater distances between parked vehicles and bicyclists. In addition, “sharrow” markings would be installed along the travel lanes to warn motorists the share the lane with bicycle travel. Signs could also be placed in the diagonal parking areas warning motorists backing out of diagonal parking spaces to watch for bicyclists/through-traffic.

It is noted that a new pedestrian crosswalk is proposed to be installed mid-block on Boulevard Way extending between mitigated alternative site's A and B (see Exhibit 1). Located approximately mid-block between the proposed roundabout at the Saranap Avenue/Boulevard Way intersection and Flora Avenue, the crosswalk would provide access between off-street parking located in Site A and residential-retail areas located across the street in Site B. As shown, the mid-block crosswalk would extend south from a rectangular "bulb-out" (on the east side of Site A's driveway) across Boulevard Way to Site B's sidewalk area. On the south side of the street, the crosswalk would extend through planned diagonal parking spaces with minor "chevron" buffer striping on either side. However, this design would require vehicles parked on the south side of the street (immediately east of the crosswalk) to back out over the crosswalk as currently shown. It is recommended that a larger rectangular bulb-out be installed on the south side of Boulevard Way where the mid-block crosswalk connects to Site B (similar to the Site A connection) or the mid-block crosswalk should be removed to prevent pedestrian/vehicle conflicts.

The traffic analysis for the Project goes into great detail related to proposed bike routes, accommodating bicycle traffic, bicycle safety and potential Class III bike routes via Boulevard Way and Kinney Drive based on bicycle plans from Contra Costa County. Additional reports prepared by Fehr & Peers further address bicycle lanes along Boulevard Way. Though the project site is located in the County and is therefore subject only to County plans, the Project report also evaluated bicycle route plans from the City of Walnut Creek, and the City of Lafayette.

These analyses and conclusions apply equally to the Mitigated Alternative. The Mitigated Alternative will not interfere with any plans Lafayette has to build bicycle facilities in Lafayette. The Lafayette-Moraga Trail to Iron Horse Trail Connector Study is ongoing and has not established a preferred alternative through the study area. This is acknowledged in the Project study and the potential for a connector through Boulevard Way is addressed. Both the Project and the Mitigated Alternative provide for bike lanes consistent with applicable plans and also accommodate bicycle-related impacts. The current Olympic Corridor Trail Connector Study Draft Preferred Alignment Report (*Contra Costa County—July 2014*) indicates the route alternative of Pleasant Hill Road, Condit Drive, Meek Drive, Sunset Drive, Kinney Drive, Boulevard Way, to Mt. Diablo Boulevard has been eliminated from consideration.

The Mitigated Alternative would add approximately 73 AM peak hour trips and 79 PM peak hour trips to Boulevard Way between Saranap Avenue and Kinney Drive. Between Kinney Drive and Olympic Boulevard, the Mitigated Alternative would add 59 AM peak hour trips and 63 PM peak hour trips to the corridor. All intersection operations along these Boulevard Way corridors would be very acceptable LOS A-B under year 2030 plus project conditions. However, residents living along these Boulevard Way roadway segments would notice in an increase in daily and peak hour traffic volumes from the proposed project. As previously noted, the Boulevard Way segment between Molly Way (just west of Saranap Avenue) past Kinney Drive to edge of property is being improved by the ongoing Sufism Sanctuary project and would provide much improved pedestrian facilities (crosswalks, sidewalks). The segment of Boulevard Way between Warren Road and Olympic Boulevard has unimproved shoulders extending to the roadway bridge (over Las Trampas Creek). Pedestrians typically walk on the west side of Boulevard Way in this segment to remain visible to motorists and use the limited dirt shoulder. However, as the segment currently exists, pedestrian and bicycle traffic use along this corridor is not high due to the physical characteristics of the roadway and limited off-street pedestrian travel.

In addition, the County is evaluating, on its own and not as part of this project, segments of Boulevard Way both east and west of the project site to determine if bicycle safety

improvements could be considered between Olympic Boulevard and Saranap Avenue and Flora Avenue to Mt. Diablo Boulevard. As previously noted, the County has eliminated the street segments between Condit Road and Boulevard Way (Leland Drive, Sunset Loop, Meek Place, Kinney Drive) for its consideration of connecting the Lafayette Moraga Trail--Iron Horse Trail. However, the approved Sufism Sanctuary project will be improving Boulevard Way along its entire frontage between Warren Road and Molly Way (south side) west of the proposed project site. These improvements will include new pedestrian facilities (sidewalks, crosswalks), a larger radius curve on Boulevard Way at Kinney Drive, and minor widening of the eastbound travel lane on Boulevard Way. These circulation improvements would help to improve bicycle safety in this segment of Boulevard Way. However, in other segments of the Boulevard right-of-way for bicycle improvements is not available and this is particularly true between Olympic Boulevard and Warren Road. In this segment, bicycle signing would likely be the maximum improvements that would be possible. This segment of Boulevard Way is not classified as a Class III bike route and is not encouraged for bicycle use.

As previously noted, the County has eliminated the east-west street segments between Pleasant Hill Road (in Lafayette) and Mt. Diablo Boulevard (in Walnut Creek) that include Condit Road, Leland Drive, Sunset Loop, Meek Place, Kinney Drive, Boulevard Way for consideration in connecting the Lafayette Moraga Trail--Iron Horse Trail. However, the approved Sufism Sanctuary project will be improving the Boulevard Way street segment along its entire frontage from its edge of property near Warren Road northeast to Molly Way (south side) just west of the proposed Saranap Village project site. These improvements will include new pedestrian facilities (sidewalks, crosswalks), increased vehicle sight distance at the curve on Boulevard Way at Kinney Drive, and minor widening of the eastbound travel lane on Boulevard Way. These circulation improvements would help to improve bicycle safety in this segment of Boulevard Way. In addition, vehicle sight distance is typically adequate (i.e. travel lanes are straight with little variance in grade) in these areas so both bicyclists and motorists can travel in safe manor and see each other.

Delivery Vehicles

Delivery trucks will be scheduled during the early morning or late evening hours when traffic volumes on Boulevard Way are very light. In addition, loading areas will be provided for all the commercial-retail uses (which are proposed on Site A and Site B) at locations that would remove delivery trucks from the flow of through-traffic on Boulevard Way. Accordingly, delivery vehicles are not expected to affect traffic in an appreciable way.

Driveway Operation

The main full-access driveway for the Mitigated Alternative, located east of Saranap Avenue serving Project Site A, would operate acceptably under all three analyzed project scenarios (see intersection LOS sheets—attached). The project driveway incorporated into the proposed roundabout at the Saranap Avenue/Boulevard Way intersection has been analyzed as part of the separate roundabout analysis, provided concurrently with this Traffic Impact Analysis. . Finally, the proposed project driveway serving Project Site C would operate acceptably as previously identified in our analysis of the Project (no change in development intensity).

Roundabout Operation

The roundabout proposed for the Saranap Avenue/Boulevard Way intersection and traffic circle located just west of Flora Avenue as part of proposed street frontage improvements would serve to increase traffic capacity and reduce overall accidents. While overall vehicle speeds would be

reduced along Boulevard Way through the project frontage areas between Flora Avenue and Saranap Drive, vehicle speeds would not increase outside of these areas beyond what current vehicle speeds are today in these areas with no traffic calming measures. Roundabouts add capacity and efficiency while reducing overall vehicle delays. In addition, roundabouts have been shown to reduce fatal and injury accidents. Studies performed by the Federal Highway Administration (FHWA) indicate that roundabouts can reduce all accidents by 70%, injury accidents by 88%, and fatal accidents by 100%.[13]

A complete "fast-path" analysis for proposed roundabout design at the Saranap Avenue/Boulevard Way intersection was conducted for the Mitigated Alternative *(see Phase III—Saranap Avenue/Boulevard Way Roundabout Feasibility Analysis—Omni-Means, June 2015*). Pedestrian safety is paramount to this design effort. As previously stated, the roundabout proposed for the Saranap Avenue/Boulevard Way intersection and traffic circle located just west of Flora Avenue as part of proposed street frontage improvements for the Project and for the Mitigated Alternative would actually serve to increase traffic capacity and reduce overall accidents. While overall vehicle speeds would be reduced along Boulevard Way through the project frontage areas between Flora Avenue and Saranap Drive, vehicle speeds would not increase outside of these areas beyond what current vehicle speeds are today in these areas with no traffic calming measures. Roundabouts add capacity and efficiency while reducing overall vehicle delays.

The roundabout and traffic circle also would result in minimal delay, and would cause an average vehicle delay in year 2030 cumulative plus Project conditions of less than six seconds. In other words, during both the AM and PM peak hours, average vehicle delay would be less than six seconds for each of the approaches and for the overall Saranap Avenue/Boulevard Way intersection, resulting in a Level of Service of A. The 95th percentile peak hour vehicle queues would be less than 40 feet (or about two cars) for all approaches. Accordingly, while speeds would be reduced on Boulevard Way, overall traffic delay would remain relatively low.

Transit Service

The report prepared for the Project demonstrates sufficient capacity on the bus routes that pass by the project site. Because the Mitigated Alternative will generate fewer transit riders, capacity will be sufficient for the Mitigated Alternative as well. Discussions with County Connection planning staff indicate that there is excess capacity on both County Connection route #1 and #301 (traveling on Boulevard Way) and route #25 (traveling on Olympic Boulevard). CC Route #1 currently averages 11 riders per hour during the weekday periods while CC Route #301 averages 7.2 riders per hour on the weekends. Therefore, the addition of riders from the Project or from the Mitigated Alternative would not significantly affect capacity on adjacent bus routes. County Connection staff also indicates that CC Route #25 has even lower ridership averages and would not be affected by increased ridership from proposed project uses.

BART parking will not be adversely affected by the Mitigated Alternative or the Project. Most residents living at the proposed project site would find easy access to the Lafayette and/or Walnut Creek BART Stations via County Connection Bus Route #1 or #301 (weekends). However, it is expected that some residents may drive their vehicles and this would amount to 6-7 trips. This conservatively assumes 10% of the residential project component would use BART and/or other transit modes. This would not significantly affect BART access and/or parking demand.

13 Federal Highway Administration, Roundabouts, Safety, U.S. Department of Transportation, 2009.

It is noted that development projects located adjacent to the Walnut Creek BART station (or within a reasonable walking distance) are currently allowed a 20% transit use ratio for residential uses according to Year 2010 Census data for land uses adjacent to the Walnut Creek BART Station (within a half-mile). This 20% transit use ratio was not assumed in the vehicle impact analysis of the Project or the Mitigated Alternative. However, the 20% transit use ratio is a useful starting point for determining how many BART riders and/or other transit trips the Mitigated Alternative would produce (though no deductions were taken from Mitigated Alternative trip generation rates for BART riders). Typically, the gross ITE trip generation estimates for the Mitigated Alternative would be reduced by 20% to account for trips made by non-auto modes, primarily walking trips not only to BART but also to other nearby employment, shopping and dining destinations, and also by bus. However, the Mitigated Alternative (although located outside the City limits) would be approximately 1.1 miles from the Walnut Creek BART station (and further from the Lafayette BART Station). Therefore, assuming a 5-10% transit use for the Mitigated Alternative is appropriate, which would result in 6-7 peak hour trips related to BART or non-auto transit modes including bicycle trips, bus trips, and walking trips to/from downtown destinations. The parking analysis (above) conservatively assumes that all these peak hour trips would consist of people driving to BART.

The Walnut Creek and Lafayette BART Stations offer monthly and single day reserved, daily fee ($3), extended weekend, Carpool ($2.50), and airport/long term parking. Accessing the BART website, there is currently a waiting list for monthly reserved parking. It is very likely that any project residents using BART would take full advantage of the convenient County Connection routes on Boulevard Way that serve the BART Stations. As noted above, discussions with County Connection planning staff indicate that there is excess capacity on both County Connection route #1 and #301 (traveling on Boulevard Way) and route #25 (traveling on Olympic Boulevard). CC Route #1 currently averages 11 riders per hour during the weekday periods while CC Route #301 averages 7.2 riders per hour on the weekends. Therefore, the addition of riders from proposed project uses would not significantly affect capacity on adjacent bus routes. County Connection staff also indicates that CC Route #25 has even lower ridership averages and would not be affected by increased ridership from proposed project uses.

BART ridership is currently experiencing significant growth system-wide. Based on the most recent yearly ridership numbers, BART's average weekday ridership is 403,680 (FY 2014) and this is leading to greater delays and passengers jamming doors as they attempt to enter crowded trains. Relative to the Lafayette and Walnut Creek BART Stations, the Pittsburg/Bay Point line carries the highest number of weekday riders. During peak commute periods, this can lead to very crowded trains with riders waiting for less crowded trains and/or sometimes riding upstream to access a train in their commute direction. The Project and the Mitigated Alternative would contribute a very slight amount to overall ridership, with the contribution too small to make a material difference in BART operations or passenger experience.

Parking

The Mitigated Alternative overview includes a calculation of parking required by the Contra Costa County Code, and demonstrates that the Mitigated Alternative will provide more vehicle parking than is required. The County Code establishes the amount of bicycle parking considered adequate by the County will be required. As is typical, when final project designs are drawn up, the precise location of bicycle parking will be identified in numbers sufficient to meet County Code requirements. Neither the Project nor the Mitigated Alternative would result in a net decrease in street parking, since both include extensive street parking spaces.

Because vehicle and bicycle parking will be sufficient, the Mitigated Alternative is not expected to trigger vehicles or bicycles to be parked elsewhere in the neighborhood.

The proposed metered parking will be programmed for high-turnover (low time limit) and low cost, and would not accommodate long-term demand. It is therefore not anticipated to divert parking to neighborhood streets, particularly when metered parking would not be active during the early morning or early evening hours when the parking demand of specific commercial uses (coffee, restaurant) would be higher. Field observations indicate there is somewhat lower on-street parking demand on the north side of Boulevard Way while the south side (7-11, Morucci's Deli) can experience higher on-street parking demand.

The head-in, angled parking is expected to operate safely and efficiently. Fehr & Peers prepared an analysis of parking maneuvers, which concluded that there would be sufficient time and space for cars to maneuver into and out of parking spaces.[14] Because the Mitigated Alternative proposes less traffic than the Project, it will contribute even fewer cars to Boulevard Way. As a result, the average length of time between passing cars would be even greater, leaving more time for cars to maneuver into and out of parking spaces. Accordingly, the conclusions of the 2014 memorandum apply equally to the Mitigated Alternative.

Construction Traffic

The County requires project applicants to prepare a traffic control plan for all construction-related activities. This would include all roadways where vehicle travel would be affected by construction traffic and post-project completion to ensure adequate vehicle progression and design standards consistent County guidelines. In addition, during periods of construction, it could be necessary to partially close travel lanes/roadways. To the extent feasible, the County generally requires that any temporary roadway or lane closures be done outside of the peak hour(s) of traffic flow during low-volume periods to keep vehicle delays to a minimum. The project applicant would apply for an encroachment permit through the County in accordance with all associated requirements. This would include traffic warning signs, barricades, lights, flaggers, cones, and speed reduction signs. Since the partial close of travel lanes and/or roadways would be temporary in nature, the proposed project would not significantly disrupt existing traffic flows. In addition, lane/roadway closures would have temporary durations, site-specific to selected roadways, and coordinated through local agency permitting and regulations. Traffic control plans would limit truck access to main arterial roadways to/from the site and trucks would not use City of Lafayette collector-local streets to access project site (i.e. Old Tunnel Road, Kinney Drive, Condit Drive, etc.)

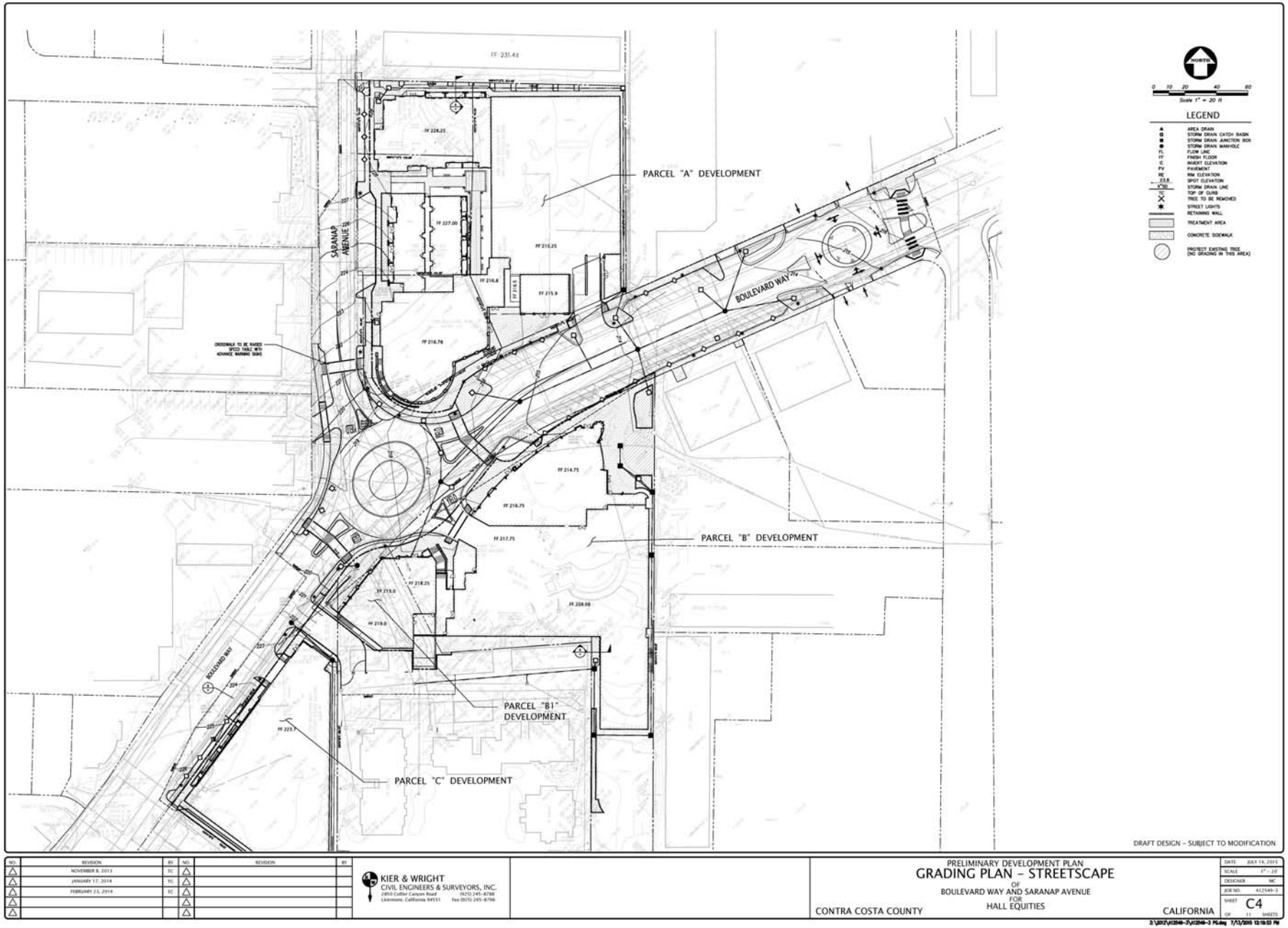
Like the Project, the Mitigated Alternative is anticipated to result in a temporary diversion of traffic while construction is ongoing. These impacts are temporary in nature and not significant. The traffic control plan requirement means that all construction related traffic would be evaluated based on to the total number of temporary construction workers, trucks, and materials transported to/from the proposed project site on a daily basis. Based on the Mitigated Alternative description, the number of construction trips would be calculated and addressed for potential temporary impacts. As previously stated, Contra Costa County would require the project applicant to prepare a traffic control plan for all construction-related activities (should the proposed project be approved). This would include all roadways where vehicle travel would be affected by construction traffic and post-project completion to ensure adequate vehicle progression and design standards consistent County guidelines.

14 See the Memorandum entitled Response to Public Works Comments Regarding Saranap Village, August 29, 2014, included in Appendix G to the DEIR.

Exhibits:

1. Streetscape Plan (Boulevard Way),
2. AM and PM Mitigated Alternative Trips,
3. Mitigated Alternative Driveway Intersection LOS Calculation Sheets,
4. Old Tunnel Road-Saranap Avenue Corridor Intersection LOS Calculation Sheets, (Theoretical Diversion)
5. Old Tunnel Road-Saranap Avenue Corridor Intersection LOS Calculation Sheets,
6. Lawrence Way Ramp Density LOS Sheets,
7. I-680 Northbound Off-Ramp at Ygnacio Valley Ramp Density LOS
8. Sheets, Fehr & Peers Response to Public Works Comments Regarding Saranap Village,
9. Memorandum to Mr. Will Nelson [Contra Costa County] from Mr. Ryan McClain [Fehr & Peers], May 9, 2014,
10. TIA for Saranap Village Project (Omni Means, August 22, 2014, text portion without appendices)

Please note for Exhibits 5 through 13 ; all LOS analyses for intersection, roadway, freeway segment, and freeway ramps, plus project driveway trip distribution reflect higher trip numbers than are forecast in the mitigated alternative project. Previous analyses for the Project reflected a model run that uses preliminary, more generic trip estimates for project components (residential) that have subsequently been refined. The model run for the Project (based on a higher trip generation), shows an acceptable LOS. Therefore, the fewer trips now forecast for the Mitigated Alternative project will necessarily result in the same or improved LOS.

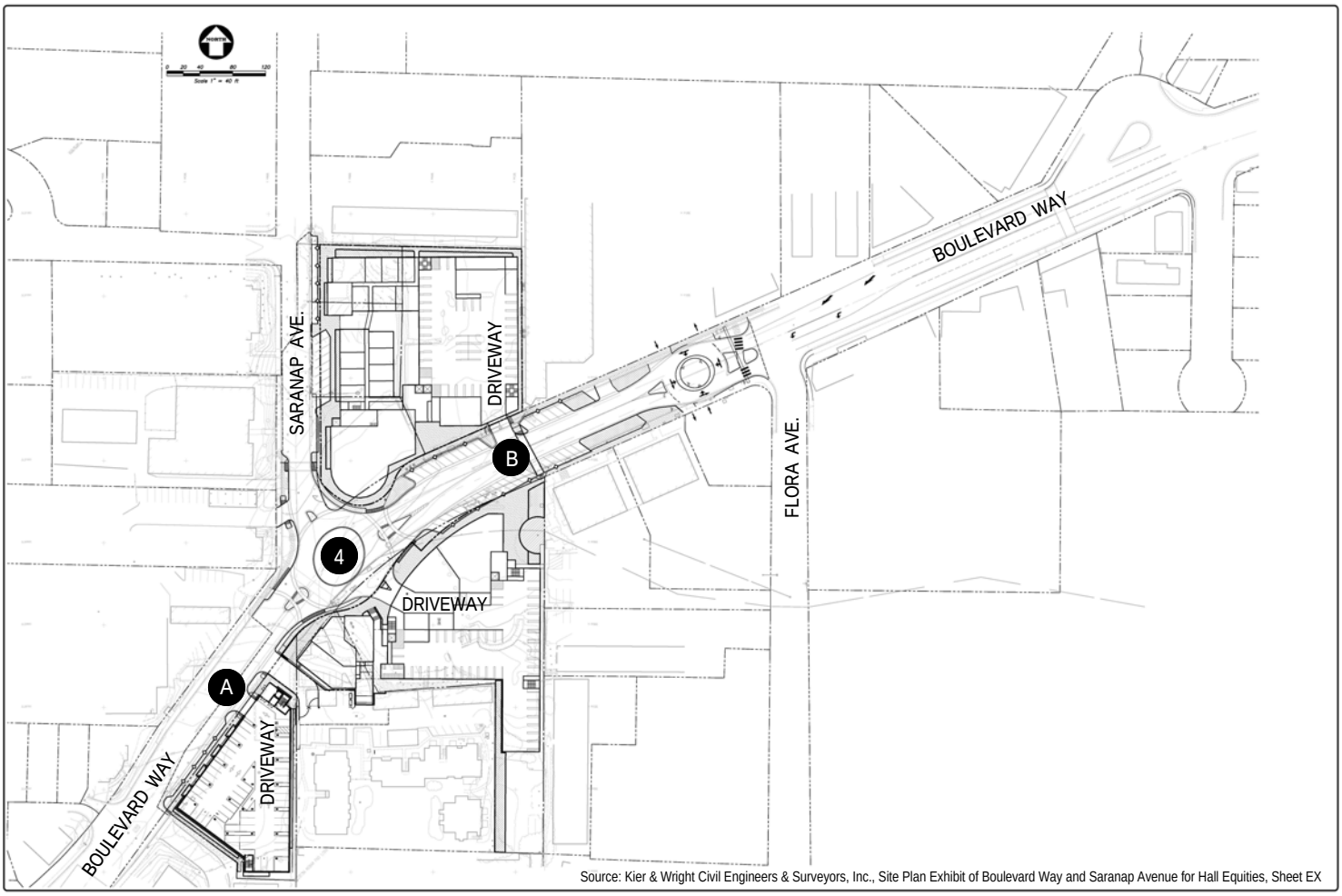


Project Streetscape Plan

North

omni-means

figure 1



Source: Kier & Wright Civil Engineers & Surveyors, Inc., Site Plan Exhibit of Boulevard Way and Saranap Avenue for Hall Equities, Sheet EX

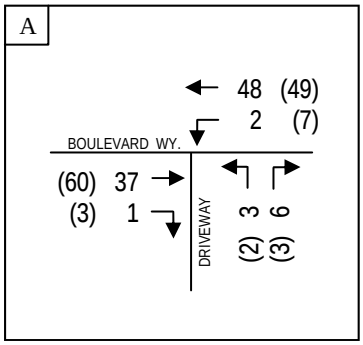
PEAK HOUR PROJECT TRIPS*[1]

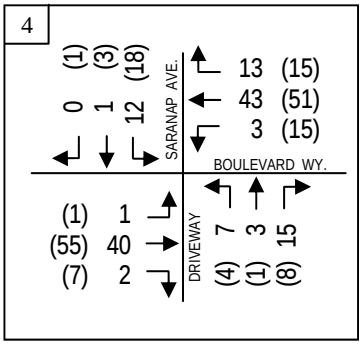
AM: 242 (102 in, 140 out) Net New Trips
51 (23 in, 28 out) Pass-by Trips
293 (125 in, 168 out) Total Trips

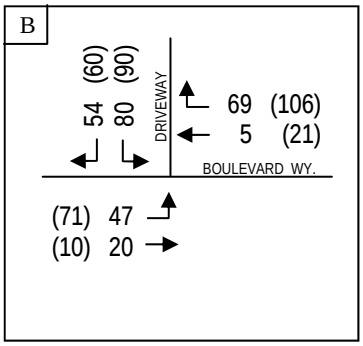
PM: 264 (151 in, 113 out) Net New Trips
116 (61 in, 55 out) Pass-by Trips
380 (212 in, 168 out) Total Trips

*Assumes 50% coffee shop trips use on-street parking.

[1]Mitigated Alternative would be equal to or less than AM & PM peak hour trips shown.







Project Trips At Access Driveways - Including Net New & Pass-by
Weekday A.M. and (P.M.) Peak Hour

North

omni-means

figure A

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	228	1	2	160	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	248	1	2	174	3	7
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	249	0	426	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	178	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1317	-	585	791
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	853	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1317	-	584	791
Mov Capacity-2 Maneuver	-	-	-	-	584	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.2
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	707	-	-	1317	-
HCM Control Delay, s	10.2	-	-	7.738	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	257	139	69	80	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	279	151	75	87	59
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	226	0	-	0	571	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	382	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1342	-	-	-	482	853
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	690	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1342	-	-	-	460	853
Mov Capacity-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	659	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.6
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1342	-	-	-	565
HCM Control Delay, s	7.789	0	-	-	13.6
HCM Lane V/C Ratio	0.04	-	-	-	0.26
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.1	-	-	-	1.0

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	272	3	7	221	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	296	3	8	240	2	3
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	299	0	552	297
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	255	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1262	-	495	742
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	788	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1262	-	492	742
Mov Capacity-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.9
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	617	-	-	1262	-
HCM Control Delay, s	10.9	-	-	7.87	0
HCM Lane V/C Ratio	0.01	-	-	0.01	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	71	256	216	106	90	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	278	235	115	98	65
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	350	0	-	0	725	292
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	433	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1209	-	-	-	392	747
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	654	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1209	-	-	-	363	747
Mov Capacity-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	605	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	17.2
HCM LOS	-	-	C

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1209	-	-	-	457
HCM Control Delay, s	8.181	0	-	-	17.2
HCM Lane V/C Ratio	0.06	-	-	-	0.36
HCM Lane LOS	A	A	-	-	C
HCM 95th-tile Q, veh	0.2	-	-	-	1.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	243	1	2	177	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	1	2	192	3	7
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	265	0	462	265
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	197	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1299	-	558	774
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	836	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1299	-	557	774
Mov Capacity-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	685	-	-	1299	-
HCM Control Delay, s	10.3	-	-	7.776	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	270	152	69	80	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	293	165	75	87	59
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	240	0	-	0	599	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	396	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1327	-	-	-	465	838
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	680	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1327	-	-	-	444	838
Mov Capacity-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	649	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.9
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1327	-	-	-	548
HCM Control Delay, s	7.821	0	-	-	13.9
HCM Lane V/C Ratio	0.04	-	-	-	0.27
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.1	-	-	-	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	291	3	7	238	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	316	3	8	259	2	3
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	320	0	592	318
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	274	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1240	-	469	723
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	772	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1240	-	465	723
Mov Capacity-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	766	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.1
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	592	-	-	1240	-
HCM Control Delay, s	11.1	-	-	7.921	0
HCM Lane V/C Ratio	0.01	-	-	0.01	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	71	272	230	106	90	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	296	250	115	98	65
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	365	0	-	0	758	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	450	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1194	-	-	-	375	732
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	642	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1194	-	-	-	346	732
Mov Capacity-2 Maneuver	-	-	-	-	346	-
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	18
HCM LOS	-	-	C

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1194	-	-	-	438
HCM Control Delay, s	8.223	0	-	-	18
HCM Lane V/C Ratio	0.07	-	-	-	0.37
HCM Lane LOS	A	A	-	-	C
HCM 95th-tile Q, veh	0.2	-	-	-	1.7

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	270	1	2	176	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	1	2	191	3	7
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	295	0	490	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	196	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1266	-	537	745
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	837	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1266	-	536	745
Mov Capacity-2 Maneuver	-	-	-	-	536	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	659	-	-	1266	-
HCM Control Delay, s	10.5	-	-	7.848	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	299	155	69	80	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	325	168	75	87	59
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	243	0	-	0	633	206
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	427	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1323	-	-	-	444	835
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	658	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1323	-	-	-	423	835
Mov Capacity-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	14.4
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1323	-	-	-	528
HCM Control Delay, s	7.83	0	-	-	14.4
HCM Lane V/C Ratio	0.04	-	-	-	0.28
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.1	-	-	-	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	318	3	7	246	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	346	3	8	267	2	3
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	349	0	630	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	283	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1210	-	446	696
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	765	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1210	-	442	696
Mov Capacity-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	759	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.4
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	566	-	-	1210	-
HCM Control Delay, s	11.4	-	-	7.994	0
HCM Lane V/C Ratio	0.01	-	-	0.01	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	71	302	241	106	90	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	328	262	115	98	65
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow All	377	0	-	0	803	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	483	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1181	-	-	-	353	721
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	620	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1181	-	-	-	325	721
Mov Capacity-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	19.1
HCM LOS	-	-	C

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1181	-	-	-	417
HCM Control Delay, s	8.261	0	-	-	19.1
HCM Lane V/C Ratio	0.07	-	-	-	0.39
HCM Lane LOS	A	A	-	-	C
HCM 95th-tile Q, veh	0.2	-	-	-	1.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	270	1	2	176	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	1	2	191	3	7
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	295	0	490	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	196	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1266	-	537	745
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	837	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1266	-	536	745
Mov Capacity-2 Maneuver	-	-	-	-	536	-
Stage 1	-	-	-	-	756	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	659	-	-	1266	-
HCM Control Delay, s	10.5	-	-	7.848	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	299	155	69	80	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade, %		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	325	168	75	87	59
Number of Lanes	0	1	1	0	1	0

Major/Minor		Major 1	Major 2			
Conflicting Flow All	243	0	-	0	633	206
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	427	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1323	-	-	-	444	835
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	658	-
Time blocked-Platoon, %	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1323	-	-	-	423	835
Mov Capacity-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	14.4
HCM LOS	-	-	B

Minor Lane / Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Cap, veh/h	1323	-	-	-	528
HCM Control Delay, s	7.83	0	-	-	14.4
HCM Lane V/C Ratio	0.04	-	-	-	0.28
HCM Lane LOS	A	A	-	-	B
HCM 95th-tile Q, veh	0.1	-	-	-	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (veh/h)	57	64	248	23	0	128	0	792	15	32	134	658
Number	7	4	14	3	8	18	5	2	12		1	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00		1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	0.0	186.3	186.3		186.3	186.3
Lanes	0	1	1	0	1	1	0	3	0		1	2
Cap, veh/h	66	53	455	90	0	455	0	0	0		1087	2168
Arrive On Green	0.29	0.29	0.29	0.29	0.00	0.29	0.00	0.61	0.61		0.61	0.61
Sat Flow, veh/h	0	183	1583	0	0	1583		0	0		1774	3632
Grp Volume(v), veh/h	132	0	270	25	0	139		0	0		146	715
Grp Sat Flow(s),veh/h/ln	183	0	1583	0	0	1583		0	0		1774	1770
Q Serve(g_s), s	0.0	0.0	11.7	0.0	0.0	5.5		0.0	0.0		2.8	7.8
Cycle Q Clear(g_c), s	23.0	0.0	11.7	23.0	0.0	5.5		0.0	0.0		2.8	7.8
Prop In Lane	0.47		1.00	1.00		1.00			0.00		1.00	
Lane Grp Cap(c), veh/h	119	0	455	90	0	455		0	0		1087	2168
V/C Ratio(X)	1.11	0.00	0.59	0.28	0.00	0.31		0.00	0.00		0.13	0.33
Avail Cap(c_a), veh/h	119	0	455	90	0	455		0	0		1087	2168
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		0.00	0.00		1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	24.5	40.0	0.0	22.3		0.0	0.0		6.5	7.5
Incr Delay (d2), s/veh	116.0	0.0	2.1	1.7	0.0	0.4		0.0	0.0		0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
%ile Back of Q (50%), veh/ln	6.2	0.0	4.8	0.4	0.0	2.1		0.0	0.0		1.1	3.1
Lane Grp Delay (d), s/veh	146.3	0.0	26.5	41.7	0.0	22.6		0.0	0.0		6.6	7.9
Lane Grp LOS	F		C	D		C					A	A
Approach Vol, veh/h		402			164			0				861
Approach Delay, s/veh		65.9			25.5			0.0				7.7
Approach LOS		E			C							A

Timer												
Assigned Phs		4			8						1	6
Phs Duration (G+Y+Rc), s		27.0			27.0						53.0	53.0
Change Period (Y+Rc), s		4.0			4.0						4.0	4.0
Max Green Setting (Gmax), s		23.0			16.0						19.0	49.0
Max Q Clear Time (g_c+I1), s		25.0			25.0						4.8	9.8
Green Ext Time (p_c), s		0.0			0.0						4.6	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

Notes

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus Adj	1.00
Adj Sat Flow veh/h/ln	0.0
Lanes	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	0.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile Back of Q (50%), veh/ln	0.0
Lane Grp Delay (d), s/veh	0.0
Lane Grp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer
Assigned Phs
Phs Duration (G+Y+Rc), s
Change Period (Y+Rc), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+I1), s
Green Ext Time (p_c), s

Intersection Summary

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	188	13	2	133	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	204	14	2	145	17	1
Number of Lanes	1	1	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	204	0	353	204
Stage 1	-	-	-	-	204	-
Stage 2	-	-	-	-	149	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1368	-	645	837
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	879	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1368	-	644	837
Mov Capacity-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	877	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.7
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	653	-	-	1368	-
HCM Control Delay, s	10.7	-	-	7.636	0
HCM Lane V/C Ratio	0.03	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	112	36	3	88	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	39	3	96	11	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	3%
Vol Thru, %	0%	76%	97%
Vol Right, %	17%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	148	91
LT Vol	0	112	88
Through Vol	2	36	0
RT Vol	10	0	3
Lane Flow Rate	13	161	99
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.174	0.112
Departure Headway (Hd)	4.546	3.885	4.084
Convergence, Y/N	Yes	Yes	Yes
Cap	792	922	875
Service Time	2.546	1.913	2.118
HCM Lane V/C Ratio	0.016	0.175	0.113
HCM Control Delay	7.6	7.7	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.6	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	107	15	20	81	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	16	22	88	11	22
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	133	0	256	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	132	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1452	-	733	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	894	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1452	-	721	927
Mov Capacity-2 Maneuver	-	-	-	-	721	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	846	-	-	1452	-
HCM Control Delay, s	9.4	-	-	7.517	0
HCM Lane V/C Ratio	0.04	-	-	0.01	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	58	15	2	48	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	16	2	52	8	2
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	79	0	128	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	57	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1519	-	866	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	966	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1519	-	865	991
Mov Capacity-2 Maneuver	-	-	-	-	865	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.1
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	890	-	-	1519	-
HCM Control Delay, s	9.1	-	-	7.373	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	64	27	1	25	22	27	13	1	13	19	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	70	29	1	27	24	29	14	1	14	21	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8	7.4	8.4	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	68%	0%	28%	2%	16%
Vol Thru, %	32%	0%	50%	52%	23%
Vol Right, %	0%	100%	21%	46%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	1	127	48	81
LT Vol	13	0	64	25	19
Through Vol	0	1	27	22	49
RT Vol	27	0	36	1	13
Lane Flow Rate	43	1	138	52	88
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.065	0.001	0.158	0.06	0.102
Departure Headway (Hd)	5.362	4.319	4.239	4.118	4.181
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	671	832	852	873	861
Service Time	3.068	2.025	2.239	2.128	2.187
HCM Lane V/C Ratio	0.064	0.001	0.162	0.06	0.102
HCM Control Delay	8.4	7	8	7.4	7.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.6	0.2	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (veh/h)	57	64	248	24	0	131	0	792	16	32	142	658
Number	7	4	14	3	8	18	5	2	12		1	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00		1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	0.0	186.3	186.3		186.3	186.3
Lanes	0	1	1	0	1	1	0	3	0		1	2
Cap, veh/h	66	53	455	90	0	455	0	0	0		1087	2168
Arrive On Green	0.29	0.29	0.29	0.29	0.00	0.29	0.00	0.61	0.61		0.61	0.61
Sat Flow, veh/h	0	183	1583	0	0	1583		0	0		1774	3632
Grp Volume(v), veh/h	132	0	270	26	0	142		0	0		154	715
Grp Sat Flow(s),veh/h/ln	183	0	1583	0	0	1583		0	0		1774	1770
Q Serve(g_s), s	0.0	0.0	11.7	0.0	0.0	5.6		0.0	0.0		2.9	7.8
Cycle Q Clear(g_c), s	23.0	0.0	11.7	23.0	0.0	5.6		0.0	0.0		2.9	7.8
Prop In Lane	0.47		1.00	1.00		1.00			0.00		1.00	
Lane Grp Cap(c), veh/h	119	0	455	90	0	455		0	0		1087	2168
V/C Ratio(X)	1.11	0.00	0.59	0.29	0.00	0.31		0.00	0.00		0.14	0.33
Avail Cap(c_a), veh/h	119	0	455	90	0	455		0	0		1087	2168
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		0.00	0.00		1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	24.5	40.0	0.0	22.3		0.0	0.0		6.6	7.5
Incr Delay (d2), s/veh	116.0	0.0	2.1	1.7	0.0	0.4		0.0	0.0		0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
%ile Back of Q (50%), veh/ln	6.2	0.0	4.8	0.4	0.0	2.2		0.0	0.0		1.1	3.1
Lane Grp Delay (d), s/veh	146.3	0.0	26.5	41.7	0.0	22.7		0.0	0.0		6.6	7.9
Lane Grp LOS	F		C	D		C					A	A
Approach Vol, veh/h		402			168			0				869
Approach Delay, s/veh		65.9			25.6			0.0				7.7
Approach LOS		E			C							A

Timer												
Assigned Phs		4			8						1	6
Phs Duration (G+Y+Rc), s		27.0			27.0						53.0	53.0
Change Period (Y+Rc), s		4.0			4.0						4.0	4.0
Max Green Setting (Gmax), s		23.0			16.0						19.0	49.0
Max Q Clear Time (g_c+I1), s		25.0			25.0						4.9	9.8
Green Ext Time (p_c), s		0.0			0.0						4.6	6.3

Intersection Summary												
HCM 2010 Ctrl Delay			26.0									
HCM 2010 LOS			C									

Notes

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus Adj	1.00
Adj Sat Flow veh/h/ln	0.0
Lanes	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	0.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile Back of Q (50%), veh/ln	0.0
Lane Grp Delay (d), s/veh	0.0
Lane Grp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer
Assigned Phs
Phs Duration (G+Y+Rc), s
Change Period (Y+Rc), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+I1), s
Green Ext Time (p_c), s

Intersection Summary

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	197	13	2	137	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	214	14	2	149	17	1
Number of Lanes	1	1	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	214	0	367	214
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	153	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1356	-	633	826
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	875	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1356	-	632	826
Mov Capacity-2 Maneuver	-	-	-	-	632	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	873	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.8
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	641	-	-	1356	-
HCM Control Delay, s	10.8	-	-	7.659	0
HCM Lane V/C Ratio	0.03	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	121	36	3	92	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	39	3	100	11	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	7.7	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	3%
Vol Thru, %	0%	77%	97%
Vol Right, %	17%	23%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	157	95
LT Vol	0	121	92
Through Vol	2	36	0
RT Vol	10	0	3
Lane Flow Rate	13	171	103
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.185	0.117
Departure Headway (Hd)	4.576	3.897	4.091
Convergence, Y/N	Yes	Yes	Yes
Cap	787	920	874
Service Time	2.576	1.928	2.129
HCM Lane V/C Ratio	0.017	0.186	0.118
HCM Control Delay	7.7	7.8	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.7	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	114	15	20	85	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	16	22	92	11	22
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	140	0	268	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	136	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1443	-	721	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	890	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1443	-	709	917
Mov Capacity-2 Maneuver	-	-	-	-	709	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.5
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	835	-	-	1443	-
HCM Control Delay, s	9.5	-	-	7.533	0
HCM Lane V/C Ratio	0.04	-	-	0.01	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	73	27	1	32	26	27	13	1	17	19	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	79	29	1	35	28	29	14	1	18	21	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.2	7.5	8.5	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	68%	0%	26%	2%	20%
Vol Thru, %	32%	0%	54%	54%	22%
Vol Right, %	0%	100%	20%	44%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	1	136	59	85
LT Vol	13	0	73	32	19
Through Vol	0	1	27	26	49
RT Vol	27	0	36	1	17
Lane Flow Rate	43	1	148	64	92
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.065	0.001	0.175	0.074	0.109
Departure Headway (Hd)	5.418	4.375	4.26	4.154	4.257
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	663	820	846	865	844
Service Time	3.134	2.091	2.27	2.167	2.272
HCM Lane V/C Ratio	0.065	0.001	0.175	0.074	0.109
HCM Control Delay	8.5	7.1	8.2	7.5	7.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.6	0.2	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	71	15	2	59	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	16	2	64	8	2
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	93	0	153	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	68	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1501	-	839	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	955	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1501	-	838	974
Mov Capacity-2 Maneuver	-	-	-	-	838	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	954	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.2
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	865	-	-	1501	-
HCM Control Delay, s	9.2	-	-	7.402	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (veh/h)	59	66	257	25	0	135	0	823	17	32	145	684
Number	7	4	14	3	8	18	5	2	12		1	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00		1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	186.3	186.3	186.3	186.3	0.0	186.3	186.3		186.3	186.3
Lanes	0	1	1	0	1	1	0	3	0		1	2
Cap, veh/h	66	52	455	90	0	455	0	0	0		1087	2168
Arrive On Green	0.29	0.29	0.29	0.29	0.00	0.29	0.00	0.61	0.61		0.61	0.61
Sat Flow, veh/h	0	182	1583	0	0	1583		0	0		1774	3632
Grp Volume(v), veh/h	136	0	279	27	0	147		0	0		158	743
Grp Sat Flow(s),veh/h/ln	182	0	1583	0	0	1583		0	0		1774	1770
Q Serve(g_s), s	0.0	0.0	12.2	0.0	0.0	5.8		0.0	0.0		3.0	8.2
Cycle Q Clear(g_c), s	23.0	0.0	12.2	23.0	0.0	5.8		0.0	0.0		3.0	8.2
Prop In Lane	0.47		1.00	1.00		1.00			0.00		1.00	
Lane Grp Cap(c), veh/h	119	0	455	90	0	455		0	0		1087	2168
V/C Ratio(X)	1.15	0.00	0.61	0.30	0.00	0.32		0.00	0.00		0.15	0.34
Avail Cap(c_a), veh/h	119	0	455	90	0	455		0	0		1087	2168
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		0.00	0.00		1.00	1.00
Uniform Delay (d), s/veh	30.3	0.0	24.6	40.0	0.0	22.4		0.0	0.0		6.6	7.6
Incr Delay (d2), s/veh	127.7	0.0	2.4	1.8	0.0	0.4		0.0	0.0		0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
%ile Back of Q (50%), veh/ln	6.6	0.0	5.0	0.4	0.0	2.3		0.0	0.0		1.2	3.2
Lane Grp Delay (d), s/veh	158.0	0.0	27.1	41.8	0.0	22.8		0.0	0.0		6.7	8.0
Lane Grp LOS	F		C	D		C					A	A
Approach Vol, veh/h		415			174			0				901
Approach Delay, s/veh		70.0			25.7			0.0				7.8
Approach LOS		E			C							A

Timer												
Assigned Phs		4			8						1	6
Phs Duration (G+Y+Rc), s		27.0			27.0						53.0	53.0
Change Period (Y+Rc), s		4.0			4.0						4.0	4.0
Max Green Setting (Gmax), s		23.0			16.0						19.0	49.0
Max Q Clear Time (g_c+I1), s		25.0			25.0						5.0	10.2
Green Ext Time (p_c), s		0.0			0.0						4.8	6.6

Intersection Summary												
HCM 2010 Ctrl Delay			27.2									
HCM 2010 LOS			C									

Notes

Movement	SBR
Lane Configurations	
Volume (veh/h)	0
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus Adj	1.00
Adj Sat Flow veh/h/ln	0.0
Lanes	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	0.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile Back of Q (50%), veh/ln	0.0
Lane Grp Delay (d), s/veh	0.0
Lane Grp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer
Assigned Phs
Phs Duration (G+Y+Rc), s
Change Period (Y+Rc), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+I1), s
Green Ext Time (p_c), s

Intersection Summary

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	200	13	2	142	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	14	2	154	17	1
Number of Lanes	1	1	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	217	0	376	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	159	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1353	-	625	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	870	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1353	-	624	823
Mov Capacity-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	868	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.9
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	633	-	-	1353	-
HCM Control Delay, s	10.9	-	-	7.665	0
HCM Lane V/C Ratio	0.03	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	127	36	3	97	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	39	3	105	11	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	7.7	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	3%
Vol Thru, %	0%	78%	97%
Vol Right, %	17%	22%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	163	100
LT Vol	0	127	97
Through Vol	2	36	0
RT Vol	10	0	3
Lane Flow Rate	13	177	109
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.192	0.124
Departure Headway (Hd)	4.602	3.906	4.095
Convergence, Y/N	Yes	Yes	Yes
Cap	782	916	872
Service Time	2.602	1.939	2.135
HCM Lane V/C Ratio	0.017	0.193	0.125
HCM Control Delay	7.7	7.9	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.7	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	122	15	20	90	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	16	22	98	11	22
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	149	0	282	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	141	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1432	-	708	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	886	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1432	-	697	907
Mov Capacity-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	872	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.5
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	824	-	-	1432	-
HCM Control Delay, s	9.5	-	-	7.553	0
HCM Lane V/C Ratio	0.04	-	-	0.01	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	79	27	1	37	26	27	13	1	17	19	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	86	29	1	40	28	29	14	1	18	21	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.2	7.6	8.5	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	68%	0%	25%	2%	20%
Vol Thru, %	32%	0%	56%	58%	22%
Vol Right, %	0%	100%	19%	41%	58%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	1	142	64	85
LT Vol	13	0	79	37	19
Through Vol	0	1	27	26	49
RT Vol	27	0	36	1	17
Lane Flow Rate	43	1	154	70	92
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.066	0.001	0.183	0.081	0.11
Departure Headway (Hd)	5.446	4.403	4.27	4.184	4.284
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	660	814	843	858	838
Service Time	3.164	2.121	2.283	2.199	2.301
HCM Lane V/C Ratio	0.065	0.001	0.183	0.082	0.11
HCM Control Delay	8.5	7.1	8.2	7.6	7.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.7	0.3	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	77	15	2	64	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	16	2	70	8	2
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	100	0	166	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	74	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1493	-	824	965
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	949	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1493	-	823	965
Mov Capacity-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	948	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.3
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	851	-	-	1493	-
HCM Control Delay, s	9.3	-	-	7.415	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	71	80	318	30	0	164	0	1022	22	32	167	854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0		4.0			4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91			1.00	0.95
Frt		1.00	0.85	1.00		0.85		1.00			1.00	1.00
Flt Protected		0.98	1.00	0.95		1.00		1.00			0.95	1.00
Satd. Flow (prot)		1820	1583	1770		1583		5069			1770	3539
Flt Permitted		0.98	1.00	0.65		1.00		1.00			0.95	1.00
Satd. Flow (perm)		1820	1583	1217		1583		5069			1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	87	346	33	0	178	0	1111	24	35	182	928
RTOR Reduction (vph)	0	0	0	0	0	161	0	2	0	0	0	0
Lane Group Flow (vph)	0	164	346	33	0	17	0	1133	0	0	217	928
Turn Type	Split	NA	Perm	custom		custom		NA		Prot	Prot	NA
Protected Phases	4	4						2		1	1	6
Permitted Phases			4	8		8						
Actuated Green, G (s)		20.9	20.9	7.9		7.9		24.1			12.0	40.1
Effective Green, g (s)		20.9	20.9	7.9		7.9		24.1			12.0	40.1
Actuated g/C Ratio		0.26	0.26	0.10		0.10		0.30			0.15	0.50
Clearance Time (s)		4.0	4.0	4.0		4.0		4.0			4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		470	408	118		154		1510			262	1754
v/s Ratio Prot		0.09						c0.22			c0.12	0.26
v/s Ratio Perm			c0.22	c0.03		0.01						
v/c Ratio		0.35	0.85	0.28		0.11		0.75			0.83	0.53
Uniform Delay, d1		24.5	28.5	33.9		33.3		25.7			33.4	13.9
Progression Factor		1.00	1.00	1.00		1.00		1.00			1.00	1.00
Incremental Delay, d2		0.5	15.0	1.3		0.3		3.5			18.9	1.1
Delay (s)		24.9	43.5	35.2		33.6		29.2			52.4	15.1
Level of Service		C	D	D		C		C			D	B
Approach Delay (s)		37.5			33.9			29.2				22.2
Approach LOS		D			C			C				C

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	244	13	2	176	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	265	14	2	191	17	1
Number of Lanes	1	1	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	265	0	461	265
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	196	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1299	-	559	774
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	837	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1299	-	558	774
Mov Capacity-2 Maneuver	-	-	-	-	558	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.6
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	567	-	-	1299	-
HCM Control Delay, s	11.6	-	-	7.776	0
HCM Lane V/C Ratio	0.03	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	168	36	3	131	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	183	39	3	142	11	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.3	8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	2%
Vol Thru, %	0%	82%	98%
Vol Right, %	17%	18%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	204	134
LT Vol	0	168	131
Through Vol	2	36	0
RT Vol	10	0	3
Lane Flow Rate	13	222	146
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.244	0.167
Departure Headway (Hd)	4.776	3.96	4.127
Convergence, Y/N	Yes	Yes	Yes
Cap	754	902	864
Service Time	2.776	2.002	2.177
HCM Lane V/C Ratio	0.017	0.246	0.169
HCM Control Delay	7.9	8.3	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	1	0.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	163	15	20	124	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	177	16	22	135	11	22
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	193	0	363	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	178	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1380	-	636	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	853	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1380	-	625	857
Mov Capacity-2 Maneuver	-	-	-	-	625	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.9
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	763	-	-	1380	-
HCM Control Delay, s	9.9	-	-	7.65	0
HCM Lane V/C Ratio	0.04	-	-	0.02	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	120	27	1	68	22	27	13	1	13	19	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	130	29	1	74	24	29	14	1	14	21	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.7	7.9	8.8	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	68%	0%	20%	1%	16%
Vol Thru, %	32%	0%	66%	75%	23%
Vol Right, %	0%	100%	15%	24%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	1	183	91	81
LT Vol	13	0	120	68	19
Through Vol	0	1	27	22	49
RT Vol	27	0	36	1	13
Lane Flow Rate	43	1	199	99	88
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.068	0.001	0.239	0.119	0.108
Departure Headway (Hd)	5.62	4.576	4.317	4.329	4.433
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	638	782	833	830	809
Service Time	3.347	2.302	2.332	2.348	2.458
HCM Lane V/C Ratio	0.067	0.001	0.239	0.119	0.109
HCM Control Delay	8.8	7.3	8.7	7.9	8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0	0.9	0.4	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	114	15	2	91	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	16	2	99	8	2
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	140	0	235	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	103	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1443	-	753	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	921	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1443	-	752	917
Mov Capacity-2 Maneuver	-	-	-	-	752	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.7
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	783	-	-	1443	-
HCM Control Delay, s	9.7	-	-	7.499	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	71	102	318	30	0	164	0	1022	22	32	167	854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0		4.0		4.0			4.0	4.0
Lane Util. Factor		1.00	1.00	1.00		1.00		0.91			1.00	0.95
Frt		1.00	0.85	1.00		0.85		1.00			1.00	1.00
Flt Protected		0.98	1.00	0.95		1.00		1.00			0.95	1.00
Satd. Flow (prot)		1825	1583	1770		1583		5069			1770	3539
Flt Permitted		0.98	1.00	0.64		1.00		1.00			0.95	1.00
Satd. Flow (perm)		1825	1583	1191		1583		5069			1770	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	111	346	33	0	178	0	1111	24	35	182	928
RTOR Reduction (vph)	0	0	0	0	0	160	0	2	0	0	0	0
Lane Group Flow (vph)	0	188	346	33	0	18	0	1133	0	0	217	928
Turn Type	Split	NA	Perm	custom		custom		NA		Prot	Prot	NA
Protected Phases	4	4						2		1	1	6
Permitted Phases			4	8		8						
Actuated Green, G (s)		20.9	20.9	8.0		8.0		24.1			12.0	40.1
Effective Green, g (s)		20.9	20.9	8.0		8.0		24.1			12.0	40.1
Actuated g/C Ratio		0.26	0.26	0.10		0.10		0.30			0.15	0.50
Clearance Time (s)		4.0	4.0	4.0		4.0		4.0			4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0		3.0		3.0			3.0	3.0
Lane Grp Cap (vph)		470	408	117		156		1508			262	1752
v/s Ratio Prot		0.10						c0.22			c0.12	0.26
v/s Ratio Perm			c0.22	c0.03		0.01						
v/c Ratio		0.40	0.85	0.28		0.11		0.75			0.83	0.53
Uniform Delay, d1		24.9	28.5	33.8		33.3		25.7			33.5	14.0
Progression Factor		1.00	1.00	1.00		1.00		1.00			1.00	1.00
Incremental Delay, d2		0.6	15.0	1.3		0.3		3.5			18.9	1.2
Delay (s)		25.4	43.6	35.2		33.6		29.2			52.4	15.1
Level of Service		C	D	D		C		C			D	B
Approach Delay (s)		37.2			33.8			29.2				22.2
Approach LOS		D			C			C				C

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Volume (vph)	0
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	0
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	266	13	2	176	16	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	12			12	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	14	2	191	17	1
Number of Lanes	1	1	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	289	0	485	289
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	196	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1273	-	541	750
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	837	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1273	-	540	750
Mov Capacity-2 Maneuver	-	-	-	-	540	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.8
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	549	-	-	1273	-
HCM Control Delay, s	11.8	-	-	7.833	0
HCM Lane V/C Ratio	0.03	-	-	0.00	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	190	36	3	131	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	39	3	142	11	2
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.5	8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	2%
Vol Thru, %	0%	84%	98%
Vol Right, %	17%	16%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	12	226	134
LT Vol	0	190	131
Through Vol	2	36	0
RT Vol	10	0	3
Lane Flow Rate	13	246	146
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.271	0.168
Departure Headway (Hd)	4.828	3.97	4.145
Convergence, Y/N	Yes	Yes	Yes
Cap	746	902	859
Service Time	2.828	2.013	2.2
HCM Lane V/C Ratio	0.017	0.273	0.17
HCM Control Delay	7.9	8.5	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	1.1	0.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	185	15	20	124	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	16	22	135	11	22
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	217	0	387	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	178	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1353	-	616	831
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	853	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1353	-	605	831
Mov Capacity-2 Maneuver	-	-	-	-	605	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.1
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	739	-	-	1353	-
HCM Control Delay, s	10.1	-	-	7.704	0
HCM Lane V/C Ratio	0.04	-	-	0.02	-
HCM Lane LOS	B	-	-	A	A
HCM 95th-tile Q, veh	0.1	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	36	142	27	1	68	22	27	13	1	13	19	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	154	29	1	74	24	29	14	1	14	21	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.9	8	8.8	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	68%	0%	18%	1%	16%
Vol Thru, %	32%	0%	69%	75%	23%
Vol Right, %	0%	100%	13%	24%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	1	205	91	81
LT Vol	13	0	142	68	19
Through Vol	0	1	27	22	49
RT Vol	27	0	36	1	13
Lane Flow Rate	43	1	223	99	88
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.069	0.001	0.268	0.12	0.11
Departure Headway (Hd)	5.678	4.633	4.324	4.357	4.489
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	631	772	831	823	799
Service Time	3.408	2.362	2.344	2.381	2.516
HCM Lane V/C Ratio	0.068	0.001	0.268	0.12	0.11
HCM Control Delay	8.8	7.4	8.9	8	8.1
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0	1.1	0.4	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	136	15	2	91	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	0			0	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	16	2	99	8	2
Number of Lanes	1	0	0	1	1	0

Major/Minor	Major 1			Major 2		
Conflicting Flow All	0	0	164	0	259	156
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	103	-
Follow-up Headway	-	-	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	-	1414	-	730	890
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	921	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1414	-	729	890
Mov Capacity-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.8
HCM LOS	-	-	A

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	760	-	-	1414	-
HCM Control Delay, s	9.8	-	-	7.55	0
HCM Lane V/C Ratio	0.01	-	-	0.00	-
HCM Lane LOS	A	-	-	A	A
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

FEHR PEERS

MEMORANDUM

Date: May 9, 2014

To: Will Nelson, Contra Costa County Conservation & Development Division

From: Ryan McClain, PE

Subject: Response to Public Works Comments Regarding Saranap Village

WC13-3057

Fehr & Peers reviewed the comments provided by the Contra Costa Public Works Department dated February 20, 2014 on the Saranap Village development application. We have assembled the following information in response to specific comments regarding diagonal parking on Boulevard Way and the proposed roundabout and -Oak tree planter island.

Diagonal Parking Guidelines

The project proposes to place diagonal parking on Boulevard Way between Saranap Avenue and Flora Avenue. The *Traffic Engineering Handbook*[1] provides "Guidelines for the Successful Application of On-Street Parking". For angled parking, an average daily traffic (ADT) of less than 10,000 vehicles and speeds of 20 miles per hour (mph) or less are recommended. The handbook also states that per-lane capacity of roadways with on-street parking is approximately 300 to 600 vehicles per hour per lane. According to the *Draft Traffic Impact Analysis (TIA) For the Proposed Saranap Village Project*[2], Boulevard Way is expected to carry an ADT of 7,383 vehicles in the Year 2030 Cumulative Plus Project Conditions and peak hour volumes between 200 and 400 vehicles per hour per lane. Therefore, this portion of Boulevard Way meets acceptable volume criteria for diagonal parking.

The project proposes traffic calming measures at both approaches to the diagonal parking, including a roundabout at the Boulevard Way/Saranap Avenue intersection and a large planter island on Boulevard Way adjacent to Flora Avenue. Along with other traffic calming elements

[1] Institute of Transportation Engineers, *Traffic Engineering Handbook*, 2009
[2] Omni-Means, *Draft Traffic Impact Analysis For the Proposed Saranap Village Project,* March 2014

such as lane reductions and enhanced crosswalks, the project would reduce speeds through the area. The roundabout and the large planter island are designed for speeds of approximately 20 mph; therefore, this portion of Boulevard Way also meets acceptable speed criteria for diagonal parking. Additionally, the proposed design provides 16.7-foot travel lanes adjacent to the diagonal parking, allowing drivers to begin backing out of parking stalls without impacting traffic flow on Boulevard Way.

Parking Maneuvers

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach[3] recommends 19-foot stall depth (from face of curb) and 14.5-foot adjacent lane width for 60° on-street diagonal parking. The proposed striping provides 18.3 feet for parking and 16.7 feet for travel lane, exceeding the overall width recommended in the guidelines. The American Association of State Highway and Transportation Officials (AASHTO) standard passenger car template was used to demonstrate vehicles exiting the diagonal parking stall (see **Figure 1**). The AASHTO standard vehicle is 19 feet long and 7 feet wide which is equivalent to a very large sport utility vehicle, and represents a conservative analysis. The turning template demonstrates that a vehicle will have ample room to exit the parking stall.

Fehr & Peers conducted field observations of diagonal parking maneuvers on Moraga Way in Orinda and Locust Street in Walnut Creek. Vehicles were timed leaving diagonal parking stalls, starting from when the vehicle began to back up and ending when the vehicle began moving forward in the travel lane. Seventeen observations were made with an average time of 7.8 seconds. This approximates the amount of delay experienced by a driver traveling through on the roadway if they arrive at the beginning of the maneuver.

The estimated cumulative plus project PM peak hour one-way traffic volume from the Draft TIA is 396 vehicles per hour, or an average of one car every 9 seconds. Based on the observed time of 7.8 seconds to exit a diagonal parking spot, on average, there would be one car queued while a car backs out. In the eastbound direction, there are 23 proposed diagonal parking spaces between Saranap Avenue and Flora Avenue. If we assume complete turnover of the parking stalls every 30 minutes, that gives a total of 46 parking maneuvers during the peak hour for a total of

[3] Institute of Transportation Engineers (ITE), *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach,* 2010

359 seconds of delay in the corridor due to parking or an average of less than one second per peak hour vehicle.

$$23\ parking\ spaces * 2\ \frac{parkingturnover}{hour} * 7.8 \frac{seconds}{parking\ maneuver} = 359\ \frac{seconds\ of delay}{hour} \quad \text{Equation 1}$$

$$\frac{359\ \frac{seconds\ of\ delay}{hour}}{396 \frac{vehicles}{hour}} = 0.9 \frac{seconds\ of\ delay}{vehicle} \quad \text{Equation 2}$$

Diagonal Parking in Other Locations

Fehr & Peers looked at other roadways in the area with diagonal parking (primarily in Contra Costa County) and compared traffic volumes and parking dimensions to those proposed on Boulevard Way (see Table 1). Volumes also varied considerably, ranging from 259 to 553 in the peak direction during the peak hour. Boulevard Way is projected to carry less peak hour volume than Moraga Way in Orinda and Solano Avenue in Albany, but more than other locations.

The most relevant example is Moraga Way in Orinda. It has a 70′ curb to curb width, similar to that proposed on Boulevard Way. The one-way peak hour volume is 499 vehicles, higher than Boulevard Way. Diagonal parking is provided on both sides of the street. Moraga Way is the primary route to the eastbound SR 24 on-ramp from the Orinda south of SR 24 and parts of Moraga. Traffic calming elements including a traffic circle and raised crosswalks have been installed through the corridor to slow down vehicular traffic and reactivate pedestrian activity center around the retail, restaurant, and entertainment venues, similar to the goals of the Saranap Village project. This complete streets treatment provides a downtown type feel with outdoor seating, ample sidewalks, safe pedestrian crossings, and slow vehicle speeds, while still serving the traffic demand associated with the freeway on-ramp.

TABLE 1: DIAGONAL PARKING COMPARISON

Location	Peak Hour Traffic (PM Peak Direction)	Parking Aisle Width (From Curb)	Distance from Curb to Centerline
One Lane Each Direction			
Boulevard Way east of Saranap Ave (Proposed)	396	18.3′	35′
Locust Street south of Civic Center Drive, Walnut Creek	259	13′	29′
Salvio Street east of Galindo Street, Concord	252	15′	28′
Solano Avenue east of Santa Fe Avenue, Albany	553	12′	30′
Moraga Way north of Brookwood Road, Orinda	499	17′	35′
Oak Street east of 2nd Street, Brentwood	Counts not available	18′	31′
Two Lanes Each Direction			
Mount Diablo Blvd east of Dewing Court, Lafayette	713	16′	43′

Source: Fehr & Peers.

Saranap Avenue/Boulevard Way Roundabout

As discussed above, a roundabout is proposed at the Saranap Avenue/Boulevard Way intersection. Benefits of the roundabout include the following:

- Provides acceptable peak hour level of service while reducing vehicle delays when compared to a stop or signal controlled intersection
- Significantly reduces the off-peak vehicle delay associated with a stop or signal controlled intersection
- Reduces vehicle speeds through the corridor improving the pedestrian and bicycle environment, both at the intersection and downstream

- Separates the vehicle-vehicle conflict points from the vehicle-pedestrian conflict points, allowing drivers to concentrate on one conflict at a time and improving both pedestrian and vehicle safety
- Significant reduction in collisions, especially severe collisions (the Insurance Institute for Highway Safety conducted a before and after study that showed a 39% reduction in total crashes and 76% reduction in injury crashes when a roundabout was installed)
- Reduces delay and vehicle idling, air pollution, greenhouse gases, and fuel consumption are also reduced

Fehr & Peers conducted an operational analysis of the roundabout controlled intersection using Year 2030 Cumulative plus Project peak hour traffic volumes from the TIA. The 2010 Highway Capacity Manual methodology for analyzing single lane roundabout was used. Results showed that during both the AM and PM peak hours, average vehicle delay was less than six seconds for each of the approaches and for the overall intersection, resulting in a Level of Service of A. The 95th percentile peak hour vehicle queues were less than 40 feet (or about two cars) for all approaches.

Fehr & Peers also conducted a turning template analysis of the roundabout, the results of which are shown in **Figures 2 through 4**, a CA-Legal truck can successfully negotiate the roundabout utilizing the mountable apron around the center island. A 40-foot bus is able to negotiate the roundabout without crossing over onto the apron, which is important for passenger comfort. Lastly, a Contra Costa County Fire Protection District fire truck was tested through the roundabout and negotiates it without crossing the apron. Also, per previous Hall Equities Group discussions with the contra Costa Fire Protection District (CCFPD), the minimum requirement of 20 feet clear driveover surface width is exceeded.

Given these results, the proposed roundabout provides acceptable vehicle operations and provides several environmental, safety, and traffic calming benefits.

Oak Tree Planter Island

The project proposes to place an oak tree planter island just west of the Boulevard Way/Flora Avenue intersection and is a critical component of the traffic calming plan associated with Boulevard Way and Saranap Village. The size of this island is dictated by both the size of the oak tree that is to be relocated here, as well as the desire to provide traffic calming through the corridor to enhance pedestrian and bicycle safety, as well as reactivate the corridor as a thriving

community. This design provides similar traffic calming benefits to a traffic circle by using horizontal deflection to force vehicles to slow down. The island was also designed to maintain full access to the existing adjacent driveways on the north and south side of Boulevard Way, as well as provide through access for large vehicles (**See Figures 5 through 8**). This planter island has also been studied for CCFPD Fire apparatus, and bus turning movements using AutoTurn software (see Figure 7), and provides full turning capability for these vehicles. Furthermore, the planter island has been specifically designed to meet the CCFPD standard for 20 feet of clear driveover surface width. The Oak tree will also be trimmed to meet required vertical clearance standards. Since the driveways serve small parking lots, the traffic entering and exiting Boulevard Way at these locations will be minimal. The island also provides a refuge for pedestrians crossing the uncontrolled west leg of the Boulevard Way/Flora Avenue intersection. Furthermore, the layout and location of the island provides opportunity to implement a left-turn pocket from Boulevard Way onto Flora Avenue, eliminating the existing conflict caused by left-turning vehicles using the through lane. For these reasons, the location of the planter island west of the intersection is appropriate.

Public Works requested that the oak tree planter island be relocated as a roundabout at the Boulevard Way/Flora Avenue intersection. A roundabout at the intersection would require substantial right-of-way takes from properties to the north, southwest, and southeast that are not part of the proposed project. This is because of the additional space needed to accommodate truck turns to and from Flora Avenue. This would result in impacts to parking and access to 7-11 and the commercial property to the north, as well as require modifications to the PG&E building on the southeast corner. It would also result in the removal of parallel parking stalls on Boulevard Way east of Flora Avenue and access would be restricted to right-in/right-out for driveways closest to the intersection. Because of the right-of-way required, a roundabout at this location is significantly costlier than at the proposed location. **Figure 9** shows a preliminary concept of a roundabout located at the intersection.

Public Works also suggested that the oak tree planter island be relocated farther west away from the Boulevard Way/Flora Avenue intersection. This would require elimination of 18 of the proposed diagonal parking stalls. **Figure 10** shows a preliminary concept for this location. The planter island at this location blocks a single driveway serving only six parking stalls; therefore, it is recommended that the driveway become right-in/right-out and that the oak tree be placed in a wide median. As shown, turning movements around the island would not be accommodated.

The oak tree planter island at this location would not provide benefit for pedestrians crossing Boulevard Way at Flora Avenue, as it would be too far removed from the intersection.

Complete Streets Implications

As discussed above, diagonal parking is part of an overall complete streets concept for Boulevard Way between Flora Avenue and Saranap Avenue. The project would reduce the number of vehicle lanes from four to two and add physical features including a roundabout and large planter island, thereby greatly increasing the pedestrian and bicycle friendliness of the corridor. *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* lists the following benefits of on-street parking that align with the goals of the project:

- Supports local economic activity of merchants by providing proximate access to local uses, as well as visitor needs in residential areas;
- Increases pedestrian comfort by providing a buffer between pedestrians and moving traffic helping reduce vehicle splash, noise and fumes;
- Slows traffic, making pedestrian crossing safer;
- Enables drivers and their passengers to become pedestrians conveniently and safely;
- Provides an indication to the motorist that desired operating speeds are reduced and that they are entering a low or moderate travel speed area;
- Provides the shortest accessible route to a street fronting building entrance for pedestrians who have disabilities;
- Increases pedestrian activity on the street since people will walk between their parking space and destination, providing more exposure to ground floor retail and increasing opportunities for social interactions;
- Supports local economic activity by increasing the visibility of storefronts and signs to motorists parking on street;
- Reduces development costs for small business by decreasing on-site parking needs, particularly in urban infill development on small lots;
- Requires less land per space than off-street parking and is thereby an efficient and cost-effective way to provide parking; and
- Provides space for on-street loading and unloading of trucks, increasing the economic activity of the street and supporting commercial retail uses.

A study titled "Reassessing On-Street Parking"[4], coauthored by Norman W. Garrick, a University of Connecticut professor and key researcher in the field of on-street parking and its relationship to the economic vitality and safety of a community, which looked at existing literature and study sites in Vermont, Massachusetts, and Connecticut. The study concluded that:

> "On-street parking is not purely a device to be used in the right environment; rather, it is a tool to help create that right environment. On-street parking should be more commonly used but especially in situations where the road is part of the destination and where the intent is to get drivers to slow down. Our results suggest that these places are safer, more walkable, require less parking, and have more vitality."

Another trade-off is that on-street parking may conflict with bicycle facilities. In the case of Boulevard Way, shared lane markings are recommended to place bicycles away from the diagonal parking and centered in the travel lane (see **Figure 11**). This would increase sight distance between the parked car and the bicycle, and provide the entire travel lane for bicycle maneuvers. Shared lane markings work well in the context of Boulevard Way, as bicycles are expected to take the lane through the roundabout at Saranap Avenue and at the planter island adjacent to Flora Avenue. Furthermore, with these traffic calming elements, vehicle speeds on Boulevard Way will be reduced to approximately 20 mph, as noted above, resulting in a low speed differential between bicycles and motor vehicles. The project also proposes bicycle parking along the building frontage to encourage customers and residents to use bicycles. The Countywide Bicycle and Pedestrian Plan[5] identifies Boulevard Way as a Class III bicycle route. The proposed shared lane markings provide an enhancement consistent with the bicycle route designation.

The proposed cross section also includes sidewalks ranging in width from 8 to 15 feet along the building frontage. These sidewalks, as proposed, are critical to creating the pedestrian experience, as a primary element to enhance the project's ability to activate pedestrian activity through the corridor.

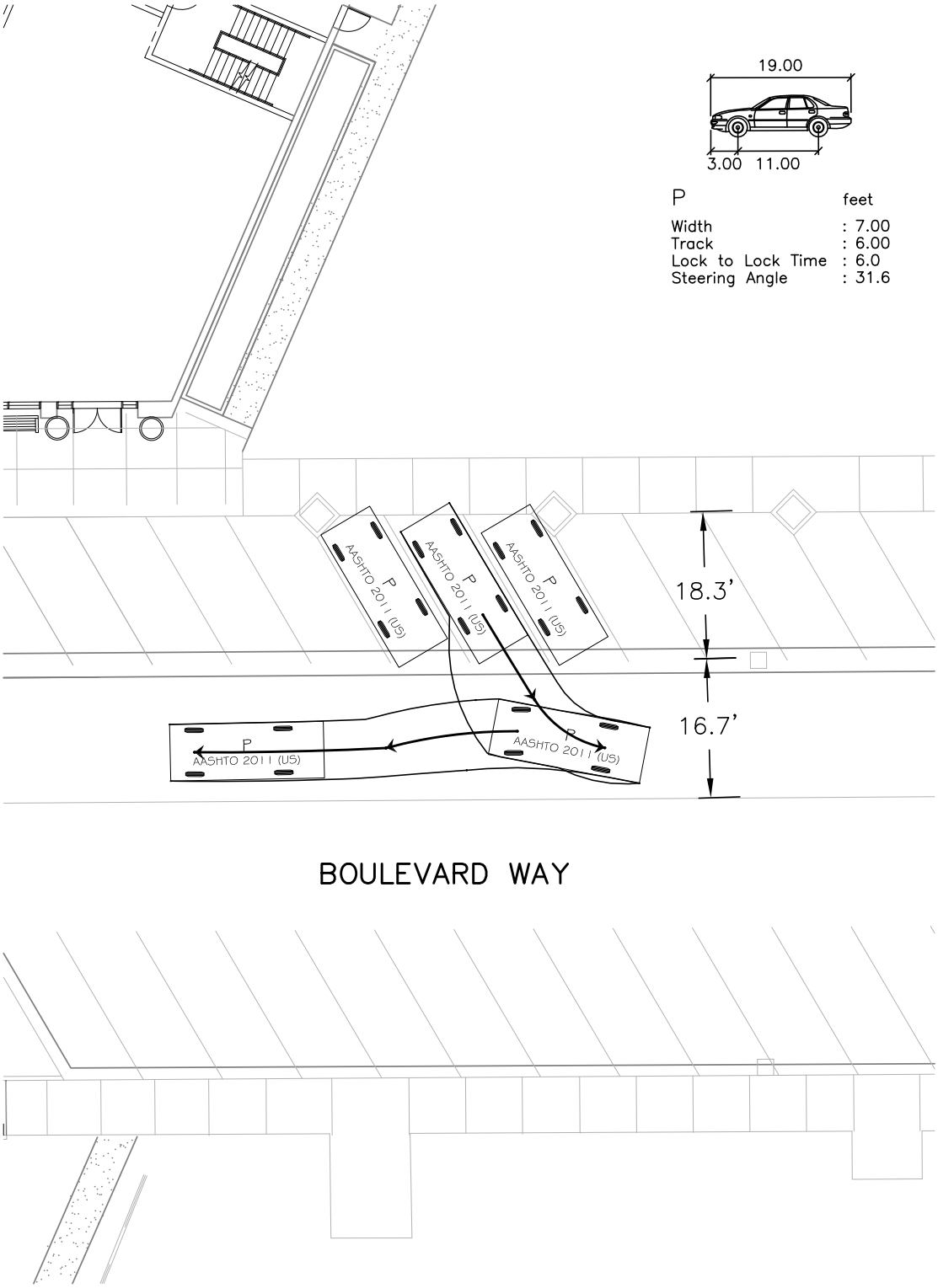
Another element of complete streets design on Boulevard Way is accommodation of transit. The project team is coordinating with County Connection to ensure acceptable design of bus stops as part of this project. Proposed bus stop locations/treatments will be submitted to the County when agreement has been reached with County Connection.

---

[4] Wesley E Marshall, P.E., Norman W. Garrick, Ph.D, Gilbert Hansen, *Reassessing On-Street Parking,* published in the Journal of the Transportation Research Board, March 17, 2008

[5] Contra Costa Countywide Bicycle and Pedestrian Plan, Contra Costa Transportation Authority, October 2009

The proposed traffic calming elements are not anticipated to result in traffic diversion away from Boulevard Way onto parallel routes such as Warren Road and Flora Avenue. While speeds will be reduced on Boulevard Way through the project area, overall traffic delay will remain relatively low as described above (LOS A at the Boulevard Way/Saranap Avenue intersection). Therefore, there will not be incentive for drivers to use narrow neighborhood streets that have lower capacity and would result in longer travel distance. Boulevard Way from approximately 300 feet west of Saranap Avenue (the western edge of the project) to Olympic Boulevard already has a posted speed limit of 25 mph. Additionally, Boulevard Way between Saranap Avenue (including a portion of the project frontage) and Olympic Boulevard has two lanes. As such, the road is not intended for high-speed travel and the proposed project is consistent with the low-speed two-lane character of Boulevard Way.

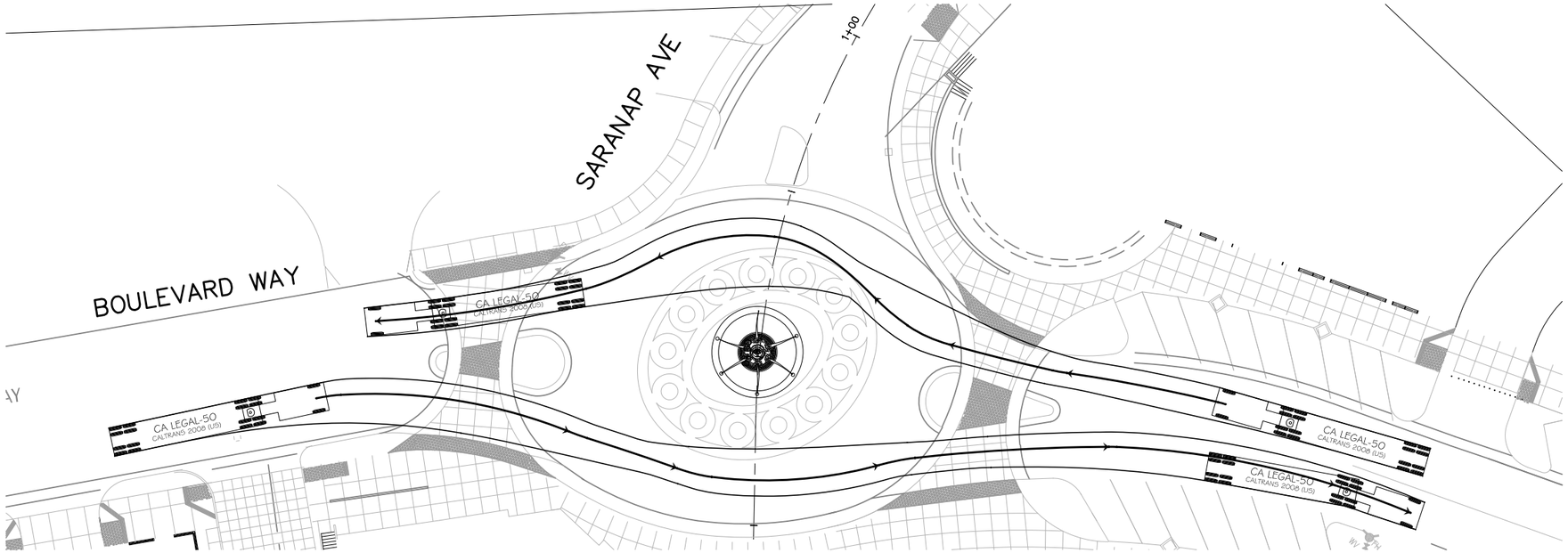


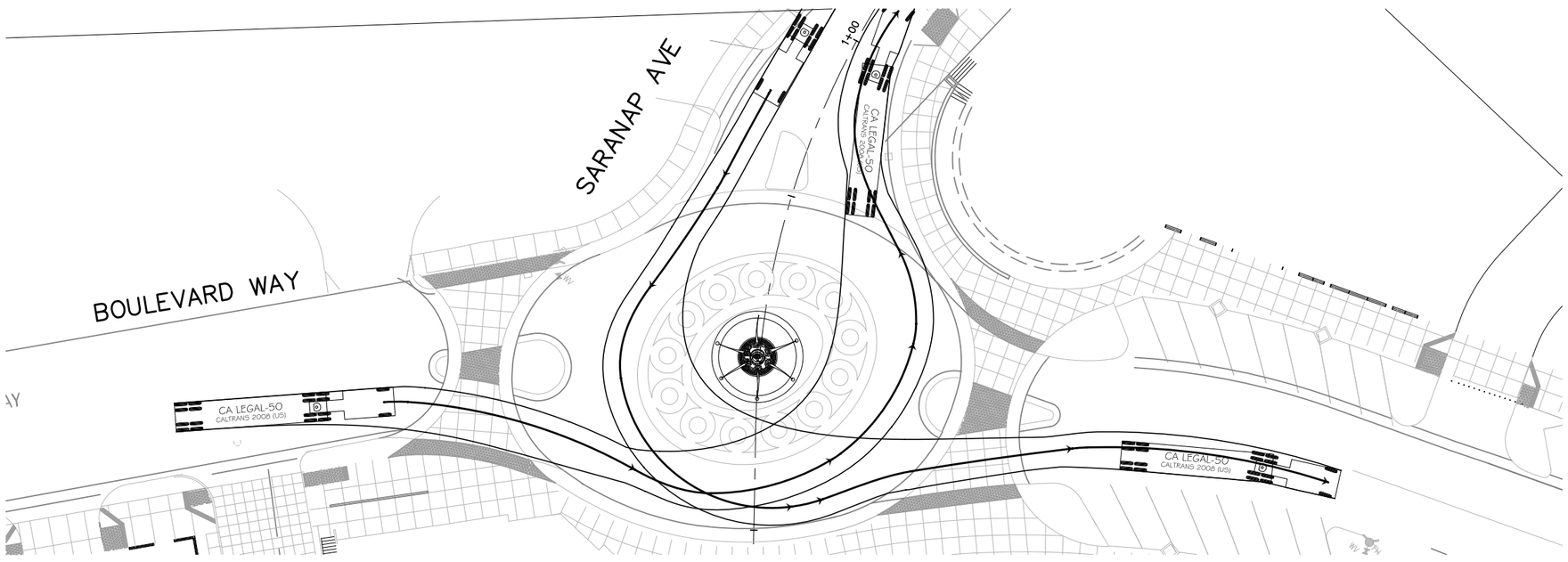
FEHR PEERS

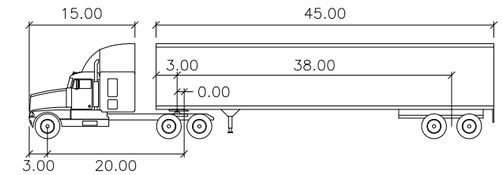
SARANAP VILLAGE
60° DIAGONAL PARKING MANUEVER

May 08, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\FP_Parking.dwg

FIGURE 1







CA LEGAL–50 feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

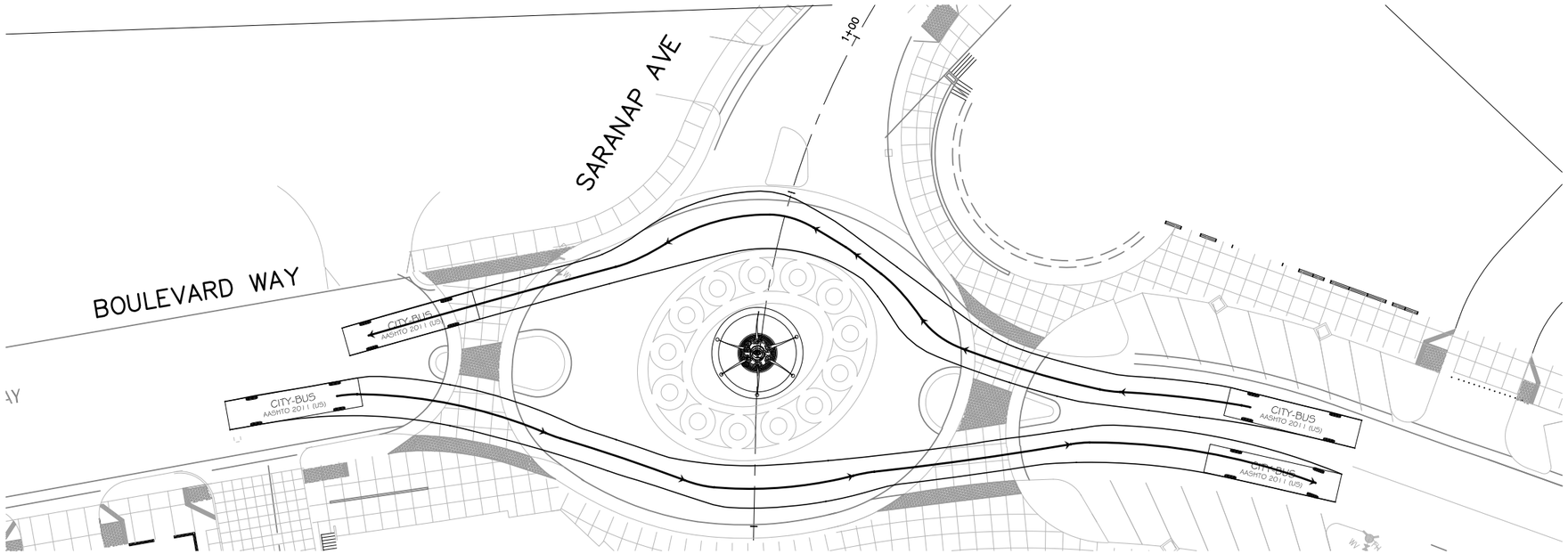
1"=40'

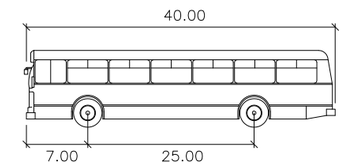
FEHR & PEERS

SARANAP VILLAGE
BOULEVARD WAY/SARANAP AVENUE ROUNDABOUT
CA-LEGAL 50 TURN TEMPLATE

FIGURE 2

May 06, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056-Figure 1.dwg





CITY–BUS
feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4

N

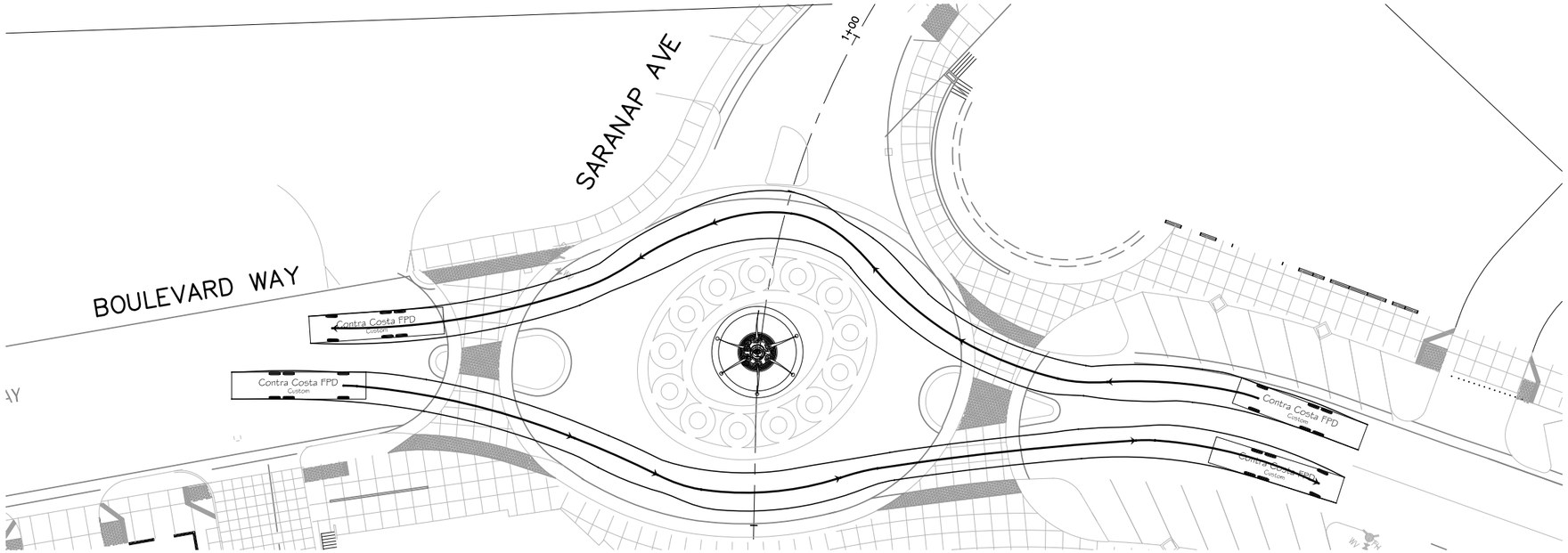
1"=40'

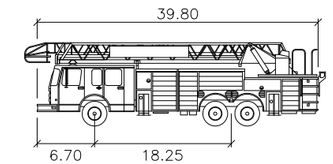
FEHR & PEERS

SARANAP VILLAGE
BOULEVARD WAY/SARANAP AVENUE ROUNDABOUT
BUS TURN TEMPLATE

FIGURE 3

May 06, 2014 FPA
N:\PROJECTS_WC13\WC13–3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056–Figure 1.dwg





Contra Costa FPD
Fleet

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 29.5

N

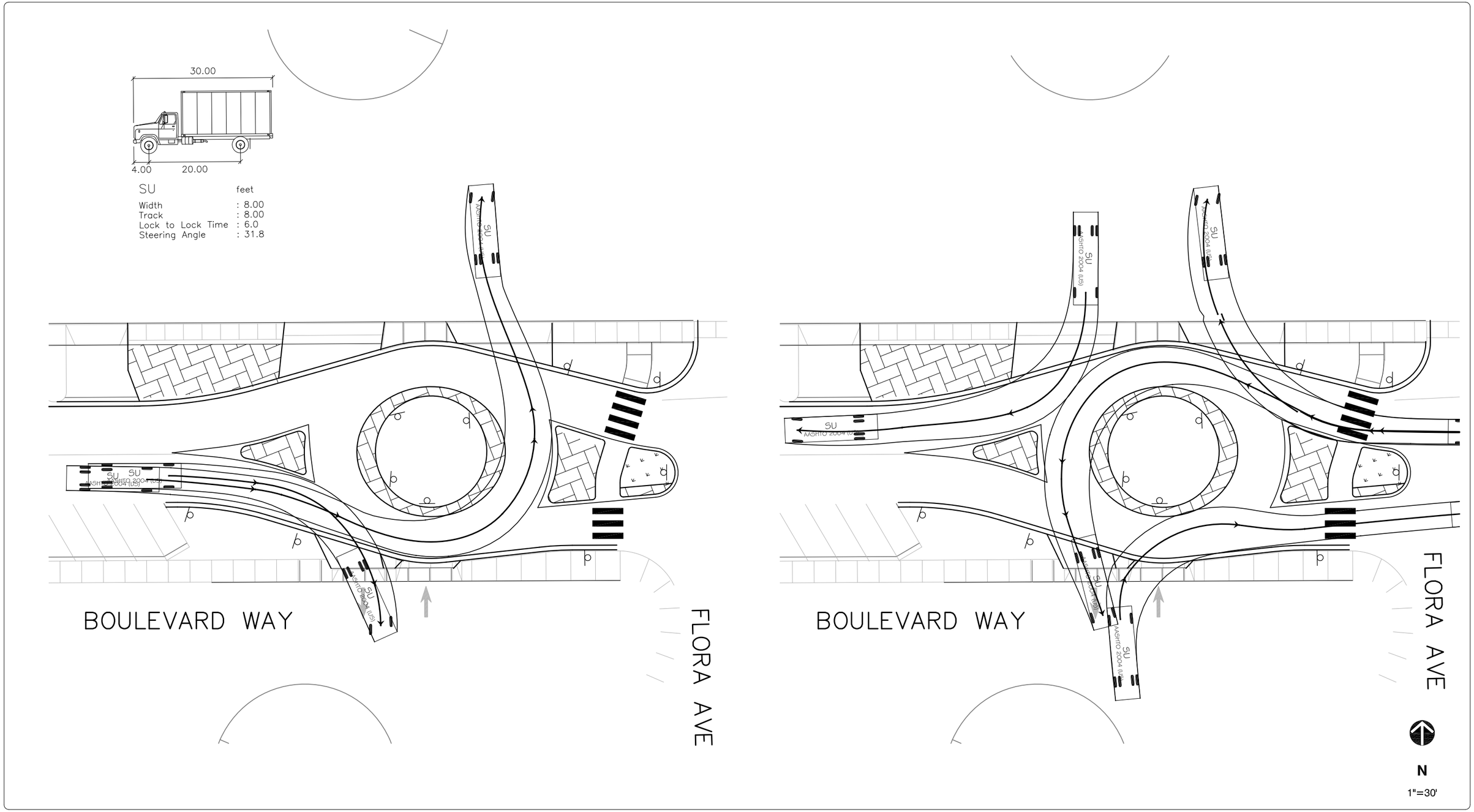
1"=40'

FEHR & PEERS

SARANAP VILLAGE
BOULEVARD WAY/SARANAP AVENUE ROUNDABOUT
FIRE TRUCK TURN TEMPLATES

FIGURE 4

May 06, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056-Figure 1.dwg

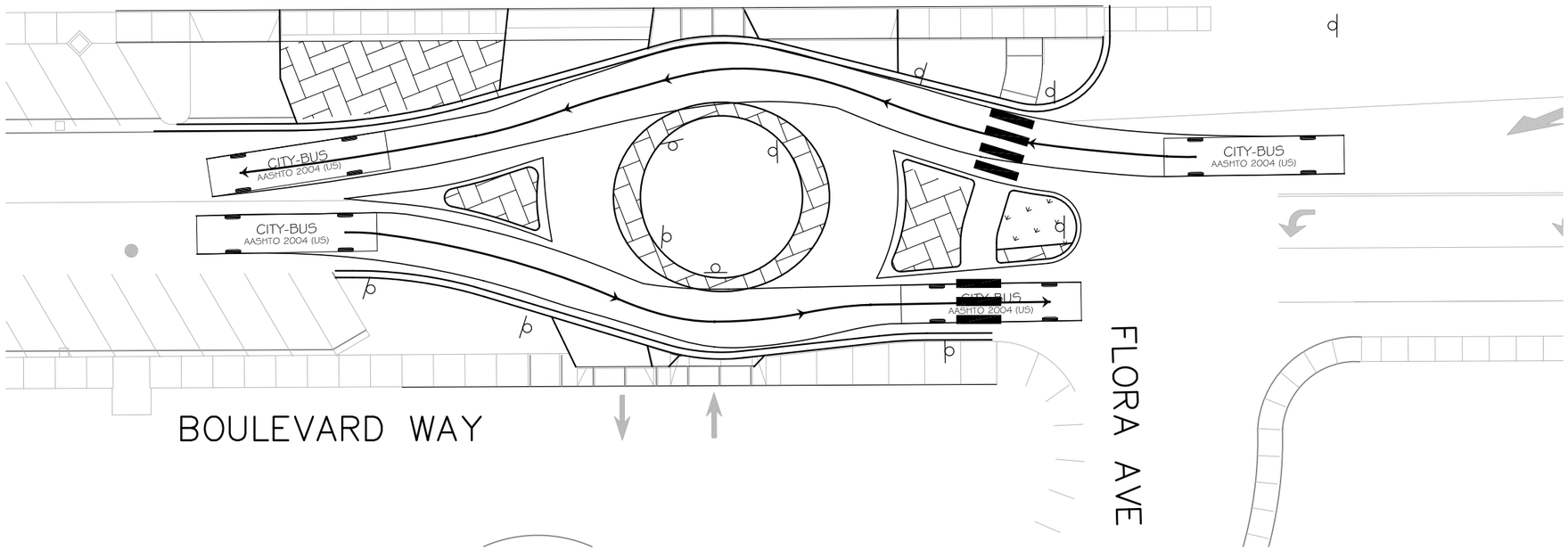


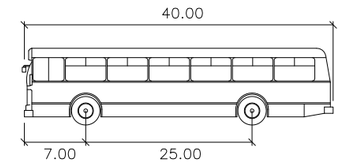
FEHR PEERS

SARANAP VILLAGE
OAK TREE PLANTER ISLAND
SINGLE UNIT TRUCK TEMPLATES

FIGURE 5

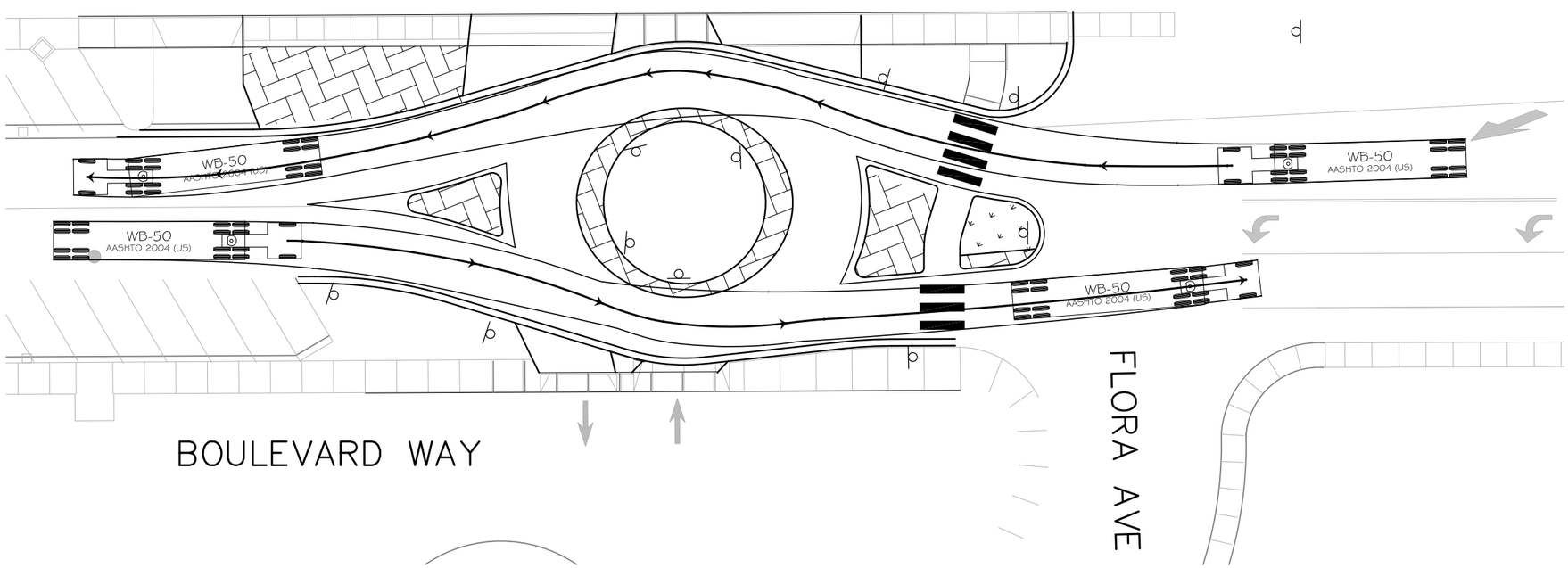
Apr 27, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056-Figure 1.dwg

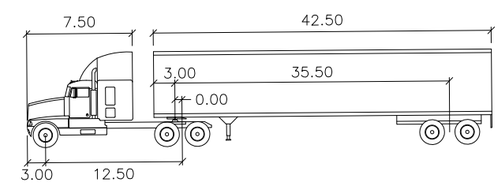




CITY–BUS
feet

Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.4





WB–50 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 17.7
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

N

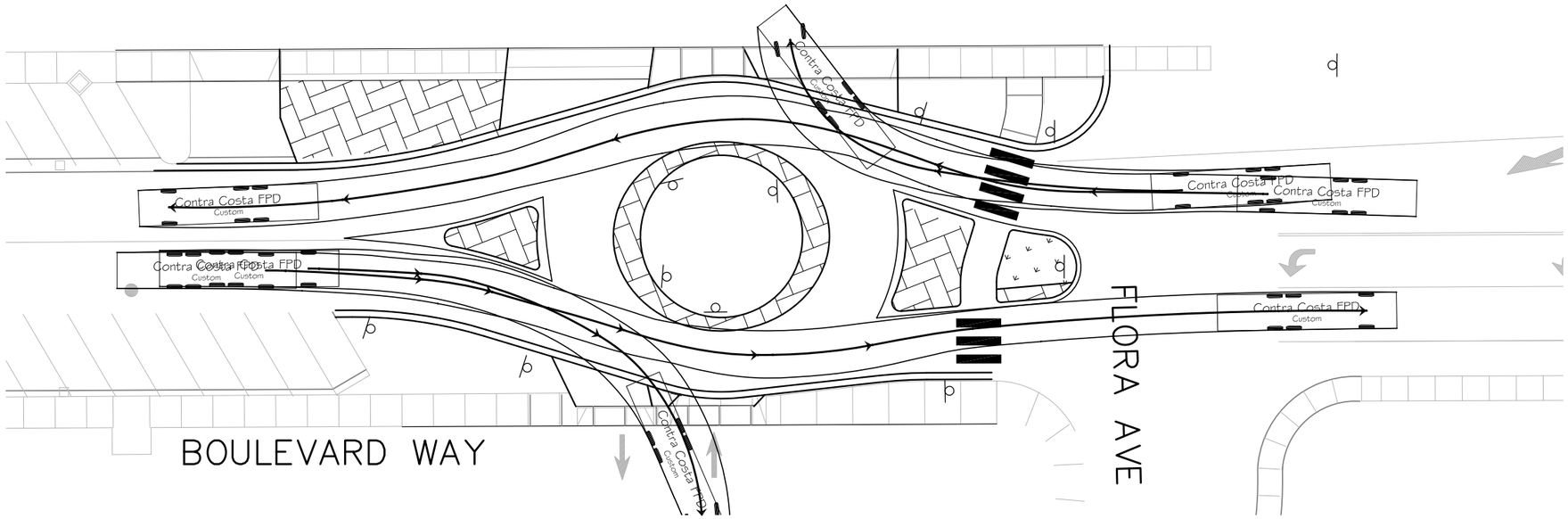
1"=30'

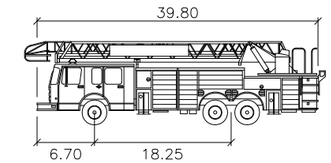
FEHR & PEERS

SARANAP VILLAGE
OAK TREE PLANTER ISLAND
WB-50 AND BUS TEMPLATES

FIGURE 6

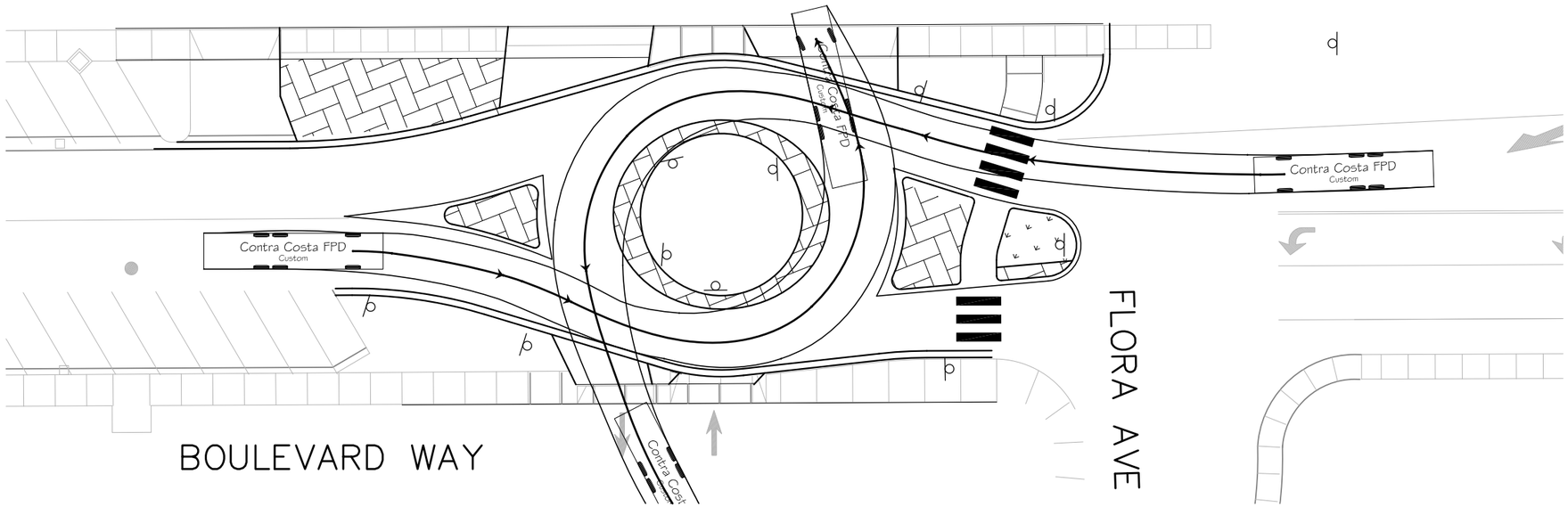
Apr 27, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056-Figure 1.dwg





Contra Costa FPD

Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 29.5



N

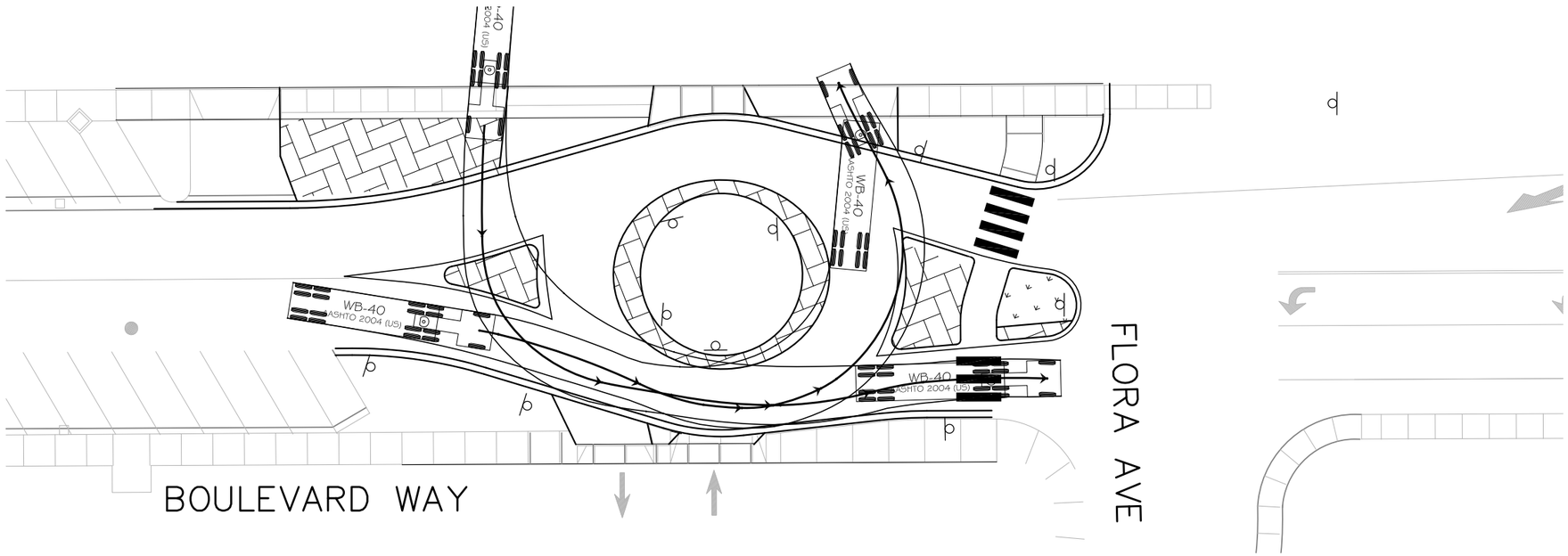
1"=30'

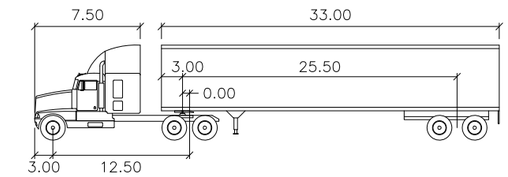
FEHR & PEERS

May 08, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056-Figure 1.dwg

SARANAP VILLAGE
OAK TREE PLANTER ISLAND
FIRETRUCK TEMPLATES

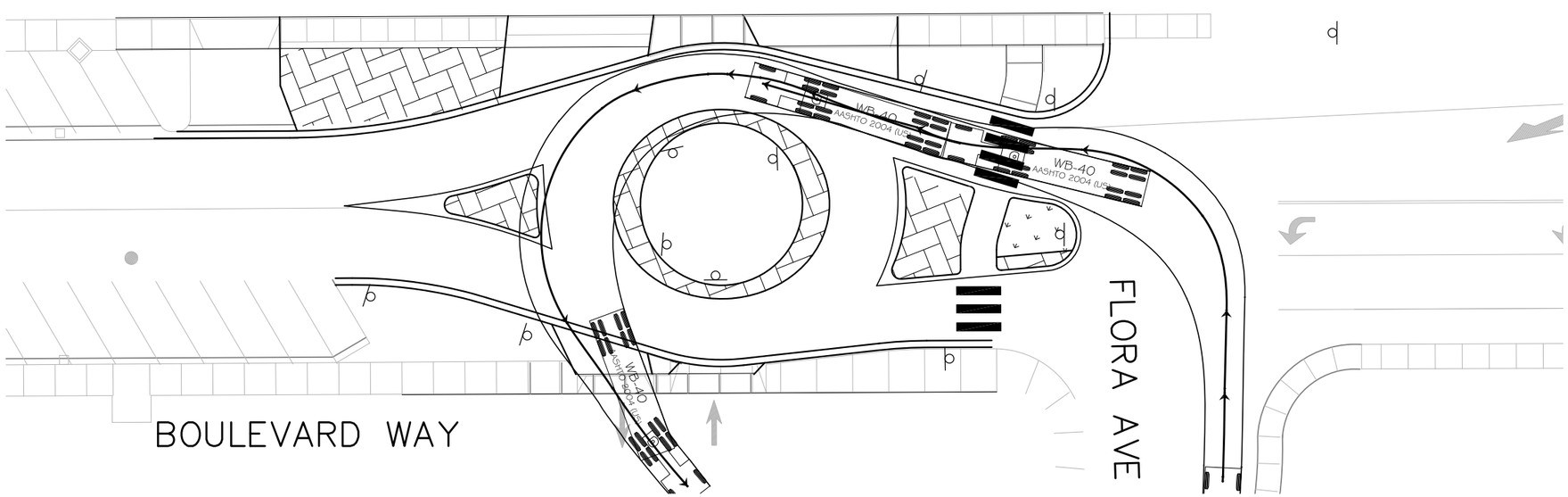
FIGURE 7





WB−40 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		



N

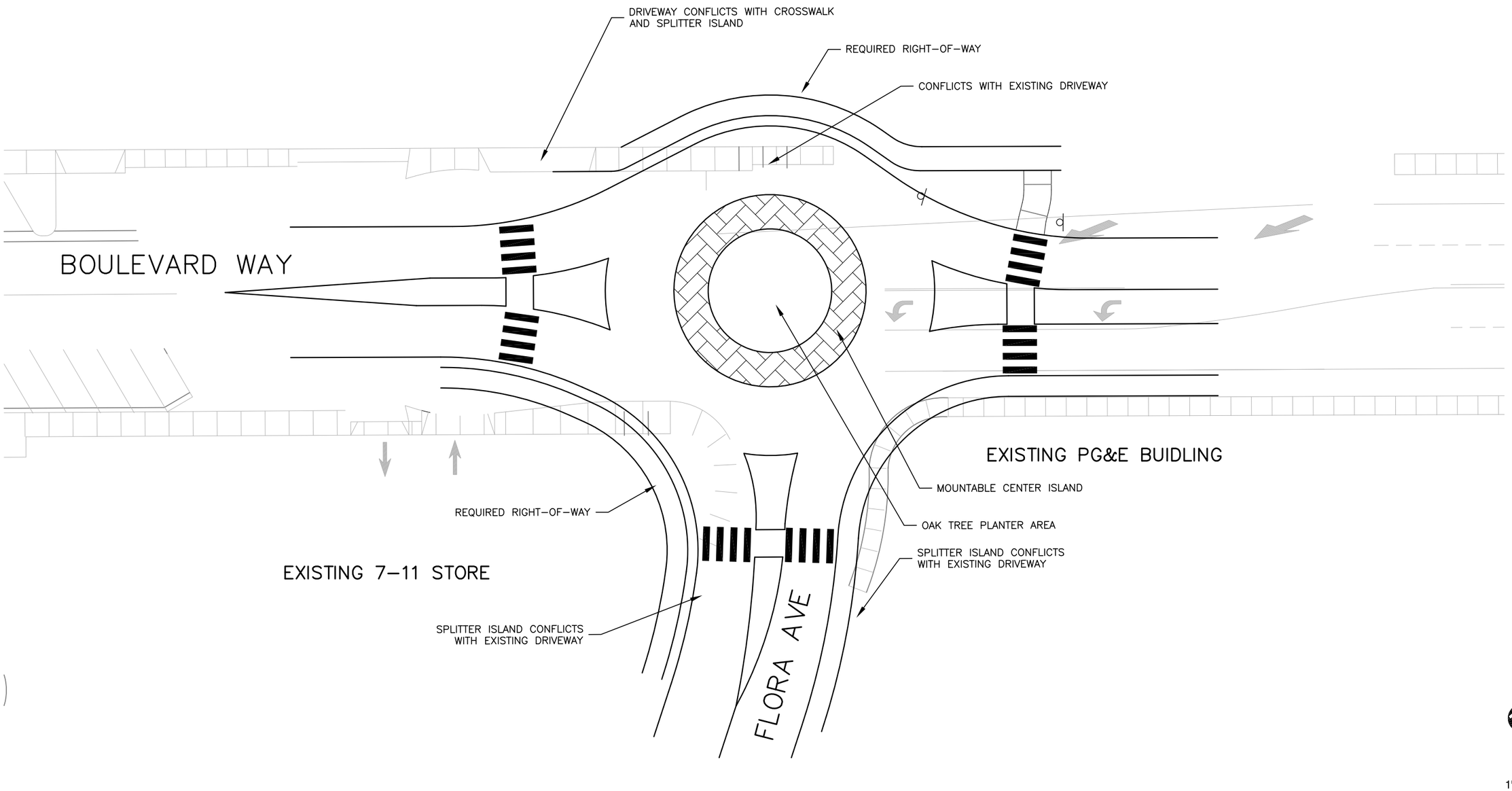
1"=30'

FEHR & PEERS

Apr 27, 2014 FPA
N:\PROJECTS_WC13\WC13−3057_Saranap_Village_Roundabout\CAD\65_Submittal\3056−Figure 1.dwg

SARANAP VILLAGE
OAK TREE PLANTER ISLAND
WB-40 LEFT TURN TEMPLATES

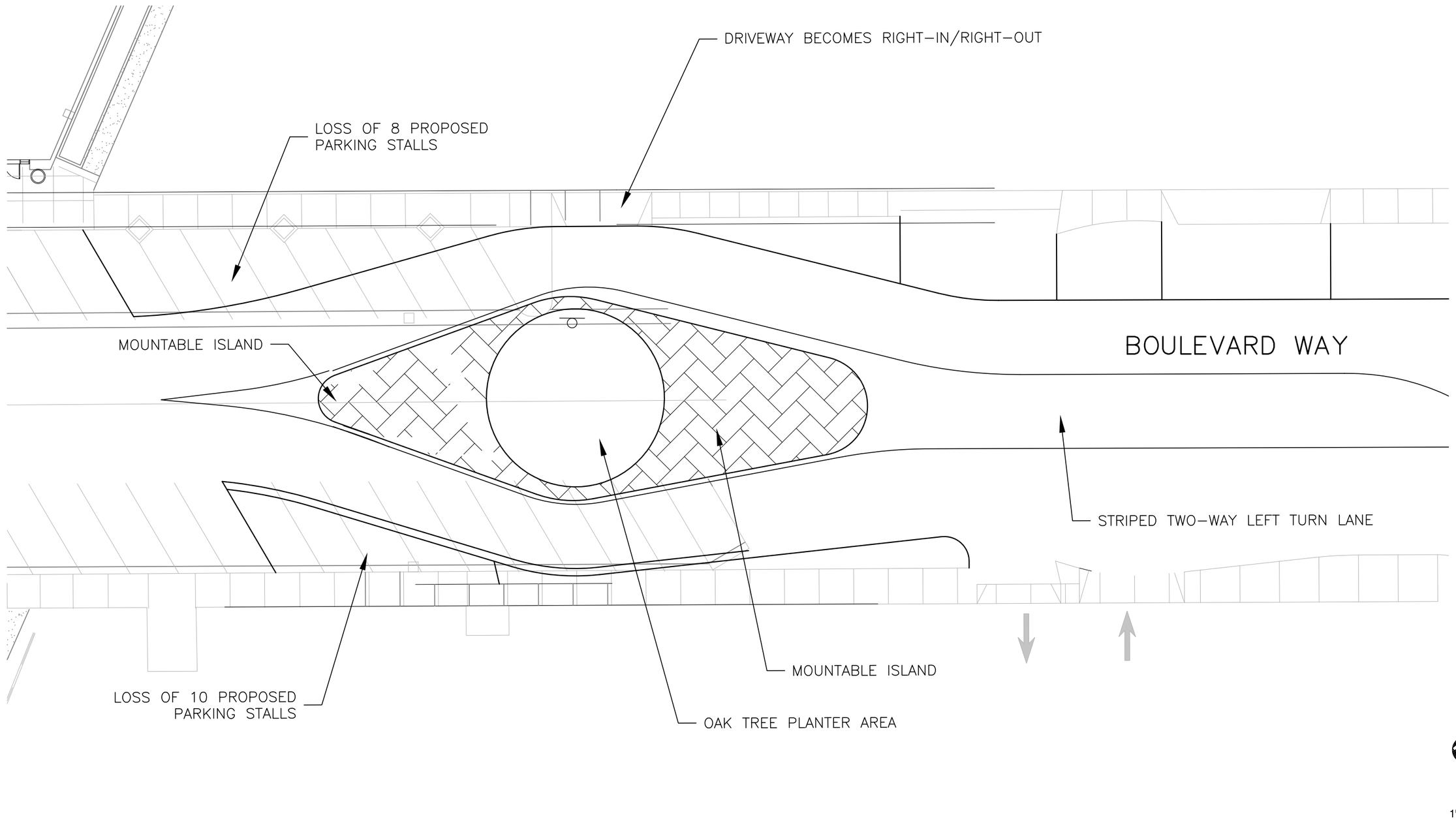
FIGURE 8



FEHR & PEERS

SARANAP VILLAGE
TREE ROUNDABOUT AT FLORA AVE CONCEPT
FIGURE 9

Apr 27, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\FP_Tree Roundabout_083013.dwg

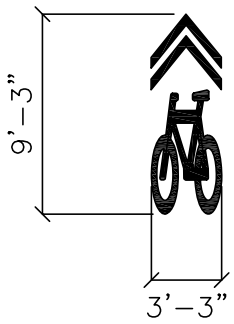


FEHR & PEERS

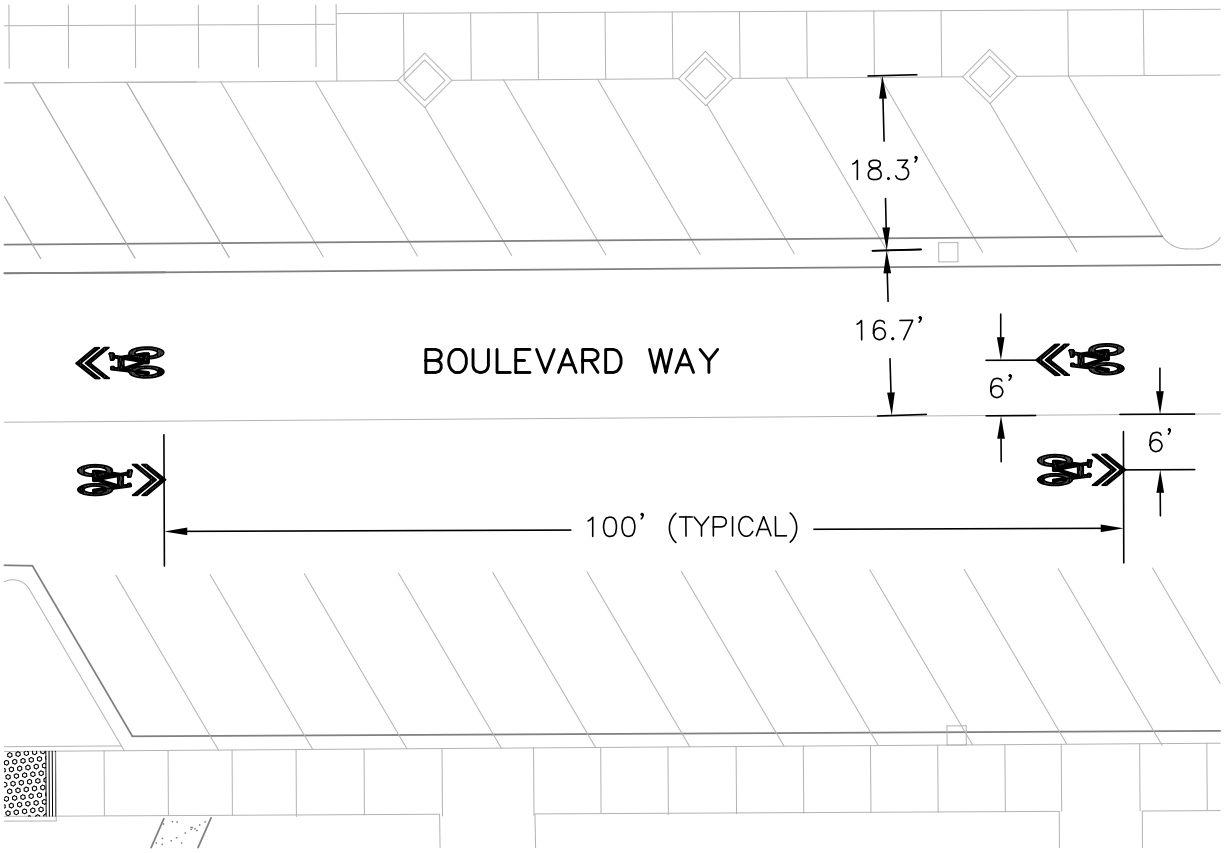
SARANAP VILLAGE
TREE ROUNDABOUT SHIFTED WEST CONCEPT

FIGURE 10

Apr 27, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\FP_Tree Roundabout_083013.dwg



SHARROW LANE MARKING
SEE CA MUTCD
FIGURE 9C-104(CA)



N

1"=20'

FEHR PEERS

SARANAP VILLAGE
TYPICAL SHARROW PAVEMENT MARKING

May 08, 2014 FPA
N:\PROJECTS_WC13\WC13-3057_Saranap_Village_Roundabout\CAD\65_Submittal\FP_Parking.dwg

FIGURE 11

Traffic Impact Analysis For the Proposed Saranap Village Project

Prepared For:

Contra Costa County

August 22, 2014

Prepared By:

omni · means
ENGINEERS · PLANNERS

PROPOSED SARANAP VILLAGE PROJECT
TRAFFIC IMPACT ANALYSIS

PREPARED FOR:
CONTRA COSTA COUNTY

PREPARED BY:
OMNI-MEANS, LTD.
ENGINEERS & PLANNERS
1901 OLYMPIC BOULEVARD, SUITE 120
WALNUT CREEK, CA 94596
(925) 935-2230

AUGUST 22, 2014

35-3528-01
(R16671TIA007.DOCX)

Table of Contents

INTRODUCTION 1
THE SARANAP VILLAGE PROJECT 3
EXISTING CONDITIONS 4
- Existing Roadways 4
- Existing Intersections 6
- Traffic Signal Warrant Analysis 14
- Existing Roadways/Driveways 14
- Freeway Segment Operations 16
- Bicycle and Pedestrian Facilities 16
- Transit Facilities 18

NEAR-TERM (NO PROJECT) TRAFFIC CONDITIONS 18
- Approved/Pending Projects 19
- Near-Term (No Project) Traffic Volumes 19
- Near-Term Intersection/Roadway Improvements 20
- Near-Term (No Project) Intersection Operation 20
- Near-Term (No Project) Roadway Operation 22
- Near-Term (No Project) Freeway Segment Operation 22

SIGNIFICANCE CRITERIA 23
PROPOSED PROJECT IMPACTS 25
- Project Description 25
- Project Trip Generation 26
- Project Trip Assignment 31
- Existing Plus Project Intersection Operations 32
- Existing Plus Project Roadway Operation 32
- Existing Plus Project Freeway Segment Operation 32
- Project Access/On-Site Circulation 36
- Transit… 40
- Project Parking Demand 41
- Near-Term Plus Project Intersection Operations 41
- Near-Term Plus Project Roadway Operation 41
- Near-Term Plus Project Freeway Segment Operation 43
- Year 2030 Cumulative (No Project) Conditions 44
- Methodology 44
- Planned Cumulative Circulation Improvements 45
- Year 2030 Cumulative (No Project) Intersection Operations 47
- Year 2030 Cumulative (No Project) Roadway Operation 47
- Year 2030 Cumulative (No Project) Freeway Segment Operation 47
- Year 2030 Cumulative Plus Project Intersection Operation 49
- Year 2030 Cumulative Plus Project Roadway Operation 49
- Year 2030 Cumulative Plus Project Freeway Segment Operation 49

SUMMARY/RECOMMENDED MEASURES 51
- Existing Conditions 51
- Near-Term (No Project) Conditions 51
- Existing Plus Project Conditions 51
- Near-Term Plus Project Conditions 53
- Year 2030 Cumulative (No Project) Conditions 53
- Year 2030 Cumulative Plus Project Conditions 54

PROPOSED PROJECT TRIP GENERATION DUE TO DESIGN MODIFICATIONS 55
- Additional Trips Due To Design Changes 55

PROPOSED PROJECT PARKING DEMAND; MBH ARCHITECTS (ATTACHED) 55

List of Figures

Figure 1 - Project Location and Vicinity Map 2
Figure 2 - Existing Study Intersections 8
Figure 3 - Existing Intersection Lane Geometry/Control 9
Figure 4 - Existing AM and PM Intersection Volumes 10
Figure 5 - AM and PM Near-Term (No Project) Intersection Volumes 21
Figure 6 - AM and PM Project Trip Volumes (Only) 33
Figure 7 – AM and PM Existing Plus Project Volumes 34
Figure 8 – Proposed Project Site Plan 37
Figure 9 – Proposed Project Streetscape Plan 38
Figure 10 --- AM and PM Near-Term plus Project Intersection Volumes 42
Figure 11 – AM and PM Year 2030 Cumulative (No Project) Intersection Volumes 46
Figure 12– AM and PM Year 2030 Cumulative Plus Project Intersection Volumes 50

List of Tables

Table 1 Level-Of-Service Criteria for Intersections 11
Table 2 Existing Conditions: Intersection Levels-of-Service AM and PM peak hour 12
Table 3 Level of Service (LOS) Criteria for Roadways 15
Table 4 Existing Conditions: Roadway Segment Levels of Service 16
Table 5 Freeway Operations; Existing LOS Results 17
Table 6 Existing and Near-Term (No Project) Conditions: Intersection Levels-of-Service AM and PM Peak Hour 22
Table 7 Near-Term Conditions: Roadway Segment Levels of Service 22
Table 8 Freeway Operations; Existing and Near-Term (No Project) LOS Results 23
Table 9A Proposed Project Daily Trip Generation Rates 28
Table 9B Proposed Project AM and PM Peak Hour Trip Generation Rates 28
Table 10A Proposed Project Trip Generation: Daily Trips 29
Table 10B Proposed Project Trip Generation: AM and PM Peak Hour 30
Table 11 Existing and Existing Plus Project Conditions: Intersection LOS AM and PM Peak Hour 35
Table 12 Existing And Existing Plus Project Conditions: Roadway Segment Levels of Service 35
Table 13 Freeway Operations; Existing and Existing Plus Project LOS Results 35
Table 14 Near-Term (No project) AND Near-Term Plus Project Conditions: Intersection LOS AM and PM Peak Hour 43
Table 15 Near-Term Plus Project Conditions: Roadway Segment Levels of Service 43
Table 16 Freeway Operations; Near-Term and Near-Term Plus Project LOS Results 44
Table 17 Year 2030 Cumulative (No project) and Year 2030 Cumulative Plus Project Conditions: Intersection LOS / AM and PM Peak Hour 48
Table 18 Year 2030 Cumulative (No Project) and Plus Project Conditions: Roadway Segment Levels of Service 48
Table 19 Freeway Operations; Year 2030 Cumulative (no Project) and Plus Project LOS Results 48
Table 20 Proposed Project Trip Generation: Additional Daily, AM, and PM Peak hour Trips Due To Design Modifications 55
Table 21 Proposed Project Trip Generation: Additional Daily Trips Due To Design Modifications 56

Appendices (Separate Document)

INTRODUCTION

This report presents the results of a traffic impact analysis performed by OMNI-MEANS for the proposed Saranap Village project in the Saranap area of Contra Costa County. The proposed mixed-use project would consist of up to 235 multi-family residential units, and 43,541square feet comprised of neighborhood retail uses and a fitness club. There would also be a new parking and circulation plan along Boulevard Way that would serve to promote vehicle access while providing traffic calming along the roadway. The project site would be located on both sides of Boulevard Way beginning just west of Saranap Avenue and extending east through the intersection for approximately 300 feet east of Saranap Avenue. (Figure 1 illustrates the Project Location and Vicinity Map). As described, the proposed project would consist of a mix of commercial-retail, residential, and restaurant uses located on the adjacent northeast, southwest, and southeast quadrants of the Saranap Avenue/Boulevard Way intersection. As part of the overall project plan, there would be major circulation improvements to portions of Boulevard Way and Saranap Avenue including pedestrian sidewalk enhancements, diagonal parking, and a proposed roundabout at the Saranap Avenue/Boulevard Way intersection and landscaped traffic circle east of the intersection just west of Flora Avenue.

Based on discussions with County Transportation Staff, the transportation issues for this development relate to proposed project trip generation associated with the various project uses, vehicle circulation along Boulevard Way with planned improvements, adjacent intersection operation under near-term and cumulative conditions, the effects of planned project circulation improvements on traffic flow and parking, and more localized operations of neighborhood streets affected by potential increases in proposed project traffic. Some of the key issues for the traffic analysis include the following:

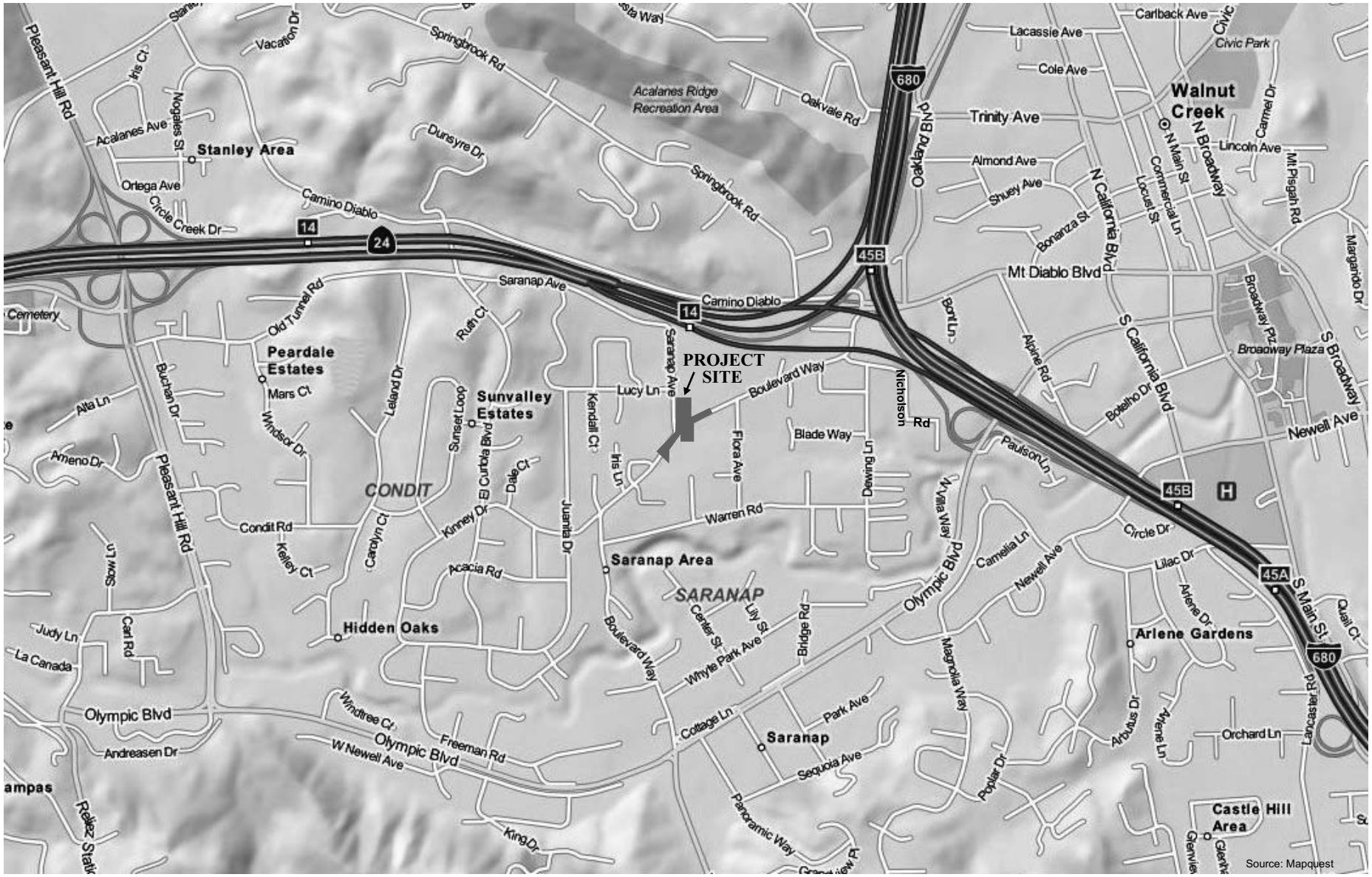
- Peak hour traffic operations at intersections in the project area along Boulevard Way extending from Tice Valley Boulevard northeast through Kinney Drive to Mt. Diablo Boulevard as well as outlying intersections extending to California Boulevard and Pleasant Hill Road;
- Project access on Boulevard Way and Saranap Avenue and their relationship to other nearby intersections and driveways;
- Proposed project trip generation during the peak weekday AM and PM commute periods and the interaction between residential and retail uses;
- The affect of proposed project traffic on local neighborhood streets;
- Review of previous transportation analyses conducted for approved projects;
- Proposed project parking relative to County code requirements and proposed supply.

Based on discussions with County Engineering and Planning staff, the following six scenarios have been analyzed as part of a comprehensive transportation and circulation analysis:

- *Existing Traffic Conditions*
- *Existing plus Project Conditions*
- *Near-Term [Approved/Pending] (No Project) Conditions*
- *Near-Term Plus Project Conditions*
- *Year 2030 Cumulative (No Project) Conditions*
- *Year 2030 Cumulative Plus Project Conditions*

Existing Traffic Conditions: Represents existing traffic flow conditions collected through new field counts and/or previous traffic studies for the seven existing study intersections and four roadway segments. Points of congestion and vehicle delays are noted for both the AM and PM peak commute hours.

Existing plus Project Conditions: Proposed project trips are added to existing traffic conditions to evaluate the immediate impact of project traffic and likely operating conditions with no lead time;



Project Vicinity Map

North

omni-means

figure 1

Near-Term (No Project) Conditions: Represents existing traffic plus traffic from anticipated approved projects over the next 3-5 year period. Approved developments may not have begun construction, may be under construction but not occupied, may be partially occupied, or pending.

Near-Term plus Project Conditions: Near-Term plus Project conditions build upon Near-Term No Project conditions by superimposing project-generated trips as they are distributed through study locations over existing traffic volumes and the trips generated by approved projects in the vicinity.

Cumulative Year 2030 (No Project) Conditions: Year 2030 conditions were derived by using Contra Costa Transportation Authority (CCTA) transportation model year 2030 volume projections (adjusted) for Boulevard Way;

Cumulative Year 2030 Plus Project Conditions: Year 2030 conditions adjusted to include proposed project volumes.

Adverse project impacts and improvements identified to mitigate project impacts will be presented in the final section of the report.

THE SARANAP VILLAGE PROJECT

This report addresses the circulation impacts of the Saranap Village project in two steps. First, this report addresses a preliminary design that was being considered by the applicant in January 2014, when this report was commenced. Second, this report addresses the Project as defined in February 2014. Trip generation for the project as defined in February 2014 is addressed on page 55 and following below. As explained in the section, the differences between the preliminary design and the project result in only 4 am and 9 pm additional peak trips. These trips are not sufficient to result in any material differences in the traffic impacts projected for the project. Accordingly, the results of the study of the preliminary January 2014 design (square feet) remain valid for the February 2014 project (square feet) as shown below:

Proposed Project Land Uses	Preliminary Design January 2014	Project February 2014
Non-Residential Uses (GLA Square Feet)		
Shopping Center	3,153	3,496
Grocery	14,789	15,236
Restaurant	5,383	5,589
Coffee Shop	2,000	2,135
Bank	791	690
Bar	2,222	2,222
Fitness Club	13,888	14,173
Total Non-Residential	42,226	43,541
Apartments/Condos/Townhomes	235	235
Parking Spaces	664*	664*

**Excludes street parking. Additional parking spaces may be added to achieve as many spaces as will fit, up to the number needed to accommodate the uses on site pursuant to standard County Code requirements.*

EXISTING CONDITIONS

Existing conditions describe the existing transportation and bicycle/pedestrian facilities serving the project study area.

EXISTING ROADWAYS

Roadways that provide primary circulation in the vicinity of the project site include Boulevard Way, Kinney Drive, Warren Road, Garden Court, Iris Lane, Molly Way, Saranap Avenue, Flora Avenue, Nicholson Road, Tice Valley Boulevard, Olympic Boulevard, Mt. Diablo Boulevard, Oakland Boulevard, Alpine Road, N. California Boulevard, El Curtola Boulevard, Old Tunnel Road, and Pleasant Hill Road (as shown in Figure 1). A brief description of each roadway follows:

Boulevard Way extends between Olympic Boulevard and Mt. Diablo Boulevard providing access primarily to residential and neighborhood-commercial areas in the Saranap area of Walnut Creek (unincorporated Contra Costa County). Extending in a north-south direction from Olympic Boulevard to Kinney Drive, Boulevard Way is a two-lane roadway with little or no curb, gutter, or sidewalks. The roadway width varies from 22-24 feet and the speed limit is 25 mph. In this segment, Boulevard Way provides access exclusively to neighborhood-commercial uses (near Olympic Boulevard) and residential homes and cul-de-sacs. At its intersection with Kinney Drive, Boulevard Way extends in a northeast direction through Saranap Avenue, Flora Avenue, Nicholson Road, and finally to Mt. Diablo Boulevard (among other local streets). In the segment between Kinney Drive and Saranap Avenue, the roadway continues as two-lane street with no curb, gutter, or sidewalks (except where more recent residential development has occurred) and provides access to residential areas. At Saranap Avenue, the roadway widens to four travel lanes (two in each direction) with curb, gutter, and sidewalks. This roadway design carries all the way through between Saranap Avenue to Mt. Diablo Boulevard. In this segment, Boulevard Way provides access to residential, retail, and commercial areas. Boulevard Way is designated as a two to four lane arterial street in the County's Roadway Network Plan (RNP), would remain a two-to-four lane street along its entire length, and would provide direct access to the proposed project site. On-street vehicle parking is generally prohibited on Boulevard Way between Olympic Boulevard and Saranap Avenue where no curb, gutter, or sidewalks exist. However, residents have been observed to park off-street in front of their property where the flow of through-traffic on Boulevard Way is not disrupted. On-street parallel parking is allowed along segments of Boulevard Way between Saranap Avenue to west of Mt. Diablo Boulevard.

Kinney Drive is a residential-collector street that extends in a westerly direction from Boulevard Way. A two-lane street, Kinney drive provides access exclusively to residential areas and has no pedestrian sidewalks. On-street vehicle parking is not allowed.

Warren Road extends east from Boulevard Way to Dewing Lane. A narrow two-lane street (20-foot width immediately east of Boulevard Way), Warren Road provides access to residential areas south of the proposed project site. Continuing east of Boulevard Way, the roadway widens as it extends past Island Court and Flora Avenue until reaching Dewing Lane. On-street parking is allowed along both sides of the street and Warren Road is designated as a residential collector street in the County's RNP.

Garden Court extends north of Boulevard Way and just east of Kinney Drive and is a short (approximately 350 feet in length) residential cul-de-sac.

Iris Lane extends north from Boulevard Way and is a purely residential street. Located east of Garden Court, the narrow (22 feet) two-lane street provides access to residential areas directly north of the proposed project site.

Molly Way is a one-way "loop" street that provides access to comparatively newer residential development in the project study area. Located north of Boulevard Way and west of Saranap Avenue, Molly Way extends west from Boulevard Way providing access to residential homes and re-connecting to Boulevard Way in a southerly direction. A pedestrian sidewalk is present along the north side of Boulevard Way extending from the Molly Way egress to Saranap Avenue. No on-street vehicle parking is allowed on Molly Way.

Saranap Avenue extends north from Boulevard Way in the proposed project site area. A two-lane roadway, Saranap Avenue provides access to residential and commercial areas between SR-24 and Boulevard Way. Curb, gutter, and sidewalk are present along its entire length between Boulevard Way to where it parallels the State Route 24 freeway and on-street vehicle parking is allowed in this segment. At SR-24, the roadway extends west and parallels the freeway extending to El Curtola Boulevard providing access to residential areas. Saranap Avenue is designated as a collector street in the County's RNP.

Flora Avenue extends south of Boulevard Way to Warren Road and is located east of the proposed project site. Flora Avenue is a wide two-lane street that provides access to commercial and residential areas with pedestrian sidewalks on both sides of the street for most of its length. Flora Avenue is designated as collector street in the County RNP.

Nicholson Road extends in a southeast direction from Boulevard Way just south of the SR-24 southbound flyover/connector to I-680. Nicholson Road has two travel lanes and provides access to residential areas east of the project site. Vehicle parking is allowed on the south side of the street adjacent to residences. Unimproved pedestrian sidewalks (gravel pavement) are located along both sides of the street extending through Clover Lane.

Olympic Boulevard is a major arterial street that extends in an east-west direction south of the project site. East of Boulevard Way, Olympic Boulevard is a four-lane street with raised medians and left-turn storage lanes providing access into downtown Walnut Creek. Between Boulevard Way and I-680, the roadway provides access primarily to residential, recreational, and small neighborhood-commercial uses. A full-access interchange is located at Olympic Boulevard and I-680 with Olympic Boulevard serving as a major 'gateway" roadway into the City of Walnut Creek downtown core area. West of Boulevard Way, Olympic Boulevard is a wide, two-lane arterial street extending through Pleasant Hill Road to Reliez Station Road in the City of Lafayette. In this segment, the roadway provides access to residential uses.

Tice Valley Boulevard extends in a north-south direction and forms the fourth (northbound) leg of the Boulevard Way/Olympic Boulevard intersection. A four-lane arterial street, Tice Valley Boulevard provides access to a mix of residential, commercial, and institutional uses as it extends south from Boulevard Way into the City of Walnut Creek and the Rossmoor retirement community.

Mt. Diablo Boulevard is located in the City of Walnut Creek east of the project site and provides access to commercial-retail areas in the City as well as access to SR-24. A four-lane arterial street, Mt. Diablo Boulevard extends east from Boulevard Way into downtown Walnut Creek extending through Oakland Boulevard, Alpine Road, and N. California Boulevard. A two-way-left-turn-lane (TWLTL) exists between Oakland Boulevard and N California (except at intersections). Similar to Olympic Boulevard, Mt. Diablo Boulevard serves as gateway roadway into downtown Walnut Creek serving both local and regional traffic.

Oakland Boulevard extends north-south between Mt. Diablo Boulevard and Ygnacio Valley Road. A two-lane collector street, two-way vehicle travel is permitted between Mt. Diablo Boulevard and Trinity Avenue. Between Trinity Avenue and Ygnacio Valley Road, Oakland Boulevard provides one-way travel (southbound). Oakland Boulevard provides access to office, residential, and commercial areas.

Alpine Road extends north-south between Mt. Diablo Boulevard and Botelho Drive. A two-lane roadway, Alpine Road provides access to commercial and residential areas on either side of Olympic Boulevard. In addition, Alpine Road also serves as a connector route to the Olympic Boulevard/I-680 interchange via both Mt. Diablo Boulevard and S. California Street (via Botelho Drive).

California Boulevard (North and South) is a major north-south arterial street extending through Walnut Creek between Newell Avenue and North Main Street. A four-lane roadway with raised medians, Mt. Diablo Boulevard divides California Boulevard from north and south designations. South California Boulevard provides access primarily to retail-commercial areas. North of Mt. Diablo Boulevard, North California Boulevard provides access to both retail-commercial and residential areas.

El Curtola Boulevard is located west of the proposed project site and is a two-lane, north-south roadway. Serving residential areas between Juanita Drive and Saranap Avenue, El Curtola Boulevard also extends north over SR-24 to Camino Diablo forming the east-west legs of the Saranap Avenue/El Curtola Boulevard/Old Tunnel Road intersection in the City of Lafayette.

Old Tunnel Road extends west from El Curtola Boulevard to Pleasant Hill Road in the City of Lafayette. A two-lane roadway, Old Tunnel Road provides access to residential areas and limited commercial (office) uses adjacent to Pleasant Hill Road.

Pleasant Hill Road is a four-lane arterial street that extends from Olympic Boulevard through portions of Lafayette, Pleasant Hill, Walnut Creek, and Contra Costa County in a north-south direction. At its intersection with Old Tunnel Road, Pleasant Hill Road has raised landscaped medians, left-turn channelization, and Class II bike lanes. In addition, Class I pedestrian/paths are located on each side of the roadway. A full interchange with SR-24 is located directly north of Old Tunnel Road. In addition, the SR-24 eastbound off-ramp forms the western leg of the Pleasant Hill Road/Old Tunnel Road/SR-24 westbound off-ramp intersection. Like I-680 and SR-24, Pleasant Hill Road is designated at a Route of Regional Significance (RORS).

Regional access to the proposed project site is provided by Interstate 680 (I-680) and State Route 24 (SR-24). These facilities are located east and north of the project site, respectively. Vehicle access to I-680 can be gained at the Olympic Boulevard/I-680 north-south interchange. Access to SR-24 can be gained via Boulevard Way to Mt. Diablo Boulevard. Both freeway facilities are designated at Routes of Regional Significance (RORS) based on CCTA guidelines.

EXISTING INTERSECTIONS

The analysis of specific study intersections have been chosen in consultation with Contra Costa County Engineering staff for both existing and proposed project operating conditions.[1] The selection of study intersections is also consistent with the Contra Costa Transportation Authority (CCTA) Technical Procedures Manual (updated 2013). These guidelines dictate that any major intersection experiencing a 50 vehicle trip increase from proposed project uses must be analyzed for future operating conditions. Intersection operation (and to a lesser degree roadway capacity) is usually considered the major factor in determining the traffic handling capacity of a local circulation system. To assess vehicle traffic flows on key streets in the project study vicinity, new AM and PM peak commute period (7:00-9:00 a.m. and 4:00-6:00 p.m.) intersection turning movement counts were conducted at nine (9) of the existing intersections within the project study area. Peak hour volumes for intersections in Walnut Creek and Lafayette were obtained from recent transportation studies conducted for the Cities of Walnut Creek and Lafayette.[2 3] In

1 Mr. Jerry Fahy, Senior Traffic Engineer, Contra Costa County, Personal communication, February 24, 2009.

2 Omni Means Ltd, AM and PM (7:00-9:00 a.m. & 4:00-6:00 p.m.) peak period intersection counts on Boulevard Way and Old Tunnel Road, 2013, 2014.

all cases, AM and PM peak hour intersection counts were conducted when all schools were in session during a normal weekday period (Tuesday, Wednesday, or Thursday).

Intersections:	*Control:*
1) Boulevard Way / Olympic Boulevard / Tice Valley Boulevard	Signal
2) Boulevard Way / Warren Road	Stop-Sign (Warren Rd.)
3) Boulevard Way / Kinney Drive / Garden Court	Stop-Sign (Kinney-Garden Ct.)
4) Boulevard Way / Saranap Avenue	Stop-Sign (Saranap Ave.)
5) Boulevard Way / Flora Avenue	Stop-Sign (Flora Ave.)
6) Boulevard Way / Nicholson Road	Stop-Sign (Nicholson Rd.)
7) Boulevard Way / Mt. Diablo Boulevard	Signal
8) Mt. Diablo Boulevard / Oakland Boulevard	Signal
9) Mt. Diablo Boulevard / Alpine Road	Signal
10) Mt. Diablo Boulevard / California Boulevard	Signal
11) Olympic Boulevard / Alpine Road	Signal
12) Olympic Boulevard / I-680 NB Ramps	Signal
13) Olympic Boulevard / I-680 SB Off-Ramp / Paulson Lane	Signal
14) Saranap Avenue / El Curtola Boulevard / Old Tunnel Road	Multi-Way-Stop-Control
15) Pleasant Hill Road / Old Tunnel Road / SR-24 WB Off-Ramp	Signal

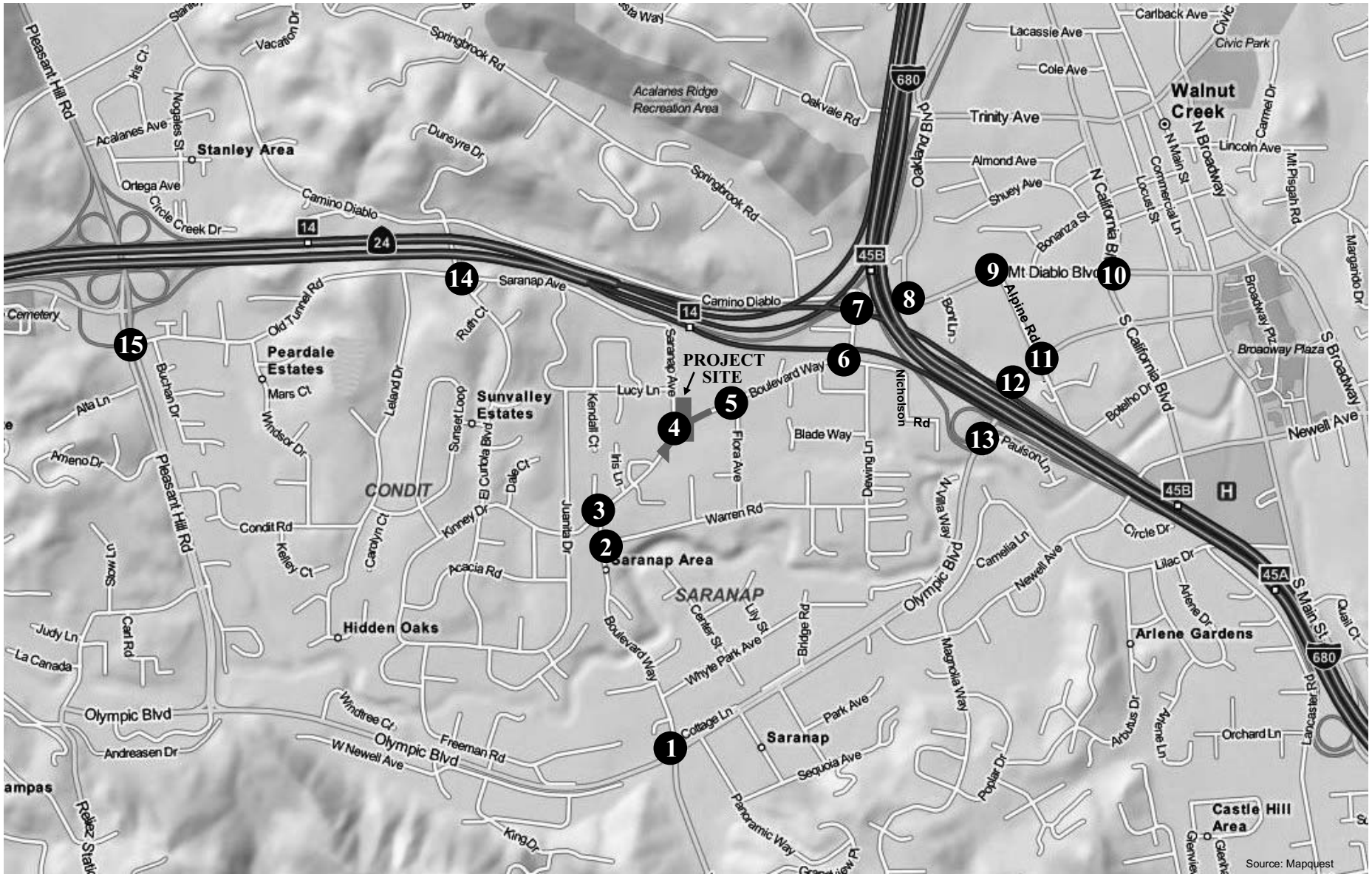
Existing study intersections are identified in Figure 2. Existing lane geometries and control are shown in Figure 3. Existing AM and PM peak hour traffic volumes are shown on Figure 4.

Intersection Level-of-Service (LOS) Concept/Methodologies

Intersection LOS provides the most accurate measure of operational performance with a scale ranging from LOS A-F. These ratings correspond to a volume/capacity (v/c) ratio and/or vehicle delay in seconds. LOS A represents relatively free-flow conditions with little delay at intersections. LOS E represents unstable or unbalanced flow conditions with volumes at or near design capacity. LOS F represents a significantly congested condition where traffic flows can exceed design capacities resulting in long vehicle queues and/or delays from the minor-street driveway. At unsignalized intersections, stated intersection LOS usually refers to the minor street or stop-sign controlled driveway movement (please refer to LOS Definitions - Table 1). For signalized intersections located within the County or City of Walnut Creek, intersections have been calculated using *CCTA version 2.35* software yielding a consistent volume/capacity (v/c) ratio and corresponding LOS. For all remaining unsignalized intersections in the County (and signalized intersections in Lafayette), *Synchro-Simtraffic* software was utilized.

All quantities used in the traffic impact analysis are consistent with Synchro-Simtraffic software, Contra Costa Transportation Authority (CCTA) model output, and modern roundabout analysis. Specifically, with respect to Synchro-Simtraffic software all intersection level-of-service (LOS) incorporates Highway Capacity Manual 2000 (HCM 2000) operations methodology. These "field level" intersection LOS calculations incorporate appropriate heavy vehicle adjustments factors, peak hour factors, and signal lost-time factors. A standard peak hour factor (PHF) of 0.92 is typically applied to all analysis scenarios in this study (PHF refers to traffic approach progression through the signal). Vehicle lane storage capacity, control, and vehicle queuing are also accounted for in the Synchro LOS calculations. Modern roundabout

3 AECOM, 1500 N. California Boulevard EIR, Chapter 4.13---Transportation and Traffic, Existing AM and PM peak hour intersection volumes; Mt. Diablo Boulevard and Olympic Boulevard, 2012. ; and TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012 . The EIR prepared for the Terraces project studied the original proposal for 315 apartments, and the traffic impacts of that 315-unit project were incorporated into this Saranap Village study. After the Terraces EIR was certified by the Lafayette City Council, the project was scaled back considerably. Because this Saranap Village study incorporates the impacts of the original, 315-unit project, it presents a conservative analysis.

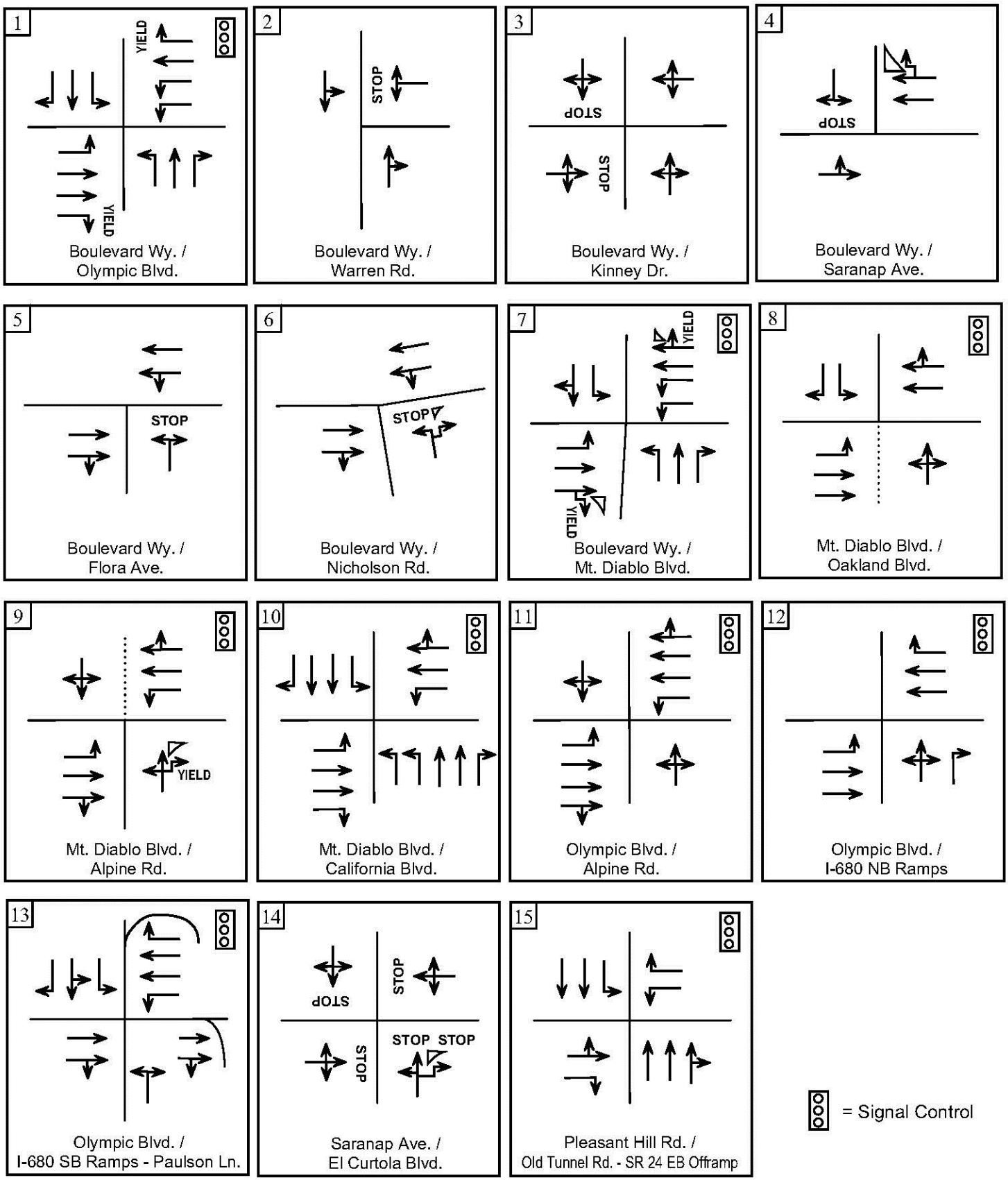


Study Intersections Map

North

omni-means

figure 2

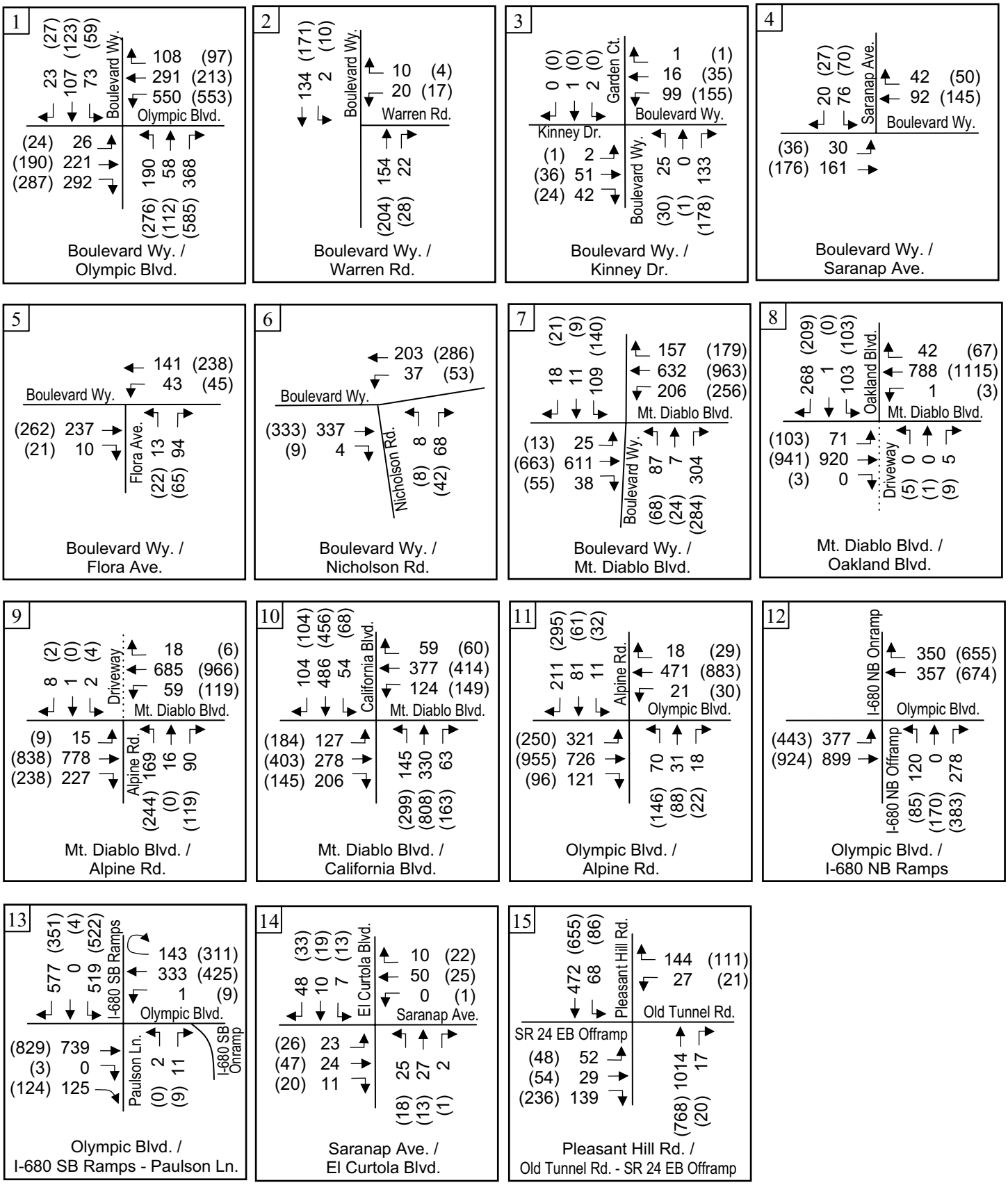


Intersection Lane Geometries & Controls

North

omni-means

figure 3



Existing A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 4

TABLE 1
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	Type of Flow	Delay	Maneuverability	Control Delay (seconds/vehicle) Signalized	Unsignalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0 secs. ≤ 0.60 v/c	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10 and ≤ 20.0 secs. 0.61 – 0.70 v/c	>10 and ≤ 15.0	>10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20 and ≤ 35.0 secs. 0.71 – 0.80 v/c	>15 and ≤ 25.0	>15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles of stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35 and ≤ 55.0 secs. 0.81 – 0.90 v/c	>25 and ≤ 35.0	>25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55 and ≤ 80.0 secs. 0.91 – 1.00 v/c	>35 and ≤ 50.0	>35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0 secs. > 1.00 v/c	> 50.0	> 50.0

References: 1. Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000, Contra Costa Transportation Authority (CCTA), Technical Procedures Update, Final, July 9, 2006

analysis has identified roundabout design criteria and performance based on policies and design standards documented in NCHRP Report 672 and the Caltrans Highway Design Manual. Intersection LOS for roundabout operation has been based on the SIDRA software program. This software program analyzes roundabout operation and LOS based on a "gap acceptance" model and is the current industry standard.

All methodologies address morning and evening peak traffic periods. The phrase used in this report to refer to these periods is “peak hour” traffic volumes and/or trip generation. This is highest hour of traffic volumes (four consecutive 15-minute periods) that occurs within the two-hour AM and PM commute periods. The peak periods are based upon standard practices of local jurisdictions and CCTA, and typically extend from 7:00 to 9:00 am and 4:00 to 6:00 pm.

Based on *HCM 2000* operations methodology, this methodology yields“field level” operations analyses with an intersection LOS and corresponding vehicle delay expressed in seconds.

Existing Intersection Operation

Existing intersection LOS has been shown in Table 2. As calculated, all project study intersections are operating at LOS D or better during both the AM and PM peak hours. Some congestion/vehicle queuing was observed at the Olympic Boulevard/I-680 NB ramp and Olympic Boulevard/Alpine Road intersections (see below). However, most vehicle queues were observed to clear within the allotted green time at these intersections. All unsignalized (stop-sign controlled) intersections experience average vehicle delays (10-15 seconds) and operate acceptably for minor street operations.

TABLE 2
EXISTING CONDITIONS: INTERSECTION LEVELS-OF-SERVICE
AM AND PM PEAK HOUR

			AM Peak Hour			PM Peak Hour		
#	Intersection	Control Type	V/C Ratio Delay	LOS	Warrant met	V/C Ratio Delay	LOS	Warrant Met
1	Boulevard Way/Olympic-Tice Blvd.	Signal	0.43	A	---	0.46	A	---
2	Boulevard Way/Warren Road	TWSC	10.2	B	No	11.2	B	No
3	Boulevard Way/Kinney Drive	TWSC	10.5	B	No	11.2	B	No
4	Boulevard Way/Saranap Avenue	TWSC	11.4	B	No	12.0	B	No
5	Boulevard Way/Flora Avenue	TWSC	10.1	B	No	10.8	B	No
6	Boulevard Way/Nicholson Road	TWSC	13.1	B	No	14.5	B	No
7	Boulevard Way/Mt. Diablo Blvd.	Signal	0.45	A	---	0.52	A	---
8	Mt. Diablo Blvd./Oakland Ave.	Signal	0.40	A	---	0.47	A	---
9	Mt. Diablo Blvd./Alpine Rd.	Signal	0.49	A	---	0.60	A	---
10	Mt. Diablo Blvd./California Blvd.	Signal	0.40	A	---	0.54	A	---
11	Olympic Blvd./Alpine Rd.	Signal	0.39	A	---	0.51	A	---
12	Olympic Blvd./I-680 NB Ramps	Signal	0.58	A	---	0.86	D	---
13	Olympic Blvd./I-680 SB Off/Paulson	Signal	0.62	B	---	0.51	A	---
14	Saranap Ave./El Curtola Blvd./Old Tunnel Rd.	MWSC	7.5	A	No	7.5	A	No
15	Pleasant Hill Rd./Old Tunnel Rd./SR-24 WB Off	Signal	16.6	B	---	18.6	B	---

Legend: TWSC = Two-Way-Stop-Control (minor street). MWSC = Multi-Way-Stop-Control. Warrant: Based on California MUTCD Warrant #3. Signalized intersection LOS calculations based on CCTA 2.35 methodology (City of Walnut Creek). CC County/City of Lafayette signalized/unsignalized intersection LOS calculations based on HCM 2000 methodology using Synchro-Simtraffic software.

Intersection Field Observations

Based on field observations and data collection efforts, all of the unsignalized study intersections along Boulevard Way are operating at LOS B or better during the AM and PM peak hours. However, specific intersections located just west of the project site or at the Olympic Boulevard/I-680 interchange exhibit unique characteristics that can create vehicle or pedestrian conflicts. These include the Boulevard Way/Kinney Drive/Garden Court, Boulevard Way/Warren Road, Olympic Boulevard/I-680 northbound ramps, and Olympic Boulevard/Alpine Road intersections. A brief description of each intersection follows:

The Boulevard Way/Kinney Drive/Garden Court intersection is non-standard in its approach alignment and traffic control. At this location, Boulevard Way forms the northbound and westbound approach legs of the intersection. However, since Boulevard Way is designated as an arterial street and carries the majority of through-traffic flow through the intersection, both approach legs are uncontrolled. These Boulevard Way approach legs transition through a sharp curve. Kinney Drive forms the eastbound approach leg of the intersection and is stop-sign controlled. Due to Boulevard Way being uncontrolled, eastbound motorists stopped on Kinney Drive can have a difficult time determining if approaching motorists (westbound) on Boulevard Way will continue west on Kinney Drive or transition south around the curve. Finally, Garden Court forms the southbound approach of the intersection and is stop-sign controlled. This southbound approach is off-set approximately 20-25 feet to the east and requires careful progression for inbound/outbound motorists. The non-standard control at this intersection refers to the eastbound Kinney Drive and southbound Garden Court approaches being stop-sign controlled. Typically, the north-south or east-west approach legs would be stop-sign controlled and this would be commonly referred to as a two-way-stop-control (TWSC) intersection. However, this is not the case at the Boulevard Way/Kinney Drive/Garden Court intersection with the eastbound and southbound approach legs stop-sign controlled. It is noted that with the recent approval of the Sufism Reoriented project (located just east of Kinney Drive on the south side of Boulevard Way) Boulevard Way would be improved in this area. Please refer to "Near-Term (No Project) Circulation Improvements." Even with its "non-standard" approach alignment and control, overall intersection operation at the Boulevard Way/Kinney Drive/Garden Court is LOS B for all stop-sign controlled movements during both the AM and PM peak hours.

The Boulevard Way/Warren Road intersection is a standard, minor street stop-sign controlled intersection. Warren Road is stop-sign controlled at Boulevard Way forming a "T-type" intersection. Field observations indicate that westbound motorists turning left from Warren Road southbound onto Boulevard Way must extend slightly into the intersection to see on-coming north-south traffic on Boulevard Way. This is due to existing foliage and utility poles on the north side of the intersection that limits vehicle site distance to the north. In addition, Boulevard Way is somewhat narrow (20-21 feet) at its intersection with Warren Road and this limits the ability of westbound motorists on Warren Road to extend into the intersection to see oncoming traffic.

The Olympic Boulevard/I-680 Northbound Ramps intersection experiences vehicle queuing for the westbound right-turn movement from Olympic Boulevard onto the I-680 northbound on-ramp. This is particularly evident during the PM peak hour when the westbound right-turn volume on Olympic Boulevard is at its highest. Other factors contribute towards overall vehicle queuing including a single right-turn lane, short storage distance between Alpine Road and the northbound I-680 on-ramp, and northbound motorists exiting I-680 on the off-ramp and continuing through the intersection onto the northbound on-ramp. Field observations indicate that most vehicle queues clear the intersection during the allotted green time for the specific movement. However, overall demand for the westbound right-turn lane can extend east back through Alpine Road towards S. California Boulevard during peak demand periods.

The Olympic Boulevard/Alpine Road intersection experiences vehicle queuing for the westbound

through-movement directly related to vehicle demand/congestion for the Olympic Boulevard/I-680 northbound ramps intersection (see above).

Temporary Construction Activity: Construction of the Sufism Reoriented Sanctuary project has been ongoing along the south side of Boulevard Way extending from south of Kinney Drive to Molly Way (August, 2013). During some of the project construction phases, motorists on Boulevard Way had been observed to by-pass the construction area and associated vehicle delays by using Warren Road and Flora Avenue (both directions). However, residents living along Warren Road and Flora Avenue have noticed some increases in "cut-through" traffic since Sufism Sanctuary construction began. Traffic diversions related to construction of the Sufism Sanctuary are temporary and will cease when construction is completed at the site including ROW and frontage improvements along Boulevard Way. In addition, traffic diversions only occurred during the most intense construction phases. Recent field observations indicate that east-west traffic flows on Boulevard Way in the construction area have returned to normal progression due to reduced construction activity.[4]

TRAFFIC SIGNAL WARRANT ANALYSIS

A supplemental traffic signal warrant analysis has been completed to determine whether unsignalized study intersections may require or benefit from the installation of a traffic signal. The term "signal warrant" refers to any of the eight established methods used by Caltrans to quantify the need for a traffic signal at an unsignalized intersection. The eight signal warrant methods are described in the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD).

The California MUTCD indicates that the installation of a traffic signal should be considered only if one or more of the eight signal warrants are met. This traffic analysis has performed the peak hour volume-based Warrant #3 on all unsignalized study intersections. The peak hour volume warrant refers to a combination of minor street volume (100 vehicle minimum) and major street volumes (400-1,400 vehicles) that would qualify an intersection for a signal during the peak commute hour. The results of the signal warrant analyses may indicate that a traffic signal could be beneficial to the operations of an intersection. The final decision to install a traffic signal should, however, be based upon further studies utilizing additional warrants as presented in the California MUTCD.

At this time, none of the six unsignalized intersections would qualify for signalization under MUTCD warrant #3 peak hour volume criteria due to minor street (and major street) volumes being too low.[5] Based on a review of existing and future volumes, only the Flora Avenue/Boulevard Way intersection would have the minimum volumes that would have the potential to meet signal warrant satisfaction. All other minor street approach volumes at the Warren Road, Kinney Drive, and Nicholson Avenue intersections at Boulevard Way and the Saranap Avenue/El Curtola Boulevard intersection would be too low for signal warrant satisfaction. This would be true for all analyzed scenarios with and without proposed project scenarios. It is noted Saranap Avenue/Boulevard Way intersection would be improved with all proposed project scenarios (see Appendices for signal warrant sheets).

EXISTING ROADWAYS/DRIVEWAYS

In addition to the intersection analysis, 24-hour average daily traffic (ADT) counts were obtained on Kinney Drive and Boulevard Way at the following four (4) roadway segments based on a previous traffic analysis:[6]

4 Omni-Means Engineers and Planners, Boulevard Way traffic flow at Kinney Drive-Sufism construction site, March, 2014.
5 California Manual on Uniform Traffic Control, Chapter 4, Highway Traffic Signals, Peak Hour Warrant #3, 2012.
[6] Baymetrics Traffic Resources, Average Daily Traffic (ADT) counts, Boulevard Way and Kinney Drive, March 25-29, 2009.

Roadway Segments:

Boulevard Way:	between Warren Road and Kinney Drive
Kinney Drive:	west of Boulevard Way
Boulevard Way:	between Garden Court and Iris Lane
Boulevard Way:	between Molly Way and Saranap Avenue

Based on new intersection count data (2013), the previously counted ADT volumes were adjusted by 6% to reflect any volume increases from currently measured 2013 conditions. Average Daily Traffic is defined as the total volume passing a point or segment of a roadway facility, in both directions, during a 24-hour period. It is commonly obtained during a given time period, in whole days greater than one day and less than one year. LOS capacities for different roadway types and classifications are presented in Table 3.

TABLE 3
LEVEL OF SERVICE (LOS) CRITERIA FOR ROADWAYS

	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
All Facilities (Volume-to-Capacity Ratio (V/C))	<0.6	0.6-0.7	0.7-0.8	0.8-0.9	0.9-1.0
	Two-way Average Daily Traffic (ADT) Threshold				
Roadway Segment Type	**LOS "A"**	**LOS "B"**	**LOS "C"**	**LOS "D"**	**LOS "E"**
6-Lane Freeway	60,000	80,000	100,000	120,000	140,000
4-Lane Freeway	35,000	50,000	65,000	80,000	95,000
4-lane Rural Highway	24,000	28,000	32,000	36,000	40,000
2-Lane Rural Highway	12,000	14,000	16,000	18,000	20,000
6-Lane Divided Arterial	32,000	38,000	43,000	49,000	54,000
4-Lane Divided Arterial	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial	18,000	21,000	24,000	27,000	30,000
2-Lane Undivided Arterial	9,000	10,500	12,000	13,500	15,000
4-Lane Collector	12,000	15,000	18,000	21,000	24,000
2-Lane Collector	6,000	7,500	9,000	10,500	12,000

Note: 1. Based on "Highway Capacity Manual", Transportation Research Board, 2000 peak hour capacities. Daily capacities in the study area are assumed as nine times the peak hour capacity.

2. All volumes are approximate and assume typical roadway characteristics. Actual threshold volumes for each Level of Service listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks and other heavy vehicles, travel lane widths, signal timing characteristics, on-street parking, volume of cross traffic and pedestrians, etc.

In addition to ADT volumes, existing on-site development driveways were counted to account for current site generated vehicle trips. These trips were deducted from overall proposed project trip generation to determine the project's net new vehicle trips.

Table 4 contains a summary of the existing roadway segment LOS conditions.

As indicated in Table 4, Boulevard Way and Kinney Drive are currently operating at LOS A for all studied roadway segments. With a "target" LOS of D or better, capacity thresholds for a two-lane undivided arterial street (Boulevard Way) and two-lane collector street (Kinney Drive) are well within allowable ADT.

TABLE 4
EXISTING CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Target LOS	ADT	LOS
Boulevard Way from Warren Road to Kinney Drive	Two-Lane Arterial	D	4,484	A
Kinney Drive west of Boulevard Way	Two-Lane Collector	D	1,908	A
Boulevard Way from Garden Court to Iris Lane	Two-Lane Arterial	D	4,706	A
Boulevard Way from Molly Way and Saranap Avenue	Two-Lane Arterial	D	4,865	A

Source: Baymetrics Traffic Resources, ADT counts on Boulevard Way and Kinney Drive, March 25-29, 2009. ADT volumes increased by 6% to account for new volume data surveyed in 2013.

FREEWAY SEGMENT OPERATIONS

The operation of freeway segments on Interstate 680 and State Route 24 has been evaluated for existing conditions. Using recent freeway analyses performed for approved projects in the City of Walnut Creek, the freeway segments most likely to be affected by proposed project traffic were evaluated for existing operations and level-of-service.[7] The directional freeway segments were identified where the affect of proposed project trips would likely be the greatest include the following three locations:

- Interstate 680 North of North Main Street (northbound/southbound);
- Interstate 680 South of State Route 24 (northbound/southbound);
- State Route 24 West of Interstate 680 (eastbound/westbound).

The segment of Interstate 680 north of North Main Street was selected for analysis because it is reasonable to assume that all proposed project-generated trips to/from the north on I-680 would be represented at this point. If the I-680 freeway segment between Olympic Boulevard and North Main Street was selected instead, proposed project trips using N. California Boulevard (via Bonanza Street or N. California Boulevard) to access I-680 would not be included in the freeway segment analysis.

Caltrans requires the analysis of all projects generating between one (1) and 49 trips that could be assigned to a State Highway facility and those facilities are experiencing congested or unstable flow (LOS E-F).8 Consistent with Caltrans guidelines for analysis of freeway segments, highway capacity software (HCS-McTrans 2010) has been utilized to evaluate the freeway segments. The software calculates the average density of a freeway segment based on directional volume, number lanes, speed (free-flow and peak commute), and other factors designating a corresponding level-of-service to each segment.

Existing freeway segment density and LOS have been shown in Table 5. All freeway segments in the study area are currently operating at LOS D or better during the AM and PM peak hour commute periods.

BICYCLE AND PEDESTRIAN FACILITIES

The Contra Costa Countywide Bicycle and Pedestrian Plan has identified existing and proposed bike facilities in the project study area. Bicycle facilities can be defined in three different classifications as defined by California Manual on Uniform Traffic Control Devices:[9]

7 AECOM, 1500 N. California Boulevard EIR, Chapter 4.13, Transportation and Traffic; Freeway Operations, December 2012.
8 Caltrans, Guide for the Preparation of Traffic Impact Studies, December 2002.
9 Contra Costa County, Contra Costa Countywide Bicycle and Pedestrian Plan, Local bicycle networks, Walnut Creek, 2009.

TABLE 5
FREEWAY OPERATIONS; EXISTING LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	**Direction**	**LOS**	**Density**	**LOS**	**Density**
I-680: North. of N. Main St.	NB	C	22.3	D	31.7
	SB	C	24.2	C	19.7
I-680: South of SR-24	NB	C	25.0	C	21.6
	SB	C	22.2	C	24.2
SR-24: West of I-680	EB	B	15.3	D	31.3
	WB	D	34.4	B	17.0

Source: AECOM, 1500 N. California Boulevard EIR—Chapter 4.13 Transportation and Traffic, December 2012. Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

Class I Bikeway: A dedicated off-road bicycle and/or pedestrian path (typically multi-use path). Provides for bicycle travel on a paved right-of-way completely separated from any street or highway. The minimum travel width for two-way travel is 8-feet and 5-feet for a one-way path. If adjacent to the highway or arterial with no physical barrier there should be a 5-foot buffer area;

Class II Bikeway: A dedicated bike lane on a street and/or highway (not a sidewalk). Bicycle lanes are typically 4-5 feet wide and provide for directional one-way travel on one or both sides of the roadway. Requires signing and pavement markings with a six-inch solid white stripe separating the bicycle lane from adjacent traffic flow;

Class III Bikeway: These are dedicated bike routes that provide for shared use with pedestrian or motor vehicle traffic and are identified by signing. Typically, bike routes are used to connect with other Class II or Class I bike facilities where ROW acquisition or physical linkage is not possible. Ideally, Class III bike routes should only be used on low volume streets (for safety purposes) with speed limits of 35 mph or less.

Along Boulevard Way between Olympic Boulevard and Mt. Diablo Boulevard there are no existing Class I or Class II bicycle facilities. Boulevard Way has been identified as a proposed Class III route between Kinney Drive and Mt. Diablo Boulevard in the County's bicycle plan. (This Class III route would also continue west along Kinney Drive and Condit Road connecting to Class I facilities along Pleasant Hill Road.) In addition, Old Tunnel Road and Saranap Avenue (along SR-24 frontage only) have been proposed as Class III bicycle facilities. South of the proposed project site, Olympic Boulevard is identified as a Class II facility east of Tice Valley Boulevard (there is a Class I bicycle facility along a portion of its length—see below). Both Tice Valley Boulevard and Olympic Boulevard (west of Tice Valley Boulevard) are identified as Class II bicycle facilities. California Boulevard in the City of Walnut Creek has Class II bike lanes north of Mt. Diablo Boulevard and Class III or "sharrow" bicycle markings south of Mt. Diablo Boulevard to Newell Avenue. Pleasant Hill Road has Class I and II bicycle/pedestrian facilities on both side of the street between Olympic Boulevard and Old Tunnel Road.

Existing bicycle and pedestrian facilities in the area are comprised of sidewalks, pedestrian crosswalks, and signalized intersections. Pedestrian sidewalks extend from the signalized intersection of Boulevard Way/Mt. Diablo Boulevard west to approximately Saranap Avenue. In this segment of Boulevard Way, pedestrian crosswalks (mid-block) are located at Boulevard Circle, Rule Court, and Saranap Avenue. Pedestrian sidewalks also exist on Rule Court, Flora Avenue, and Saranap Avenue but are discontinuous in certain segments. Between Saranap Avenue and Olympic Boulevard there are essentially no pedestrian or bicycle facilities on Boulevard Way. The exception is a short segment between Saranap Avenue to just

west of Iris Lane and adjacent to Olympic Boulevard. In this segment there are discontinuous pedestrian sidewalks. The remainder of the Boulevard Way segment west to Olympic Boulevard has unimproved roadway shoulders, residential driveways, and/or minimal off-street walking areas.

Olympic Boulevard has a Class I pedestrian/bike path that extends east from Boulevard Way to Newell Avenue on the north side of the street. This same Class I pedestrian/bike path continues on the southwest side of Olympic Boulevard west from Tice Valley Boulevard to Newell Court.

Pedestrian/bicycle counts were conducted at all project study intersections along Boulevard Way between Olympic Boulevard and Mt. Diablo Boulevard. Overall, pedestrian crossing volumes along the corridor would be considered "light" with no study intersection experiencing more than 30 pedestrians during peak hour crossing period. The Saranap Avenue/Boulevard Way intersection experiences the highest flow of pedestrians. Pedestrian volumes are primarily related to County Connection bus stops along Boulevard Way (see below) and higher use retail establishments along the corridor. This includes a southbound pedestrian flow from Saranap Avenue across Boulevard Way to the CC bus stop during the AM commute period. This pedestrian flow is mainly comprised of children and young adults (or parents) taking the bus to school. Other examples of higher pedestrian activity include specific retail establishments adjacent to Flora Avenue. These include the existing 7-11 Store on the southwest quadrant of the Boulevard Way/Flora Avenue intersection and the Morucci's Se Mange Bene Delicatessen south of Flora Avenue. Pedestrian traffic around these two retail establishments tended to be made up of people jay-walking north-south across Boulevard Way to/from commercial businesses on the north side of the roadway.

TRANSIT FACILITIES

Bus transit service along Boulevard Way is provided by the Contra Costa County Transit Authority (County Connection). Buses operate weekdays and weekends with limited Holiday service. Two County Connection route serves the immediate project study area:[10]

CC Route #1: Rossmoor/Shadelands; this route extends between the Rossmoor Shopping Center and Shadelands Business Park and provides access to the Walnut Creek BART Station. In the project study area, bus stops are located on Boulevard Way just north of Olympic Boulevard, south and east of Kinney Drive, just east of Saranap Avenue, at Rule Court, and at Boulevard Circle. CC Route #1 operates between 5:55 a.m. and 7:30 p.m. on weekdays with headways every 60 minutes.

CC Route #25: Walnut Creek BART/Lafayette BART; this route extends between the Walnut Creek BART station and the Lafayette BART station. In the project study area, bus stops are located along Olympic Boulevard at Newell Avenue, Tice Valley Boulevard/Boulevard Way, and Bridgefield. CC Route #25 operates between 7:30 a.m. and 6:53 p.m. on weekdays and headways every 60 minutes.

In the project study area, bus stops are located on Boulevard Way in both the eastbound and westbound directions just east of Saranap Boulevard.

NEAR-TERM (NO PROJECT) TRAFFIC CONDITIONS

Near-term (no project) traffic conditions represent existing plus approved/pending project traffic that would be generated in the near-term (2-3 years) to the year 2016. Approved/pending developments are defined as projects that have either been approved by Contra Costa County or the Cities of Walnut Creek and Lafayette and are not yet constructed or have a reasonable chance of being approved and constructed prior to the proposed project. For this reason, near-term (no project) conditions represent a conservative estimate of approved and/or pending project traffic in the study area.

[10] *Contra Costa County Connection Agency (County Connection), Maps and Schedules, Effective December 23, 2012, 2014.*

APPROVED/PENDING PROJECTS

Based on discussions with Engineering and Planning staffs from Contra Costa County, a review current project on the City of Walnut Creek website, and actual traffic studies performed for recently approved projects, the following approved/pending projects have the potential to affect traffic flows in the project study area:

Lafayette:	
Terraces of Lafayette	315 Apartments
Walnut Creek:	
The Landing at Walnut Creek	141 Apartments;
1500 N. California Blvd. Mixed-Use	141 Apartments, 19,000 ksf retail
The Arroyo Apartments	100 Apartments
Brio Apartments	300 Apartments
Third Avenue Apartments	48 Apartments
The Village Mixed-Use	49 Condominium units, 38 ksf retail
Habitat for Humanity Townhomes	10 Townhome units
Broadway Plaza Long Range MP	200 dwelling units, 300 ksf retail
Locust St./Mt. Diablo Blvd S-P	202 ksf retail/office, 46 Apartments
Walnut Creek BART Transit Village	596 Apartments, 21.95 ksf retail
Contra Costa County:	
Sufism Reoriented Sanctuary	66 ksf sanctuary building/facilities

In all cases of approved/pending projects, peak hour traffic volumes were derived from the DEIR and/or draft transportation analysis. Therefore, volume projections are conservative in nature in that they assume maximum trip generation from the project description at that time. It is understood that some approved projects may have undergone changes in overall project description that would reduce their overall trip generation.

NEAR-TERM (NO PROJECT) TRAFFIC VOLUMES

Specific AM and PM peak hour approved/pending project volumes originating from the City of Walnut Creek have been taken directly from two of the more recent transportation studies conducted for the City; the 1500 North California Boulevard Project EIR and the Broadway Plaza Long Range Master Plan.[11 12] Recent transportation analyses for the proposed Terraces of Lafayette Apartment were also used for volume projections.[13] For the approved Sufism Reoriented Sanctuary, peak hour vehicle trip generation was taken directly from the transportation analysis performed for that project.[14] Based on approved sanctuary uses, this project would generate 25 AM peak hour trips and 25 PM peak hour trips. The majority of this project's trips occur outside of the peak commute periods. Other approved development trips were distributed onto the adjacent street network based on existing traffic volumes on Camino Diablo, Mt. Diablo Boulevard, and Boulevard Way. In addition to specific approved/pending project traffic, existing through-traffic volumes on Boulevard Way were *increased* by an additional 6% (2% per year) based on historical volume data to account for any background growth from the Saranap and Tice Valley areas. Based on near-term (no project) volume projections at the Boulevard Way/Mt. Diablo intersection from recently approved City of Walnut Creek projects, the majority of approved development trips are to/from SR-24 via Mt. Diablo Boulevard. A small portion of these trips (less than 5%) are

11 AECOM, 1500 North California Boulevard Project EIR-Transportation Impact Study, City of Walnut Creek, October 2, 2012.
12 Kittelson & Associates, Inc./Dowling, Transportation Impact Analysis for: Broadway Plaza Long Range Master Plan, City of Walnut Creek/ESA, March 14, 2012.
13 TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012.
14 Omni-Means Engineers & Planners, Sufism Reoriented Sanctuary Project Traffic Impact Analysis, Contra Costa County, January 2011.

to/from Boulevard Way. Therefore, near-term (no project) volume increases on Boulevard Way are primarily related to development of the Sufism project and the additional 6% increase in through-traffic volumes for background growth and/or other projects.

AM and PM peak hour approved project trips have been added to existing intersection volumes based on trip assignments found in previous transportation studies conducted for those projects. Where necessary, approved vehicle trips were extrapolated through adjacent project study intersections not included in the prior transportation studies. AM and PM peak hour near-term (no project) traffic volumes have been shown in Figure 5.

NEAR-TERM INTERSECTION/ROADWAY IMPROVEMENTS

Based on discussions with Contra Costa County and City of Walnut Creek Engineering staff, near-term (no project) circulation improvements planned for Boulevard Way are primarily related to development of the Sufism Reoriented project located just west of the proposed project site. Based on the conditions of approval outlined in the DEIR for the New Sanctuary for Sufism Reoriented, the following circulation improvements would be constructed as part of overall project development:[15]

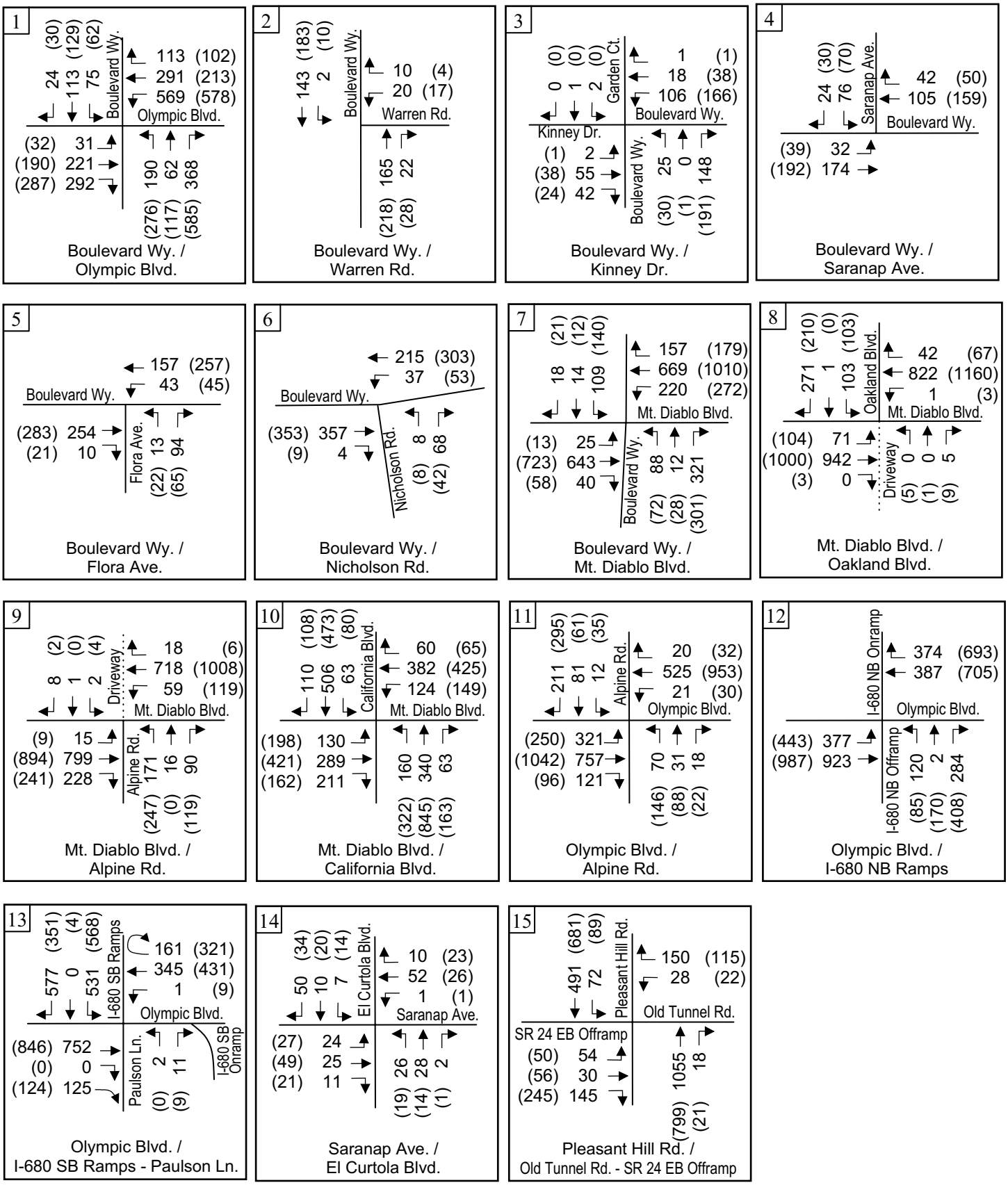
- Expanding the north/east bound lane of Boulevard Way to 17 feet of total width, including a 12 foot travel lane and a 5 foot shoulder
- Maintaining existing traffic controls at the intersection of Boulevard Way/Garden Court/Kinney Drive:
  Boulevard Way: no controls
  Garden Court: stop sign at Boulevard Way intersection
  Kinney Drive: stop sign for traffic moving eastbound at the Boulevard Way intersection.
- Construction of pedestrian improvements, including:
  A 5-foot-wide sidewalk from the main driveway to Warren Road.
  Two crosswalks:
  Across Garden Court, at its intersection with Boulevard Way and Kinney Drive;
  Across Boulevard Way, in a to-be-determined location between Garden Court and Molly Way.
- Addition of a bus pull-out area east of the main driveway
- Redesign of the Boulevard Way frontage to allow for adequate sight distance for vehicles exiting from the main driveway, assuming oncoming traffic is moving at a speed of 35 miles per mph). To achieve a 35 mph sight distance, the proposed perimeter wall and landscaping need to be relocated about 30 feet further away from the Boulevard Way right-of-way.

NEAR-TERM (NO PROJECT) INTERSECTION OPERATION

With approved/pending traffic added to existing peak hour traffic volumes, near-term (no project) intersection LOS have been calculated and are shown in Table 6. As calculated, 14 of the 15 project study intersections would continue to operate at acceptable levels (LOS D or better). However, with near-term (no project) volumes, the intersection of Olympic Boulevard/I-680 Northbound ramps would change from LOS D to E during the PM peak hour. In addition, there would be slight increases in vehicle delays and/or intersection v/c ratios from near-term (no project) traffic volumes.

Unsignalized study intersections have been evaluated for peak hour signal warrant satisfaction with near-term intersection volumes. Based on MUTCD warrant #3 for peak hour traffic, none of the six unsignalized intersections would qualify for signalization with near-term traffic volumes.

15 CirclePoint, New Sanctuary for Sufism Reoriented, Final EIR, 4.13, Traffic and Circulation, Contra Costa County, 2012.



Near-Term Without Project
A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 5

TABLE 6
EXISTING AND NEAR-TERM (NO PROJECT) CONDITIONS: INTERSECTION LEVELS-OF-SERVICE
AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			Existing	N-T (NP)	Existing	N-T (NP)
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.43	A 0.44	A 0.46	A 0.50
2	Boulevard Way/Warren Road	TWSC	B 10.2	B 10.4	B 11.2	B 11.5
3	Boulevard Way/Kinney Drive	TWSC	B 10.5	B 10.8	B 11.2	B 11.5
4	Boulevard Way/Saranap Avenue	TWSC	B 11.4	B 11.6	B 12.0	B 12.4
5	Boulevard Way/Flora Avenue	TWSC	B 10.1	B 10.2	B 10.8	B 11.1
6	Boulevard Way/Nicholson Road	TWSC	B 13.1	B 13.6	B 14.5	B 14.9
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.45	A 0.47	A 0.52	A 0.54
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.40	A 0.41	A 0.47	A 0.49
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.49	A 0.49	A 0.60	B 0.61
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.40	A 0.42	A 0.54	A 0.57
11	Olympic Blvd./Alpine Rd.	Signal	A 0.39	A 0.40	A 0.51	A 0.53
12	Olympic Blvd./I-680 NB Ramps	Signal	A 0.58	A 0.60	D 0.86	**E 0.91**
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	B 0.62	B 0.62	A 0.51	A 0.52
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.5	A 7.5	A 7.5	A 7.5
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 16.6	B 16.6	B 18.6	B 18.6

Signalized/unsignalized intersection LOS for County/City of Lafayette based on HCM 2000 methodology (Synchro-Simtraffic software) and yields a vehicle delay in seconds. City of Walnut Creek signalized intersection LOS based on CCTA methodology and yields a volume/capacity ratio.

NEAR-TERM (NO PROJECT) ROADWAY OPERATION

Near-term (no project) roadway operation and LOS has been shown in Table 7. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at LOS A with near-term traffic volumes.

TABLE 7
NEAR-TERM CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Existing		Near-Term (NP)	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-Ln. Arterial	4,484	A	4,700	A
Kinney Dr. west of Boulevard Way	2-Ln. Collector	1,908	A	1,958	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	4,706	A	4,950	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	4,865	A	5,180	A

NEAR-TERM (NO PROJECT) FREEWAY SEGMENT OPERATION

Near-term (no project) freeway segment operation and LOS has been shown in Table 8. The majority of freeway segments would experience slight increases in overall density from traffic increases related to near-term (no project) volumes. However, the westbound segment of SR-24 would experience LOS E conditions during the AM peak hour commute period. All freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with near-term (no project) volumes.

TABLE 8
FREEWAY OPERATIONS; EXISTING AND NEAR-TERM (NO PROJECT) LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	**Direction**	**Exist LOS/Density**	**N-T (NP) LOS/Density**	**Exist LOS/Density**	**N-T(NP) LOS/Density**
I-680: North. of N. Main St.	NB	C 22.3	C 22.5	D 31.7	D 32.3
	SB	C 24.2	C 24.6	C 19.7	C 20.2
I-680: South of SR-24	NB	C 25.0	C 25.0	C 21.6	C 21.8
	SB	C 22.2	C 22.4	C 24.2	C 24.4
SR-24: West of I-680	EB	B 15.3	B 15.5	D 31.3	D 31.4
	WB	D 34.4	**E 36.4**	B 17.0	B 17.2

Source: AECOM, 1500 N. California Boulevard EIR—Chapter 4.13 Transportation and Traffic, December 2012. Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

SIGNIFICANCE CRITERIA

Contra Costa County sets forth service standards for transportation facilities that can be described as follows: The Central County Action Plan establishes LOS standards for roadways within the County consistent with the requirements of Measure C and J, along with policies to ensure that these standards are maintained. Roadways are grouped into two categories: "Routes of Regional Significance" (RORS) and "Basic Routes or Non-Regional Routes." Discretionary projects that impact Routes of Regional Significance shall comply with the requirements of the adopted Action Plans. This is consistent with the Contra Costa Transportation Authority (CCTA) significance criteria for proposed projects within the County that have the potential to impact MTS routes. This criterion is defined in the *Central County Action Plan*. CCTA defines "Routes of Regional Significance" in the project study as State Route 24, Interstate 680, and Pleasant Hill Road. Boulevard Way, Olympic Boulevard, Tice Valley Boulevard, and Mt. Diablo Boulevard are considered basic or non-regional routes. With project study intersections located along non-regional routes, the following CEQA criteria and intersection LOS criterion (consistent with CCTA guidelines) would be as follows:

Significance criteria are based on CEQA and County guidelines and apply mainly to intersection operation, current County/City plans/policies, vehicle access, and pedestrian/bicycles circulation. Under CEQA, a significant impact occurs if project traffic would result in any of the following:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change of traffic patterns, including either an increase in traffic levels of a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- Result in inadequate emergency vehicle access;
- Project site or internal circulation on the site is not adequate to accommodate pedestrians and bicycles;

Caltrans Significance Thresholds for Freeway Segments

The proposed project would have a significant impact on I-680 and SR-24 freeway segment facilities if the following occurs:[16]

- Fails to maintain operation at or above LOS D, or in conditions where the freeway is already projected to operate deficiently at LOS E-F without proposed project traffic fails to maintain the existing measure of effectiveness (MOE).

CCTA Significance Thresholds for Intersections on Non-Regional Routes

In addition to the CEQA thresholds, CCTA sets forth additional criteria. The project study intersections are located along Boulevard Way (intersection #'s 1-6), which is considered a non-regional route. CCTA sets forth the following LOS thresholds for non-regional routes for suburban intersections:[17]

- A significant impact occurs if a signalized intersection LOS degrades from an acceptable level (LOS D or better, v/c ratio no greater than 0.85) to an unacceptable level (LOS D, v/c ratio greater than 0.85);
- Increase a pre-existing unacceptable LOS operation by 0.05 or greater; or
- The development's internal circulation does not meet County standards.

No LOS thresholds have been established by Contra Costa County (CCTA) or the City of Walnut Creek for unsignalized intersections. Based on previous transportation analyses and correspondence with County staff, the following LOS threshold has been applied to all unsignalized intersections for determining proposed project impacts:[18]

- A significant impact occurs if an unsignalized intersection LOS degrades from an acceptable level-of-service (LOS D or better) to an unacceptable level (LOS E-F).

City of Walnut Creek Significance Thresholds for Intersections Within/Outside Downtown Core Area

The City of Walnut Creek has established LOS thresholds for signalized intersections located within the City's "Core Area" bounded by I-680, Iron Horse Regional Trail, and Walden Road. For the purpose of this study, the proposed project would have a significant impact on all study intersections located east of I-680 (intersection #'s 8-12) if the following thresholds were exceeded:[19]

- Result in a deterioration in intersection operation to high LOS E or worse (v/c ratio of 0.95 or greater) for the study intersections located east of I-680 and not on Ygnacio Valley Road. Intersections already operating at a v/c ratio greater than 0.95 under near-term (no project) conditions would result in a significant impact if the v/c ratio increases by 0.05 or greater;

For those study intersections located outside the Core Area west of I-680 (intersection #'s 7&13) the following would apply:

- Result in a deterioration in intersection operation to high LOS D or worse (v/c ratio of 0.85 or greater) for the study intersections located west of I-680. Intersections already operating at a v/c

16 Caltrans, Guide for the Preparation of Traffic Impact Studies, December 2002.
17 Contra Costa Transportation Authority (CCTA), Technical Procedures Update---Final, July 19, 2006
18 Mr. Marc de la O, Transportation Engineering, Contra Costa County, Personal communication, Unsignalized intersection significance criteria, February 26, 2013.
19 City of Walnut Creek, General Plan 2025, Transportation, Chapter 5, April 4, 2006

ratio greater than 0.85 under near-term (no project) conditions would result in a significant impact if the v/c ratio increases by 0.05 or greater;

City of Lafayette Thresholds for Intersections Outside the Downtown Area

The City of Lafayette applies the following significance thresholds to intersections located outside of their downtown area with regard to proposed project impacts:[20]

- Cause operations at a signalized intersection "outside downtown" (intersection #15) to deteriorate from LOS A, B, C, or "good" D to "poor" LOS D or to LOS E or F. "Good" LOS D is defined as 35-45 seconds of average control delay per vehicle (based on *HCM 2000 Operations* methodology). "Poor" LOS D is defined as 45-55 seconds of average delay;

- Cause the overall level of service at an unsignalized multi-way-stop-control intersections (intersection #14) to degrade from LOS D or better to LOS E or F.

Project Specific Criteria

Specific evaluation criteria have been directed towards the analysis of this project by Contra Costa County staff. Typically, traffic impact analyses are prepared for any project that generates 100 or more PM peak hour trips (50 or more peak hour trips in Lamorinda). An initial review/estimate of the proposed project's vehicle trip generation indicates that it would meet these minimum CCTA criteria for a comprehensive transportation analysis. A total of 15 study intersections (and proposed project driveways) are being evaluated as well as four roadway segments. The proposed project's impacts will be measured against County and Cities of Walnut Creek and Lafayette significance thresholds (listed previously). In addition, a comprehensive analysis including near-term plus project and year 2030 cumulative plus project scenarios has been conducted based on CCTA and County guidelines.

PROPOSED PROJECT IMPACTS

PROJECT DESCRIPTION[21]

The proposed Saranap Village project would be located in unincorporated Contra Costa County along Boulevard Way both east and west of Saranap Avenue (see Figure 7-- Project Site Plan) Specifically, the proposed project would consist of three development sites (A, B-1, and C) made up of mixed-uses that would include residential, commercial- retail, and restaurant components (see below—Project Land Use Components). Project development site A would be located on the northeast quadrant of the Saranap Av**e**nue/Boulevard Way intersection with one driveway access from each street. Project development site B-1 would be located on the south side of Boulevard Way with one access driveway on Boulevard Way directly opposite the Site A driveway. Finally, development site C would be located along the south side of Boulevard Way west of Saranap Avenue (just west of development site B-1) and have one access driveway. With proposed project development, major streetscape and traffic calming components are planned for both the Boulevard Way and Saranap Avenue corridor/frontages. These would include a reduction in vehicle travel lanes, roundabout(s), and diagonal street parking. The project would provide a minimum of 664 on-site (garage) parking spaces and there would be 57 on-street parking spaces along the project frontages to serve related commercial, retail, and residential uses. A brief description of the proposed project's land use components and circulation improvements follows:

20 City of Lafayette, General Plan, Circulation, Chapter II, 2002.
21 This section addresses the preliminary design that was being considered in January 2014. The project proposed in February 2014 is addressed in an addendum. Please see page 3 in this draft.

Project Land Use Components

The proposed project's land uses would consist of a mix of retail, residential, restaurant, and coffee shop components specific to each development site. Based on the most recent project description and building program supplied by the project applicant, the proposed Saranap Village project would consist of the following uses:[22]

Development Site A:

Grocery (Supermarket):	14,789 square feet
Fitness Club:	13,888 square feet
Residential:	143 apartments

Development Site B-1:

Retail:	3,153 square feet
Restaurant:	5,383 square feet
Coffee Shop:	2,000 square feet
Bar/Nightclub:	2,222 square feet
Residential:	68 apartments

Development Site C:

Residential:	24 apartments

As shown above, the proposed project would be made up of 27,547 square feet of retail uses, 13,888 square feet of fitness club use, and 235 residential dwelling units.

Project Circulation/Parking Components

With proposed project development, the Boulevard Way corridor and frontages would be improved to reflect a more "village" concept in terms of streetscape, parking, and vehicle control along the corridor. The Saranap Avenue project frontage would also be improved to reflect parallel parking and pedestrian improvements between Boulevard Way and the proposed project driveway to the north. In an effort to calm traffic volumes along the Boulevard Way and Saranap Avenue project frontages, a roundabout would be installed at the Saranap Avenue/Boulevard Way intersection. This roundabout would serve to reduce vehicle speeds along Boulevard Way (east, west, and at the intersection), improve vehicle delays at the intersection, and improve pedestrian and vehicle safety. Traveling eastbound from Saranap Avenue, the Boulevard Way corridor would be reduced from four travel lanes to two travel lanes. This lane configuration would extend between Saranap Avenue and Flora Avenue. With a reduction in vehicle travel lanes on this segment of Boulevard Way, diagonal parking would be installed along specific project frontages (where applicable). Diagonal parking is also proposed to be extended east on Boulevard Way *beyond* the project frontages to Flora Avenue. The Saranap Avenue project frontage would also be improved to allow for re-configured parallel parking (east side only) between Boulevard Way and the project driveway. Off-street parking garages would serve all three development sites to provide parking (as per County standards) for both residential and retail-restaurant uses. On the east side the improved project streetscape, a landscaped traffic circle would be installed just west of Flora Avenue.

PROJECT TRIP GENERATION

Vehicle trip generation for the proposed project has focused on daily vehicle trips and "peak hour" vehicle trips. Daily trips are the total vehicle trips generated by the project over a 24-hour period. The peak hour trips are typically generated during the highest hour of the morning (7:00-9:00 a.m.) and

22 Hall Equities Group (LCA Architects, Inc), Saranap Mixed-Use, Conceptual Plans---sites A, B, and C, February 19, 2013.

evening (4:00-6:00 p.m.) commute periods when weekday traffic is significant. The peak hour rates reflect the amount of traffic that would be generated by the proposed project during the "peak hour of adjacent street traffic." It is possible the proposed project could generate a higher amount of trips during some other period during the day. However, the combination of peak hour project trips combined with the peak hour of adjacent street traffic commonly yields a "worst case" scenario for measuring project impacts and vehicle congestion. Typically, the PM peak hour period yields the greatest combination of project trip generation and vehicle congestion.

Daily and peak hour trip generation for the proposed project has been based on accepted rates found in the Institute of Transportation Engineers (ITE) trip research manual for retail (shopping center), residential (apartment), restaurant (high-turnover sit-down), supermarket, health club, and drinking place uses.[23] For the proposed coffee shop use, actual count survey data conducted at other Bay Area Starbuck's were used to calculate peak hour trip generation.[24] Bay Area Starbuck's trip surveys result in more conservative trip generation than comparable ITE research on Coffee/Donut Shops.

With any mixed-use (multi-use) project consisting of residential and retail uses, ITE identifies both "internal" trip and "pass-by" trip factors. Internal trips represent trips between interrelated land uses that can be made without using the off-site road system. For example, a residential vehicle trip to a coffee shop, restaurant, or market. Rather than traveling off-site, residents living on-site could walk to these establishments and thus reduce the project's overall trip generation. Pass-by trips are unique to proposed retail development and represent vehicle trips already on the adjacent roadway system (Boulevard Way-Saranap Avenue). These pass-by trips are intermediate stops on the way from an origin to a primary trip destination without a route diversion. For example, a person traveling to work on Boulevard Way and stopping (temporarily) to pick up a coffee before continuing on to their destination. This vehicle trip would already be on the roadway network but would now stop at a proposed retail project use before continuing on their trip. ITE studies identify various daily internal capture rates for various mixed-use projects ranging from 28-41% depending on the mix of related land uses.[25] For the purpose of this study, a very conservative 15% internal capture rate has been applied to all proposed residential trips to account for inter-related land uses. ITE also identifies pass-by reduction factors for proposed retail and restaurant uses. A conservative 25% pass-by rate has been applied to all proposed retail uses (PM peak hour only). ITE identifies a 43% pass-by rate for high-turnover sit-down restaurant use and 36% for supermarket use (PM peak hour only). Finally, a 70% pass-by rate has been applied to proposed coffee shop uses based on actual survey data conducted at other Starbuck's establishments (AM peak hour only).[26]

With regard to assumed internal and pass-by trip reduction factors used in this transportation study, the analysis is consistent with recommended pass-by research and uses based on the CCTA Technical Procedures Manual and ITE research. However, the CCTA guidelines recommended an internal trip reduction factor between 3-6%. Discussions with CCTA Transportation staff indicate that higher internal trip reduction factors can be used if documented and reasonably justified.[27] The ITE *Trip Generation Handbook* discusses the likely internal capture rates for multi-use projects based on surveys conducted at other multi-use projects. Specifically, surveys were conducted for internal capture rates to/from residential and retail uses within the same developments. These surveys indicate that average internal capture rates to/from residential to retail was 42% (53% + 31%). The rate used in this study is 15%,

---

23 Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, shopping center (#820), apartment (#210), high-turnover sit-down restaurant (#932), supermarket (#850), health club (#492), drinking place (#911), 2012.
24 Omni-Means Engineers & Planners, Focused Traffic/Parking Analysis for a Proposed Retail/Starbucks Development on Village Parkway in the City of Dublin, April 19, 2005
25 Institute of Transportation Engineers (ITE), Trip Generation Handbook, 9th Edition, Appendix C, Table C.2 Daily Internal Capture Rates at FDOT Sites, 2012.
26 Omni-Means Engineers & Planners, Focused Traffic/Parking Analysis for a Proposed Retail/Starbucks Development on Village Parkway in the City of Dublin, April 19, 2005
27 Mr. Matt Kelly, Associate Transportation Planner, Contra Costa Transportation Authority, Internal trip reduction factors, Personal communication, August 20, 2014.

which is justified by the types of complementary uses the project proposes, and the relatively long distance residents would otherwise need to travel to experience similar retail opportunities. Residents in the project would use the proposed supermarket, restaurant, bank, and, coffee shop uses without generating a vehicle trip end, rather than driving to neighboring downtown Walnut Creek or Tice Valley areas to access retail uses. The ITE average of 42% is likely high for this project given its relative small size in comparison to the types of projects surveyed by ITE. Therefore, a conservative 15% was used for internal capture between complimentary project uses.

Daily and AM/PM peak hour trip generation rates are shown in Tables 9A and 9B, respectively. Daily and AM/PM peak hour proposed project trip generation has been shown in Tables 10A and 10B, respectively. The proposed project is expected to generate 4,908 net new daily trips with 290 net new AM peak hour trips and 396 net new PM peak hour trips.

TABLE 9A
PROPOSED PROJECT DAILY TRIP GENERATION RATES

Land Use Category	Unit[1]	Daily Trip Rate/KSF
Apartment	DU	6.65
Shopping Center (Retail)	KSF	227.72
Restaurant (High-Turnover Sit-Down)	KSF	127.15
Grocery (Supermarket)	KSF	102.24
Fitness Club	KSF	32.93
Bank (Walk-In)	KSF	73.87
Coffee Shop (no drive-through)	KSF	761.27
Bar	KSF	51.04

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, (2012) and proprietary trip generation research on Starbuck's Coffee Shop (2005).

TABLE 9B
PROPOSED PROJECT AM AND PM PEAK HOUR TRIP GENERATION RATES

Land Use Category	Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
		Total	In %	Out %	Total	In %	Out %
Apartment	DU	0.51	20%	80%	0.62	65%	35%
Shopping Center (Retail)	KSF	6.02	62%	38%	18.71	48%	52%
Restaurant (High-Turnover Sit-Down)	KSF	10.81	55%	45%	9.85	60%	40%
Grocery (Supermarket)	KSF	3.40	62%	38%	9.48	51%	49%
Fitness Club	KSF	1.41	50%	50%	3.53	57%	43%
Bank (Walk-In)	KSF	6.06	53%	47%	12.13	44%	56%
Coffee Shop (no drive-through)	KSF	101	51%	48%	40.75	50%	50%
Bar	KSF	n.a.	n.a.	n.a.	11.34	66%	34%

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, (2012) and proprietary trip generation research on Starbuck's Coffee Shop (2005).

TABLE 10A
PROPOSED PROJECT TRIP GENERATION: DAILY TRIPS

Project Use	Quantity KSF/DU	Daily Trips
Apartment (Gross)	235du	1,563
Net New Residential Trips		**1,563**
Shopping Center (Gross)	3.153ksf	718
Internal Trip Reduction 15%		-108
		610
Pass-By Reduction 12.5% (50% of Peak Hour PM Pass-By Rate)		-76
Shopping Center (Net)		**534**
Restaurant (Gross)	5.383ksf	684
Internal Trip Reduction 15%		-103
		581
Pass-By Reduction 21.5% (50% of Peak Hour PM Pass-By Rate)		-125
Restaurant (Net)		**456**
Grocery (Gross)	14.789ksf	1,512
Internal Trip Reduction 15%		-227
		1,285
Pass-By Reduction 18% (50% of Peak Hour PM Pass-By Rate)		-231
Grocery (Net)		**1,054**
Fitness Club (Gross)	13.888ksf	457
Internal Trip Reduction 15%		-69
Fitness Club (Net)		**388**
Bank (Gross)	0.791ksf	58
Internal Trip Reduction 15%		-9
Bank (Net)		**49**
Coffee Shop (Gross)	2.000ksf	1,523
Internal Trip Reduction 15%		-228
		1,295
Pass-By Reduction 17.5%		-227
Coffee Shop (Net)		**1,068**
Bar (Gross)	2.222ksf	113
Internal Trip Reduction 15%		-17
Bar (Net)		**96**
Net New Commercial Trips (less Internal/P-By)		**3,645**
Net New Residential & Commercial Trips		**5,208**
Less Existing Site Driveway Trips		300
TOTAL NET NEW PROJECT TRIPS		**4,908**

KSF = 1,000 square feet, DU = Dwelling Unit, n.a. = not applicable
Daily Pass-By rate represents 50% of the stated peak hour rate, with the exception of Coffee Shop use. For Coffee Shop use, a conservative Daily Pass-By rate of 17.5% is applied, in recognition that most pass-by trips for the Coffee Shop are expected to be concentrated during the AM peak period, as people head to their daily destinations.

TABLE 10B
PROPOSED PROJECT TRIP GENERATION: AM AND PM PEAK HOUR

Project Use	Quantity KSF/DU	AM Peak Hour Trips			PM Peak Hour Trips		
		Total	In	Out	Total	In	Out
Apartment (Gross)	235du	120	24	96	146	95	51
Net New Residential Trips		**120**	**24**	**96**	**146**	**95**	**51**
Shopping Center (Gross)	3.153ksf	19	12	7	59	32	27
Internal Trip Reduction 15%		-3	-2	-1	-9	-5	-4
		16	10	6	50	27	23
Pass-By Reduction 25%--PM Only		n.a.	n.a.	n.a.	-13	-7	-6
Shopping Center (Net)		**16**	**10**	**6**	**37**	**20**	**17**
Restaurant (Gross)	5.383ksf	58	32	26	53	32	21
Internal Trip Reduction 15%		-9	-5	-4	-8	-5	-3
		49	27	22	45	27	18
Pass-By Reduction 43%--PM Only		n.a.	n.a.	n.a.	-19	-11	-8
Restaurant (Net)		**49**	**27**	**22**	**26**	**16**	**10**
Grocery (Gross)	14.789ksf	50	31	19	140	71	69
Internal Trip Reduction 15%		-8	-5	-3	-21	-11	-10
		42	26	16	119	60	59
Pass-By Reduction 36%--PM Only		n.a.	n.a	n.a.	-43	-22	-21
Grocery (Net)		**42**	**26**	**16**	**76**	**38**	**38**
Fitness Club (Gross)	13.888ksf	20	10	10	49	28	21
Internal Trip Reduction 15%		-3	-2	-1	-7	-4	-3
Fitness Club (Net)		**17**	**8**	**9**	**42**	**24**	**18**
Bank (Gross)	0.791ksf	5	3	2	10	4	6
Internal Trip Reduction 15%		-1	-1	0	-2	-1	-1
Bank (Net)		**4**	**2**	**2**	**8**	**3**	**5**
Bar (Gross)	2.222ksf	n.a.	n.a.	n.a.	25	17	8
Internal Trip Reduction 15%					-4	-3	-1
Bar (Net)					**21**	**14**	**7**
Net New Commercial Trips (less Internal/P-By)		**180**	**100**	**80**	**280**	**150**	**130**
Net New Residential & Commercial Trips		**300**	**124**	**176**	**426**	**245**	**181**
Less Existing Site Driveway Trips		10	2	8	30	15	15
TOTAL NET NEW PROJECT TRIPS		**290**	**122**	**168**	**396**	**230**	**166**

Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, Apartment (#210), Shopping Center (#820), Restaurant (#932), Supermarket (#850), Fitness Club (#492), Bank (#911), and Drinking Place (#925), 9th Edition, 2012. Fitted curve equations used for shopping center uses. Coffee Shop trip rates based on surveys conducted for three Bay Area Starbucks, April 4-7, 2005.

KSF = 1,000 square feet, DU = Dwelling Unit, n.a. = not applicable

Pass-by rate of 25% (Shopping Center), 43% (Restaurant), and 36% (Supermarket), based on ITE, Trip Generation Manual, 9th Edition User's Guide and Handbook, October 2012. Coffee Shop pass-by rate (70%) based on Starbucks surveys, 2005.

Internal Trip Reduction rate of 15% based on ITE, Trip Generation Handbook, Multi-Use Development Tables 7.1 and 7.2., October 2012.

PROJECT TRIP ASSIGNMENT

Weekday AM and PM peak hour project trips were assigned onto the street network based on existing traffic flow patterns on Boulevard Way and previous transportation studies conducted for adjacent projects along Boulevard Way and in the City of Walnut Creek.[28] Consideration was also given to freeway access, project driveway location, and adjacent residential areas. Since the proposed project would have a predominantly residential emphasis and other commercial uses are not anticipated to be "destination oriented," the same trip distribution was used for both residential and retail uses. Based on these factors, proposed project trip assignment would be as follows:

Estimated Project Trip Assignment:

Boulevard Way to/from the west:	**30%**
Kinney Drive to/from the west:	6%
Olympic Blvd. to/from the east:	11%
Olympic Blvd. to/from the west:	4%
Tice Valley Blvd. to/from the south:	9%
Boulevard Way to/from the east:	**60%**
Flora Ave. to/from the south:	5%
Mt. Diablo Blvd. to/from the east:	36%
SR-24 to/from the west:	17%
Camino Pablo to/from the north:	2%
Saranap Avenue to/from the north:	**10%**
Total Trip Assignment:	**100%**

In relation to project trip assignment, net additional trips generated by the project were manually added to existing, near-term, and 2030 cumulative without project conditions to provide a conservative analysis. Net additional project trips were determined by subtracting existing site driveway counts from overall project trip generation. Given the relatively small size of this project, the CCTA transportation model was not "re-run" to include proposed project uses. Currently, the Contra Costa County General Plan designates the proposed project site as Retail Business (R-B), Neighborhood Business (N-B), General Commercial (G), and Multiple Family Residential (M-29). The proposed project would have the combined application of a General Plan Amendment to a Mixed-Use Planned Development (M); a rezone to Planned Development District (P-1), and a Final Development Plan per the P-1 Zone requirements. The Project's commercial (retail-restaurant) uses would be generally consistent with existing zoning, and the fact that multi-family housing is allowed would not change. However, it is likely that model volume projections do not include the additional amount of residential units the Project proposes. The additional project trips were added to the no project projections even though those no project projections already include uses similar to those proposed by the Project. Therefore, manually adding proposed project trips is conservative in nature.

Transportation studies performed for both residential and retail-commercial projects in the Cities of Walnut Creek, Lafayette and Dublin have used a similar approach in manually over-laying proposed project trips to existing, near-term, and cumulative projections (rather than re-running the transportation model with assumed project uses). These include the following:

- *TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012 (315 residential units);*

- *Fehr & Peers, Traffic Impact Study for the Landing Project, City of Walnut Creek, December, 2013 (178 residential units);*

28AECOM, 1500 North California Boulevard Project EIR-Transportation Impact Study, City of Walnut Creek, October 2, 2012

- *Omni-Means, Ltd. 1510 Geary Road Commercial-Retail Project (Sprouts Development), City of Walnut Creek, March, 2011 (34,916 square feet commercial-retail);*

- *TJKM Transportation Consultants, The Village@Dublin/Draft Supplemental EIR, City of Dublin, August, 2013 (167,200 square feet commercial-retail).*

In all instances, proposed project trips for previously listed transportation studies (listed above) were added into existing, near-term, and cumulative volumes manually. This allows for a more conservative analysis, greater accuracy in using actual project driveway trips, and consistency with other transportation studies. Typically, much larger projects (i.e. City of Walnut Creek Broadway Plaza Master Plan Development) require the use of the CCTA Central County transportation model to "update" the specific traffic analysis zone (TAZ) where the project is located to ensure consistency with model land use projections and amount of development being proposed. However, in the case of the proposed project (and previously analyzed projects in Walnut Creek, Lafayette, and Dublin) updating the model was not undertaken when land uses are generally consistent with current zoning and the projects are much smaller in scale.

Weekday AM and PM peak hour project trips (only) have been shown in Figure 6. Proposed project volumes were added to existing intersection volumes and are shown in Figure 7.

EXISTING PLUS PROJECT INTERSECTION OPERATIONS

With AM and PM peak hour project trips added to existing traffic volumes, study intersection LOS have been calculated and are shown in Table 11. With proposed project traffic, all study intersections would be operating at acceptable levels (LOS D or better) during the AM and PM peak hours. Selected intersections would change LOS and these include the following:

- Boulevard Way/Nicholson Avenue: LOS B to LOS C during both the AM and PM peak hours;
- Mt. Diablo Boulevard/Alpine Road: LOS A to LOS B during the PM peak hour;
- Olympic Boulevard/I-680 northbound ramps: LOS A to LOS B during the AM peak hour;
- Pleasant Hill Road/Old Tunnel Road/SR-24 EB off: LOS B to LOS C during the PM peak hour.

Changes to intersection LOS (listed above) from proposed project traffic would not cause any of the intersections to operate below County or City threshold standards.

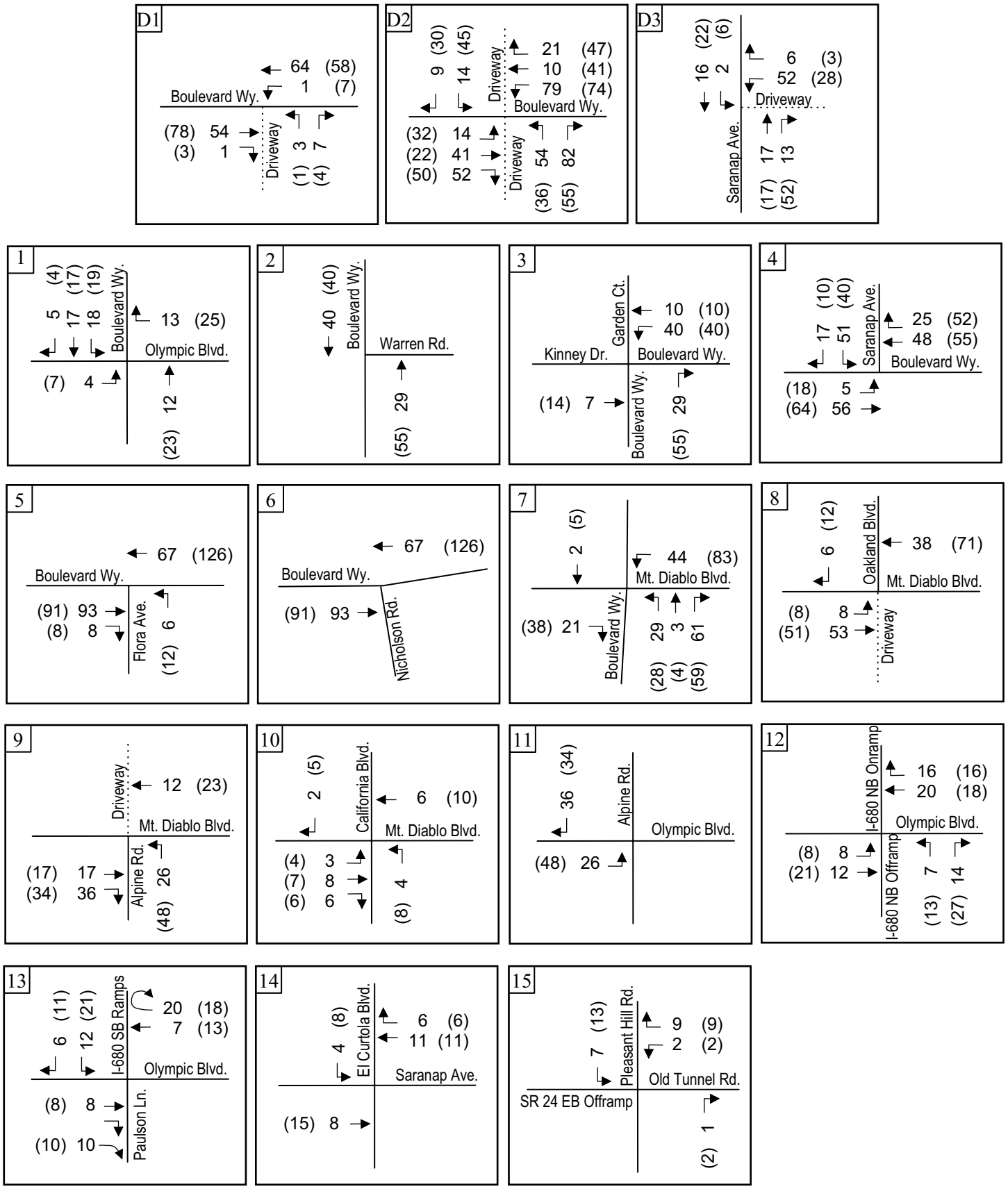
All unsignalized intersections were evaluated for peak hour signal warrant satisfaction with proposed project traffic. Based on MUTCD warrant #3 (peak hour), none of the unsignalized study intersections would qualify for signalization with near-term plus project traffic volumes.

EXISTING PLUS PROJECT ROADWAY OPERATION

Existing plus project roadway operation and LOS has been shown in Table 12. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at acceptable levels (LOS A) with proposed volumes.

EXISTING PLUS PROJECT FREEWAY SEGMENT OPERATION

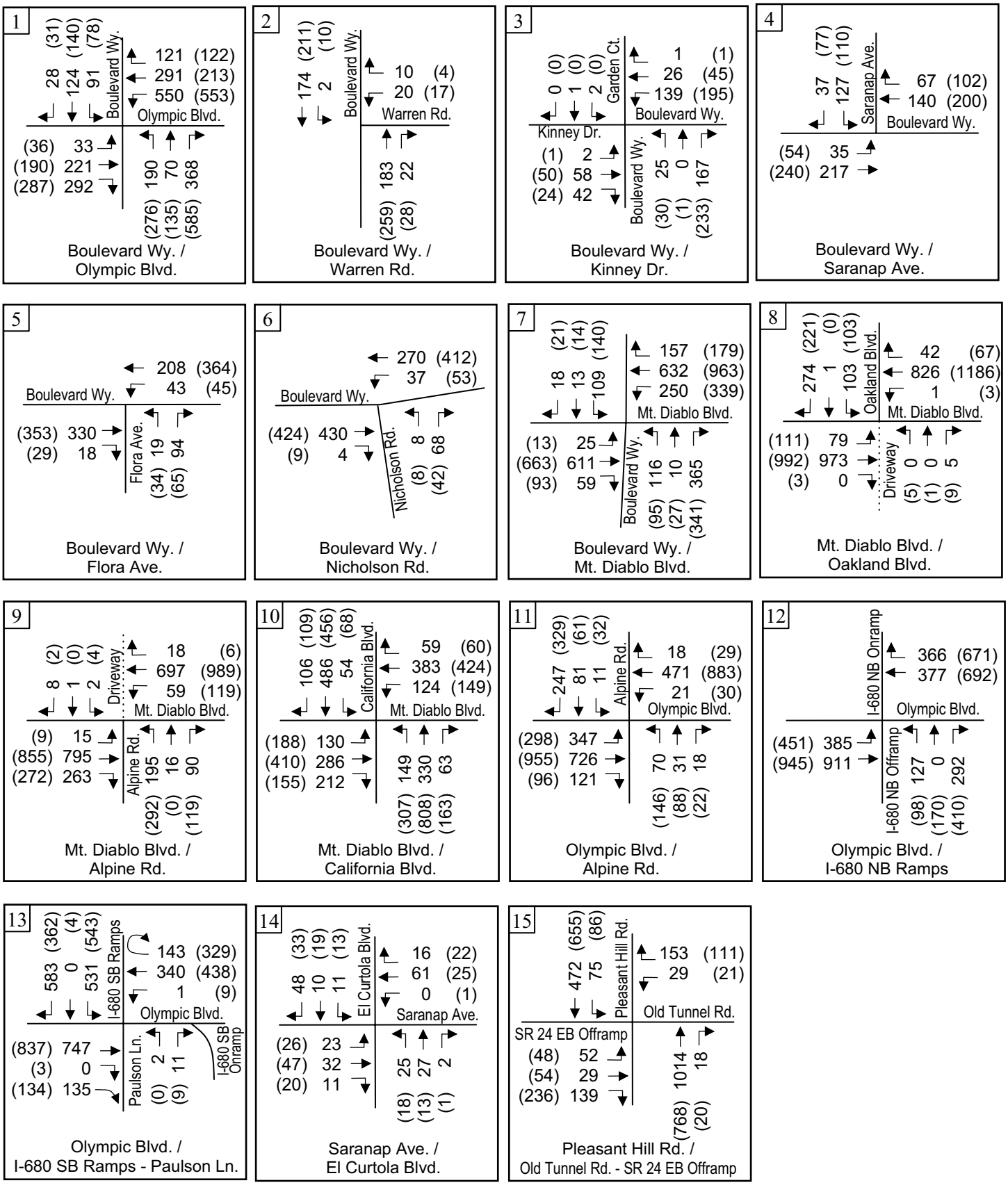
Existing plus project freeway segment operation and LOS has been shown in Table 13. The majority of freeway segments would experience slight increases in overall density from traffic increases related to existing volumes. All freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with existing plus volumes.



A.M. and (P.M.) Peak Hour Project Trips

omni-means

figure 6



Existing Plus Project
A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 7

TABLE 11
EXISTING AND EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LOS
AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			Existing	Exist+Prj.	Existing	Exist+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.43	A 0.44	A 0.46	A 0.49
2	Boulevard Way/Warren Road	TWSC	B 10.2	B 10.7	B 11.2	B 12.1
3	Boulevard Way/Kinney Drive	TWSC	B 10.5	B 11.3	B 11.2	B 12.7
4	Boulevard Way/Saranap Avenue	RDABT	B 11.4	A 8.2	B 12.0	A 8.3
5	Boulevard Way/Flora Avenue	TWSC	B 10.1	B 11.1	B 10.8	B 12.9
6	Boulevard Way/Nicholson Road	TWSC	B 13.1	C 15.2	B 14.5	C 17.2
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.45	A 0.49	A 0.52	A 0.53
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.40	A 0.41	A 0.47	A 0.50
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.49	A 0.52	A 0.60	B 0.64
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.40	A 0.41	A 0.54	A 0.55
11	Olympic Blvd./Alpine Rd.	Signal	A 0.39	A 0.41	A 0.51	A 0.54
12	Olympic Blvd./I-680 NB Ramps	Signal	A 0.58	B 0.61	D 0.86	D 0.89
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	B 0.62	B 0.63	A 0.51	A 0.52
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.5	A 7.6	A 7.5	A 7.7
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 16.6	B 17.4	B 18.6	C 20.4

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions).

TABLE 12
EXISTING AND EXISTING PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Existing		Exist+ Project	
		ADT	LOS	ADT	LOS
Boulevard Way: Warrant Rd. to Kinney Dr.	2-Ln. Arterial	4,484	A	5,662	A
Kinney Dr. west of Boulevard Way	2-Ln. Collector	1,908	A	2,202	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	4,706	A	6,178	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	4,865	A	6,337	A

TABLE 13
FREEWAY OPERATIONS; EXISTING AND EXISTING PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	Direction	Existing LOS/Density	Exist+Prj. LOS/Density	Existing LOS/Density	Exist+Prj. LOS/Density
I-680: North. of N. Main St.	NB	C 22.3	C 22.3	D 31.7	D 31.8
	SB	C 24.2	C 24.2	C 19.7	C 19.8
I-680: South of SR-24	NB	C 25.0	C 25.1	C 21.6	C 21.7
	SB	C 22.2	C 22.3	C 24.2	C 24.3
SR-24: West of I-680	EB	B 15.3	B 15.4	D 31.3	D 31.5
	WB	D 34.4	D 34.5	B 17.0	B 17.1

Source: AECOM, 1500 N. California Boulevard EIR—Chapter 4.13 Transportation and Traffic, December 2012.. Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

PROJECT ACCESS/ON-SITE CIRCULATION

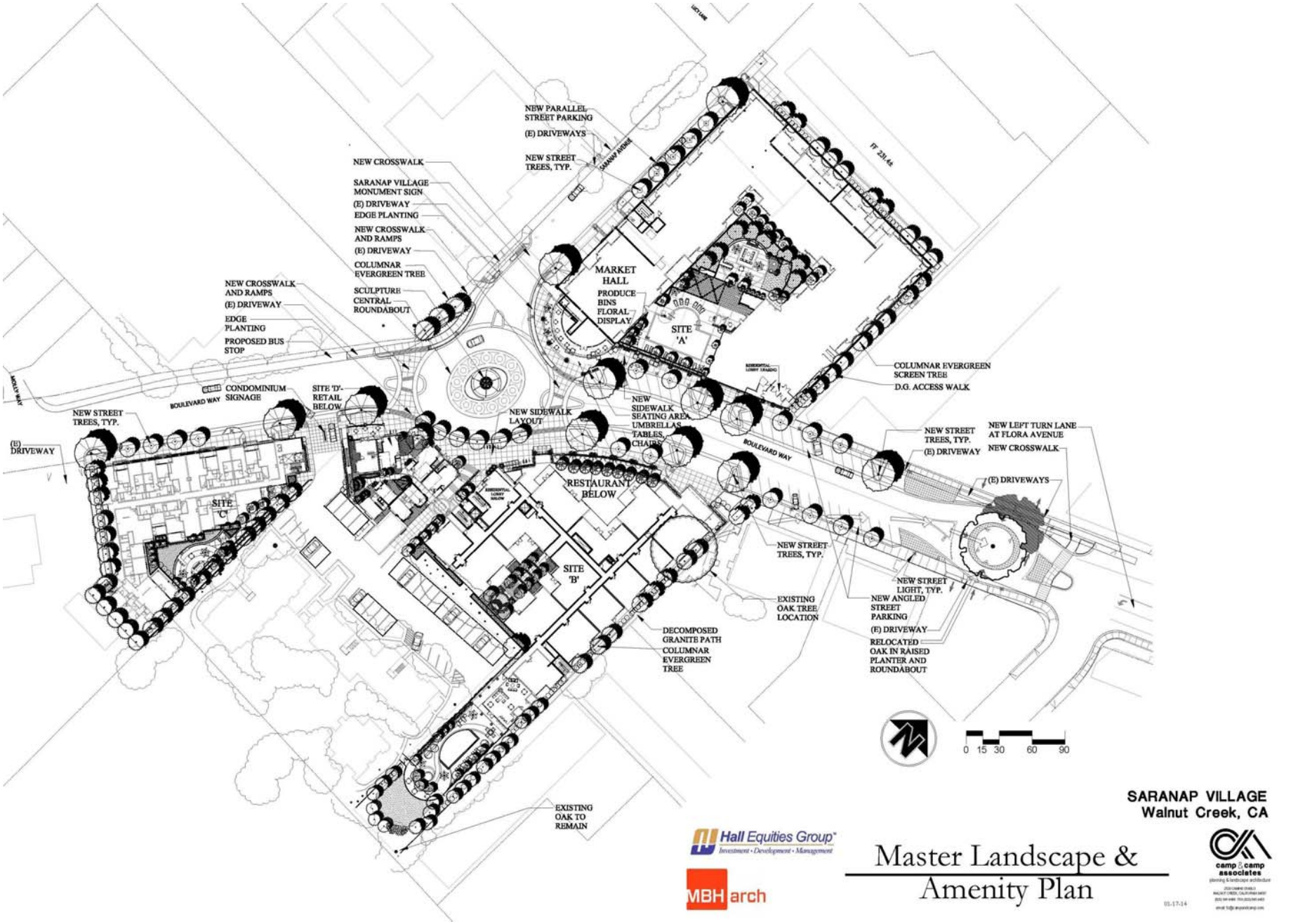
Driveway Access

As initially stated in the Project Description section, vehicle driveway access to the proposed project site would be gained from four new project driveways; three of which would be located on Boulevard Way and one on Saranap Avenue. These would replace three existing commercial driveways on the south side of Boulevard Way and two existing commercial driveways on the north side of the roadway. As shown in Figure 8 (Project Site Plan), a single full-access driveway on the south side of Boulevard Way would extend south into development site C approximately 210 feet west of Saranap Avenue. This driveway would serve residential units only. As part of overall residential access, gated entry would be required. However, these gates would be placed within the parking garage entries to keep them away from street entrance (to the extent possible) to avoid vehicle queuing. A second project driveway would be located approximately 200 feet east of Saranap Avenue on the south side of Boulevard Way. This full-access driveway would provide access to ground level on-site parking associated with retail, restaurant, and residential development of site B-1. Site B-1's driveway would be located directly opposite the project driveway serving development site A on the north side of Boulevard Way and would form a four-way intersection. The project driveway on the north side of Boulevard Way would serve only retail uses associated with site A. Finally, a fourth project driveway would serve development site A on the east side of Saranap Avenue approximately 200 feet north of Boulevard Way. This driveway would serve residential uses only accessing the parking garage for development site A. All project driveways would be constructed to County standards regarding driveway widths/spacing.

Diagonal Parking

With proposed project design components along Boulevard Way and Saranap Avenue, diagonal parking would be introduced to serve new retail and restaurant uses as shown in Figure 9 (Project Streetscape Improvements). Along Boulevard Way, 23 diagonal spaces would be installed along the southern project frontage and beyond extending from west of Saranap Avenue and the existing 7-11 retail store (ending approximately 30 feet before its driveway). 21 diagonal parking spaces would be installed on the north side of Boulevard Way and eight (8) parallel spaces would be provided along the east side of the Saranap Avenue project frontage. Five (5) parallel spaces would front Site C on Boulevard Way.

The proposed diagonal parking spaces would be in additional parking over the on-site parking required by County code regulations. Diagonal parking spaces would have the effect of creating convenient short-term parking for the local serving shops/restaurants along the Boulevard Way and Saranap Avenue project frontages while also helping to calm traffic through the corridor. Compared to parallel on-street parking, diagonal parking allows motorists greater parking efficiency and convenient access to adjacent retail uses. Diagonal spaces would be designed such that motorist backing out of diagonal spaces would not cross over into opposing traffic and would stay in their lane. All diagonal parking spaces would be metered to encourage reasonable turnover. In combination with proposed roundabouts, diagonal parking would help to reduce vehicle speeds through the street segment. It is noted that diagonal parking spaces are not ideal for bicycle travel along street corridors. By necessity, motorists must back out into the same directional flow of traffic in which the bicyclists are travelling. In order to minimize project impacts, it is likely that this segment of Boulevard Way would be designated as a Class III bike route with "sharrow" bicycle legends. The use of "sharrow" bicycle legends would be consistent with the overall traffic calming elements of the proposed roundabouts and diagonal parking and the relative short distance along Boulevard Way project frontage that bicyclists could be accommodated.



Proposed Project Site Plan

North

omni-means

figure 8

Proposed Project Streetscape Plan

North

omni-means

figure 9

Roundabout Operation

A new roundabout is proposed to be installed at the Saranap Avenue/Boulevard Way intersection and a landscaped traffic circle on Boulevard Way immediately west of Flora Avenue. The Saranap Avenue/Boulevard Way roundabout would function as a fully operational, urban single-lane roundabout with counter-clockwise vehicular flow and pedestrian crossings. The landscaped traffic circle on Boulevard Way near Flora Avenue would instead host the relocated large oak tree and calm traffic by forcing it along a gentle curve out toward the sidewalks. The proposed roundabout at the Saranap Avenue/Boulevard Way intersections would be classified as "urban single lane roundabout" and is part of a design component to improve vehicle and pedestrian safety along the Boulevard Way corridor. The roundabout (and traffic circle) would help to create a village concept envisioned by the project applicant. A modern roundabout can have positive effects on traffic flow, pedestrian safety, and serve to provide a "gateway" between urban and residential areas. Some of the benefits of modern roundabouts include the following

- Motor vehicle safety is improved through vehicle accident reduction;
- Pedestrian safety is improved from reduced vehicle speeds and division of crossing distance;
- Intersection capacity is improved (particularly left-turn movements);
- Vehicle delays are reduced through yield rather than stopped movements;
- Low maintenance costs (as compared to signals);
- Aesthetics (landscaping-gateway entries).

The planned roundabout and landscaped traffic circle would serve as gateway entrances to the Boulevard Way project corridor and work in tandem with proposed diagonal parking spaces to reduce vehicle speeds in the area. This would be true of motorists on Boulevard Way approaching Saranap Avenue from the west as well as motorists approaching Flora Avenue from the east. Overall operation of proposed roundabout would be very acceptable with proposed project traffic under near-term and cumulative traffic conditions (LOS A). It is noted that the proposed roundabout and traffic circle would also provide driveway access to existing development on Saranap Boulevard and Boulevard Way. At Saranap Boulevard, this would include existing residential driveway(s) on the north side of Saranap Boulevard approaching Boulevard Way. The traffic circle proposed for just west of Flora Avenue would serve the existing 7-11 driveway on the south side of Boulevard Way as well as commercial driveways on the north side of Boulevard Way. Vehicle counts conducted at these driveways were factored into overall roundabout LOS calculations to ensure acceptable vehicle access and operation.

Vehicle Circulation

The proposed project is designed to accommodate patrons accessing retail and restaurant uses from Boulevard Way through on-street diagonal parking and adjacent ground level parking on either side of Boulevard Way at development site's A and B-1 driveways (and parallel parking on Saranap Avenue frontage). Patrons would either park on-street or use the opposing driveways off Boulevard Way (east of Saranap Avenue) to access ground level off-street parking specifically designated for proposed retail uses. Residential access would be provided to development site A via the Saranap Avenue driveway and development site's B-1 and C via their new Boulevard Way driveways.

All proposed project driveways have been analyzed for intersection LOS operation with existing plus project, near-term plus project, and year 2030 cumulative plus project volumes. As calculated, all project driveways would be operating at LOS D or better during the AM and PM peak hours (see Appendices for Project Driveway LOS calculations). The proposed four-way intersection providing access to development sites A and B driveways at Boulevard Way would experience the highest volume of project trips.

In addition to proposed project driveways, an existing driveway serving the Boulevard Terrace Condominiums on the north side of Boulevard Way would be re-located approximately 100 feet to the west. The driveway relocation would accomplish two goals; 1) eliminate current vehicle conflicts with Boulevard Way traffic, and, 2) eliminate potential conflicts with the proposed roundabout at the Boulevard Way/Saranap Avenue intersection.

Pedestrian Circulation

Pedestrian circulation/safety would be improved and enhanced through the planned installation of a roundabout at the Saranap Avenue/Boulevard Way intersection and landscaped traffic circle on Boulevard Way just west of Flora Avenue. At Saranap Avenue, two new north-south pedestrian crosswalks would be located both east and west of the roundabout. Safety would be enhanced through the division of pedestrian crossings into two stages, from the near side ADA ramp out to the splitter island, and then from the splitter island to the far-side ADA ramp providing a safe "pedestrian refuge" area. In each stage, the pedestrian has to be concerned with on-coming traffic in only one direction to cross a "one-way" traffic stream creating a safer pedestrian crossing experience. Pedestrian refuges are provided in the areas within the splitter islands. Actual crosswalks would be enhanced through texture patterns to improve visibility. On Saranap Avenue, an east-crosswalk would be located immediately behind the roundabout splitter (to avoid existing driveway).

The landscaped traffic circle planned for Boulevard Way west of Flora Avenue would also improve pedestrian safety via a new north-south crosswalk just west of Flora Avenue. This crosswalk would be incorporated into the traffic circle's splitter and offer the same safety factors when crossing the street. It would also help to eliminate much of the jay-walking observed at this intersection across Boulevard Way to reach retail and commercial businesses on either side of the street.

In addition to pedestrian crosswalks, widened pedestrian sidewalks would be installed along all project frontages along Boulevard Way and Saranap Avenue.

Traffic Diversion

The proposed traffic calming elements associated with the proposed project are not anticipated to result in traffic diversion away from Boulevard Way onto parallel routes such as Warren Road and Flora Avenue, during any of the scenarios studied (existing plus project; near term plus project; cumulative plus project). While speeds will be reduced on Boulevard Way through the project area, overall traffic delay will remain relatively low (LOS A at the Boulevard Way/Saranap Avenue intersection). Therefore, there will not be incentive for drivers to use narrow neighborhood streets that have lower capacity and would result in longer travel distance. Boulevard Way from approximately 300 feet west of Saranap Avenue (the western edge of the project) to Olympic Boulevard already has a posted speed limit of 25 mph. Additionally; Boulevard Way between Saranap Avenue (including a portion of the project frontage) and Olympic Boulevard has two lanes. As such, the road is not intended for high-speed travel and the proposed project is consistent with the low-speed two-lane character of Boulevard Way.

TRANSIT

With proposed project improvements along Boulevard Way project frontages, existing County Connection east-west bus stops would have to be re-located to convenient and accessible areas. For eastbound transit access, the approved Sufism Reoriented Sanctuary project is required to re-locate the existing bus stop (just east of Kinney Drive) to a location just west of Molly Way. In order for the project to accommodate a new eastbound bus stop, it would have to re-locate the existing bus stop (just east of Saranap Avenue) to a point at or east of Molly Drive. Since a new bus stop is already planned for this

general area through approved project improvements it could serve both areas. However, a new eastbound County Connection bus stop in this area would not be as convenient for bus patrons originating from the Saranap Avenue area. Currently, residents from Saranap Avenue cross Boulevard Way at its intersection and walk approximately 200 feet east to the County Connection bus stop. With the new eastbound bus stop location near Molly Drive, transit riders would have to walk approximately 400-500 feet to access the stop. However, given the limited project frontage along Boulevard Way combining the two bus-stops would allow convenient access for other potential patrons in the area west of the project site.

The westbound County Connection bus stop on Boulevard Way just east of Saranap Avenue would be re-located to the west side of the existing Atrium Villas Condos, just west of Saranap Avenue. This would require the removal of existing on-street parking. It is noted that there are also additional eastbound and westbound County Connection bus stops east of the project site adjacent to Rule Court.

PROJECT PARKING DEMAND

As previously noted, the project (February 2014) includes a minimum of 664 on-site parking spaces available to the project, plus as many additional spaces as can fit, to accommodate the uses on-site pursuant to standard County Code requirements. The proposed project's architectural firm, *MBH Architects*, has undertaken a calculation of the County's requirements and how those requirements can be met on the project site. MBH's evaluation of project parking demand has been is set forth in an attachment to the Summary/Mitigation section.[29]

NEAR-TERM PLUS PROJECT INTERSECTION OPERATIONS

AM and PM peak hour project trips have been added to near-term (no project) volumes and are shown in Figure 10.

With AM and PM peak hour project trips added to near-term (no project) traffic volumes, study intersection LOS have been calculated and are shown in Table 14. With proposed project traffic, the Olympic Boulevard/I-680 Northbound would continue to operate at LOS E (0.93) during the PM peak hour. The increase in volume/capacity ratio from proposed project trips (0.02) would not be considered significant based on City of Walnut Creek LOS thresholds. In addition , the intersection would continue to operate above the City's threshold of LOS (0.95) for "core area" intersections. All remaining study intersections would be operating at acceptable levels (LOS D or better) during the AM and PM peak hours.

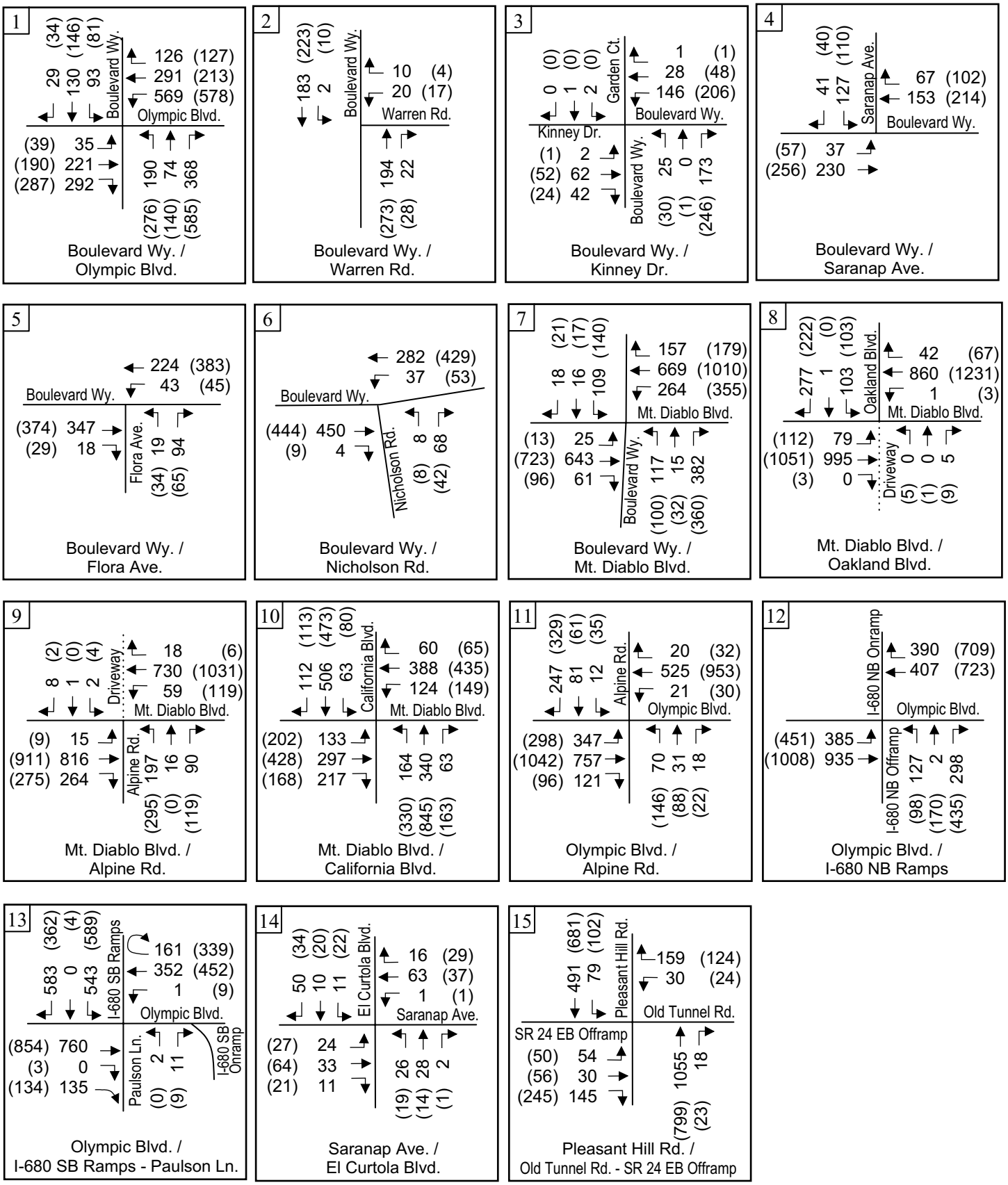
All unsignalized intersections were evaluated for peak hour signal warrant satisfaction with proposed project traffic. Based on MUTCD warrant #3 (peak hour), none of the unsignalized study intersections

would qualify for signalization with near-term plus project traffic volumes.

NEAR-TERM PLUS PROJECT ROADWAY OPERATION

Near-term plus project roadway operation and LOS has been shown in Table 15. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at LOS A with near-term traffic volumes.

29 MBH Architects, Saranap Village, Saranap, California—Parking Counts, February 28, 2014.



Near-Term Plus Project
A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 10

TABLE 14
NEAR-TERM (NO PROJECT) AND NEAR-TERM PLUS PROJECT CONDITIONS: INTERSECTION LOS
AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			N-T (NP)	N-T+Prj.	N-T (NP)	N-T+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.44	A 0.45	A 0.50	A 0.50
2	Boulevard Way/Warren Road	TWSC	B 10.4	B 10.9	B 11.5	B 12.4
3	Boulevard Way/Kinney Drive	TWSC	B 10.8	B 11.5	B 11.5	B 13.0
4	Boulevard Way/Saranap Avenue	TWSC	B 11.6	A 8.2	B 12.4	A 8.3
5	Boulevard Way/Flora Avenue	TWSC	B 10.2	B 11.3	B 11.1	B 13.2
6	Boulevard Way/Nicholson Road	TWSC	B 13.6	C 15.7	B 14.9	C 17.8
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.47	A 0.50	A 0.54	A 0.54
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.41	A 0.42	A 0.49	A 0.51
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.49	A 0.53	B 0.61	B 0.66
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.42	A 0.42	A 0.57	A 0.58
11	Olympic Blvd./Alpine Rd.	Signal	A 0.40	A 0.42	A 0.53	A 0.56
12	Olympic Blvd./I-680 NB Ramps	Signal	A 0.60	B 0.62	**E 0.91**	**E 0.93**
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	B 0.62	B 0.63	A 0.52	A 0.53
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.5	A 7.6	A 7.5	A 7.7
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 16.6	B 16.7	B 18.6	C 21.0

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). N-T(NP) = Near-Term (No Project), N-T+Prj. = Near-Term plus Project

TABLE 15
NEAR-TERM PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Near-Term		NT + Project	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-Ln. Arterial	4,700	A	5,878	A
Kinney Dr. west of Boulevard Way	2-Ln. Collector	1,958	A	2,252	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	4,950	A	6,422	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	5,180	A	6,652	A

NEAR-TERM PLUS PROJECT FREEWAY SEGMENT OPERATION

Near-tern plus project freeway segment LOS has been shown in Table 16. The majority of freeway segments would experience slight increases in overall density from traffic increases related to near-term (no project) volumes. The westbound segment of SR-24 would continue to operate at LOS E conditions during the AM peak hour commute period with proposed project traffic (with or without proposed project traffic). However, the segment's measure of effectiveness (MOE's based on Caltrans standards) would be maintained and overall LOS would remain unchanged from near-term (no project) conditions. For these reasons, the addition of proposed project traffic would be considered *less-than-significant*. All freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with near-term (no project) volumes.

TABLE 16
FREEWAY OPERATIONS; NEAR-TERM AND NEAR-TERM PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	**Direction**	**Near-Term LOS/Density**	**N-T+Prj. LOS/Density**	**Near-Term LOS/Density**	**N-T+Prj. LOS/Density**
I-680: North. of N. Main St.	NB	C 22.5	C 22.6	D 32.3	D 32.4
	SB	C 24.6	C 24.6	C 20.2	C 20.3
I-680: South of SR-24	NB	C 25.0	C 25.1	C 21.8	C 21.9
	SB	C 22.4	C 22.5	C 24.4	C 24.5
SR-24: West of I-680	EB	B 15.5	B 15.5	D 31.4	D 32.1
	WB	**E 36.4**	**E 36.6**	B 17.2	B 17.4

Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl). N-T+Prj. = Near-Term plus Project

YEAR 2030 CUMULATIVE (NO PROJECT) CONDITIONS

METHODOLOGY

Cumulative Year 2030 traffic conditions have been evaluated based on the following three sources:

- *Contra Costa Transportation Authority (CCTA) Central County Transportation Model Year 2000 and Year 2030 Average Daily Traffic (ADT) Volume Projections;*
- *AECOM, 1500 Northern California Boulevard Project EIR Transportation Impact Study, October 3, 2012.*
- *TJKM Transportation Consultants, Traffic and Circulation Impact Analysis for the Proposed Terraces of Lafayette Project, City of Lafayette, April 18, 2012.*

The CCTA's Central County Transportation Model contains both 24-hour ADT and AM and PM peak hour volume projections for the model years 2000 and 2030. Discussions with CCTA staff indicate that these volume projections can be used to develop traffic growth factors that can then be applied to study intersection volumes to determine long-term impacts. Specifically, yearly growth factors developed from the CCTA Model year 2000 and 2030 link volumes were developed for the Boulevard Way main line travel corridor carried to/from Olympic Boulevard, Tice Valley Boulevard, and Mt. Diablo Boulevard. 24-hour ADT projections were used to develop growth rates for all roadways feeding into project study intersections where available. Peak hour model projections were not consistently available for all study intersections and segments, and they were much more dynamic on specific roadway links between project study intersections. For this reason, ADT transportation model projections were used to develop more uniform growth rates that could be applied to both AM and PM peak hour existing intersection volumes consistent with previous traffic studies conducted in the area. Typically, these growth rates rarely exceed 1-2% per year when extrapolated over a 30-year period. Calculated growth rates for the Boulevard Way corridor indicated that traffic volumes would be expected to increase approximately 17% in the westbound direction and 26% in the eastbound direction.[30] In addition to transportation model growth rates, specific cumulative volume increases for Mt. Diablo Boulevard, Alpine Road, and California Boulevard were included from regional and long-range projects in the City of Walnut Creek.[31] Similarly, increases in cumulative traffic volumes for Pleasant Hill Road and Old Tunnel Road were included from transportation analysis conducted in the City of Lafayette.

The results of this analysis were then compared to the most recent base year 2010 and future horizon year

30 Matt Kelly, Associate Transportation Planner, Contra Costa Transportation Authority (CCTA), Central County transportation model plots (Year 2000, 2030), October 24, 2012.
31 AECOM, 1500 Northern California Boulevard Project EIR Transportation Impact Study, October 3, 2012

2040 model projections from the CCTA.[32] New yearly growth factors were developed for the Boulevard Way main line travel corridor carried to/from Olympic Boulevard, Tice Valley Boulevard, and Mt. Diablo Boulevard. Specifically, both 24-hour ADT projections and AM/PM peak hour projections for base year 2010 and future horizon year 2040 were reviewed for volume growth. 24-hour ADT projections were used to develop growth rates for all roadways feeding into project study intersections where available. By comparison, the updated CCTA model projections for base year 2010 and future horizon year 2040 indicate that traffic volumes on Boulevard Way would be expected to increase by only 12% in the westbound direction and 7.5% in the eastbound direction over a 30-year period. The updated CCTA transportation model projections for future horizon year 2040 indicate that future growth along the Boulevard Way corridor is not expected to be significant given other alternative routes in the general study area.

Accordingly, the volume of cumulative traffic derived from Model year 2000 and 2030 link volumes is greater that the volume of cumulative traffic derived from the Model year 2010 and 2040 link volumes. The projections resulting from the former analysis were used in this study to provide a conservative analysis. Also, the future year projections for Boulevard Way using the 2030 data had remained unchanged from previous model output used for the approved Sufism Reoriented project located west of the proposed project site.

There is a long range planning effort being undertaken by the City of Walnut Creek just east of the project study area. The City is currently analyzing the "preferred scenario "for the West Downtown Specific Plan. As part of this effort, the City of Walnut Creek is considering possible amendments to its General Plan and a possible West Downtown Specific Plan Area to allow increased development. That Plan's area would encompass I-680 on the west, Parkside Drive on the north, California Boulevard on the east, and Olympic Boulevard on the south. To date, the City has held community workshops and is preparing the draft Specific Plan, draft General Plan, Zoning Ordinance amendments, and draft Environmental Impact Report. . However, the environmental documents would not be available for months. For this reason, cumulative volume forecasts used in this analysis are based on CCTA transportation model projections for year 2030 (and year 2040).

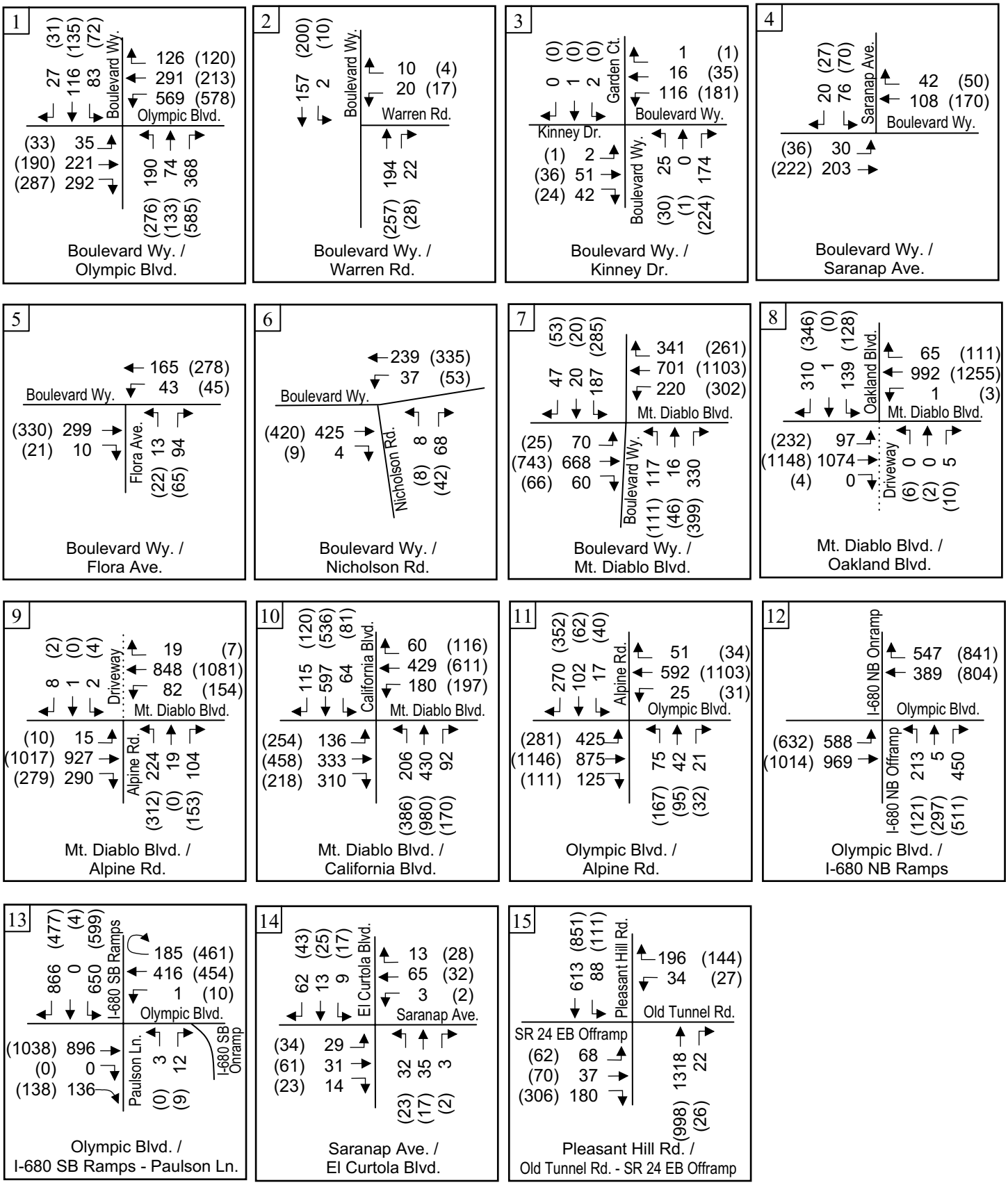
The Contra Costa County General Plan designates the proposed project site as Retail Business (R-B), Neighborhood Business (N-B), General Commercial (G), and Multiple Family Residential (M-29). The proposed project would have the combined application of a General Plan Amendment to a Mixed-Use Planned Development (M); a rezone to Planned Development District (P-1), and a Final Development Plan per the P-1 Zone requirements. Its combination of commercial (retail-restaurant) and residential uses would be generally consistent with existing zoning. However, it is likely that model volume projections do not include the higher amount of residential units being proposed. Consequently, peak hour proposed project trips have been added into year 2030 cumulative (no project) volumes to account for the difference in site specific trip generation and provide a conservative analysis of project impacts.

Year 2030 Cumulative (no project) AM and PM peak hour intersection volumes have been shown in Figure 11.

PLANNED CUMULATIVE CIRCULATION IMPROVEMENTS

The same street network and intersection lane geometries have been assumed for Year 2030 plus Project conditions as with near-term plus project conditions. However, the CCTA's 2014 Countywide Comprehensive Transportation Plan indicates a potential circulation improvement for the Olympic Boulevard corridor at its interchange with Interstate 680. The specific circulation improvement

32 Mr. Matt Kelly, Associate Transportation Planner, Contra Costa Transportation Authority, Central County Transportation Model Plots, AM peak, PM peak, and Daily, Year 2010 Base and Future Year 2040 Link Volumes, 2014.



Year 2030 Cumulative Without Project
A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 11

would apply to the Olympic Boulevard/I-680 Northbound Ramp(s) intersection as follows:

- Install a dual eastbound left-turn lane at the Olympic Boulevard/I-680 NB ramp intersection. In addition, the existing northbound through-lane on the I-680 off-ramp would be closed.

The overall Olympic Boulevard/I-680 northbound ramps project cost is estimated at $500,000 and its status is "not begun."

As previously stated in this analysis, the County is also currently evaluating pedestrian/bicycle connection on this same Olympic Boulevard corridor (Lafayette-Moraga Trail Connection to Iron Horse Trail Pedestrian and Bicycle Project) that would require a portion of the Olympic Boulevard ROW should this alternative route be chosen. Since both the intersection and pedestrian/bike trail projects would require ROW along Olympic Boulevard, these circulation improvements have not been programmed into the cumulative analysis.

YEAR 2030 CUMULATIVE (NO PROJECT) INTERSECTION OPERATIONS

With year 2030 cumulative (no project) traffic volumes derived from the CCTA's Central County Year 2030 travel forecast model and recent transportation studies conducted for the Cities of Walnut Creek and Lafayette, study intersection LOS has been calculated and shown in Table 17. As shown, the intersections of Olympic Boulevard/I-680 Northbound ramps and Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would be operating at deficient levels based on City of Walnut Creek LOS significance thresholds. Specifically, the Olympic Boulevard/I-680 Northbound ramps intersection would be operating at LOS F (1.15 v/c ratio) during the PM peak hour. In addition, the Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would be operating at a "high" LOS D (0.85 v/c ratio) during the AM peak hour.

All remaining study intersections would operate at acceptable levels with year 2030 cumulative (no project) traffic volumes; there would slight increases in vehicle delay and/or intersection LOS but all locations would operate within County and City LOS significance thresholds.

All unsignalized intersections were evaluated for peak hour signal warrant satisfaction with proposed project traffic. Based on MUTCD warrant #3 (peak hour), none of the unsignalized study intersections would qualify for signalization with near-term plus project traffic volumes.

YEAR 2030 CUMULATIVE (NO PROJECT) ROADWAY OPERATION

Year 2030 cumulative (no project) roadway operation and LOS has been shown in Table 18. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at LOS A with year 2030 cumulative (no project) ADT volumes. Boulevard Way would continue to be configured as a two-lane undivided arterial street west of Saranap Avenue, (though its traffic volumes would continue to fall below the volumes generally expected for this arterial classification [9,000-12,000 ADT]). Kinney Drive would maintain a two-lane collector status.

YEAR 2030 CUMULATIVE (NO PROJECT) FREEWAY SEGMENT OPERATION

Year 2030 cumulative (no project) freeway segment LOS has been shown in Table 19. The majority of freeway segments would be operating at LOS C-D with associated densities from traffic increases related to year 2030 (no project) volumes. However, three freeway segments would be operating at LOS E-F and these include the following:

TABLE 17
YEAR 2030 CUMULATIVE (NO PROJECT) AND YEAR 2030 CUMULATIVE PLUS PROJECT CONDITIONS: INTERSECTION LOS / AM AND PM PEAK HOUR

#	Intersection	Control Type	AM Peak Hour/LOS-Delay		PM Peak Hour/LOS Delay	
			2030 (NP)	2030+Prj.	2030 (NP)	2030+Prj.
1	Boulevard Way/Olympic-Tice Blvd.	Signal	A 0.44	A 0.45	A 0.50	A 0.50
2	Boulevard Way/Warren Road	TWSC	B 10.7	B 11.2	B 12.0	B 13.0
3	Boulevard Way/Kinney Drive	TWSC	B 10.9	B 11.7	B 11.9	B 13.5
4	Boulevard Way/Saranap Avenue	RDABT	B 12.0	A 8.1	B 12.9	A 8.2
5	Boulevard Way/Flora Avenue	TWSC	B 10.5	B 11.6	B 11.5	B 14.0
6	Boulevard Way/Nicholson Road	TWSC	B 14.9	C 17.2	C 16.4	C 19.8
7	Boulevard Way/Mt. Diablo Blvd.	Signal	A 0.60	B 0.61	C 0.74	C 0.75
8	Mt. Diablo Blvd./Oakland Ave.	Signal	A 0.49	A 0.50	B 0.62	B 0.64
9	Mt. Diablo Blvd./Alpine Road	Signal	A 0.60	B 0.64	C 0.74	C 0.78
10	Mt. Diablo Blvd./California Blvd.	Signal	A 0.48	A 0.49	C 0.72	C 0.73
11	Olympic Blvd./Alpine Rd.	Signal	A 0.51	A 0.52	A 0.60	B 0.63
12	Olympic Blvd./I-680 NB Ramps	Signal	E 0.92	E 0.94	**F 1.15**	**F 1.18**
13	Olympic Blvd./I-680 SB Off/Paulson Ln	Signal	**D 0.85**	**D 0.86**	B 0.66	B 0.67
14	Saranap Ave./El Curtola Blvd./O. Tunnel	MWSC	A 7.8	A 7.8	A 7.8	A 8.0
15	Pleasant Hill Rd./O. Tunnel/SR-24 WB	Signal	B 19.2	B 19.8	C 24.0	C 26.2

Note: County/City of Walnut Creek signalized intersection LOS based on CCTA 2.35 methodology. Remaining intersections HCM 2000 methodology (Synchro-Simtraffic software). RDABT = Roundabout (A roundabout would be installed at the Saranap Avenue/Boulevard Way intersection under existing plus project conditions). 2030(NP) = 2030 (No Project), 2030+Prj. = 2030 plus Project

TABLE 18
YEAR 2030 CUMULATIVE (NO PROJECT) AND PLUS PROJECT CONDITIONS: ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Configuration	Yr. 2030 (NP)		Yr. 2030+Prj.	
		ADT	LOS	ADT	LOS
Boulevard Way: Warren Rd. to Kinney Dr.	2-Ln. Arterial	5,448	A	6,626	A
Kinney Dr: west of Boulevard Way	2-Ln. Collector	2,318	A	2,612	A
Boulevard Way: Garden Ct. to Iris Ln.	2-Ln. Arterial	5,718	A	7,190	A
Boulevard Way: Molly Way to Saranap Ave.	2-Ln. Arterial	5,911	A	7,383	A

TABLE 19
FREEWAY OPERATIONS; YEAR 2030 CUMULATIVE (NO PROJECT) AND PLUS PROJECT LOS RESULTS

Freeway Facility		AM Peak Hour		PM Peak Hour	
Mainline Segment	Direction	2030 (NP) LOS/Density	2030+Prj. LOS/Density	2030 (NP) LOS/Density	2030+Prj. LOS/Density
I-680: North. of N. Main St.	NB	D 26.3	D 26.4	**E 38.8**	**E 38.9**
	SB	D 29.0	D 29.0	C 22.3	C 22.4
I-680: South of SR-24	NB	D 28.8	D 28.8	C 25.9	C 26.0
	SB	D 26.3	D 26.4	D 26.9	D 26.9
SR-24: West of I-680	EB	C 18.3	C 18.3	**E 41.8**	**E 42.1**
	WB	**F 46.6**	**F 46.9**	C 20.8	C 20.9

Freeway segment LOS based on HCS2000 basic freeway segment LOS which yields an LOS and density (passenger cars per mile per lane—pcpmpl).

- I-680: North of N. Main Street (northbound): LOS E (38.8 density)—PM peak hour;
- SR-24: West of I-680 (eastbound): LOS E (41.8 density)—PM peak hour;
- SR-24: West of I-680 (westbound): LOS E (46.6 density)—AM peak hour.

All remaining freeway segments in the study area would continue to operate at LOS D or better during the

AM and PM peak hour commute periods with near-term (no project) volumes.

YEAR 2030 CUMULATIVE PLUS PROJECT INTERSECTION OPERATION

AM and PM peak hour project trips were added to year 2030 cumulative (no project) volumes and are shown in Figure 12.

With proposed project trips added to year 2030 cumulative (no project) traffic volumes, study intersection LOS has been calculated and shown in Table 17. The intersections of Olympic Boulevard/I-680 Northbound ramps and Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would continue to operate at deficient levels based on City of Walnut Creek LOS significance thresholds (with or without proposed project traffic). Specifically, the Olympic Boulevard/I-680 Northbound ramps intersection would be operating at LOS F (1.18 v/c ratio) during the PM peak hour. In addition, the Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would be operating at a "high" LOS D (0.86) during the AM peak hour. Based on the City of Walnut Creek's significance thresholds for intersections within and outside the "core area," the proposed project would result in an impact to these intersections if the volume/capacity ratio increases by more than 0.05. Since the addition of project traffic would only result in volume/capacity ratio increases of 0.30 and 0.01 (respectively) at these intersections, these impacts resulting from proposed project trips would be considered *less-than-significant*.

All remaining study intersections would operate at acceptable levels with year 2030 cumulative plus project traffic volumes; there would slight increases in vehicle delay and/or intersection LOS but all locations would operate within County and City LOS significance thresholds.

YEAR 2030 CUMULATIVE PLUS PROJECT ROADWAY OPERATION

Year 2030 cumulative plus project roadway operation and LOS has been shown in Table 18. The four analyzed roadway segments on Boulevard Way and Kinney Drive would continue to operate at LOS A with the addition of proposed project ADT. Boulevard Way would continue to operate as a two-lane undivided arterial street (west of Saranap Avenue) and Kinney Drive would maintain a two-lane collector status.

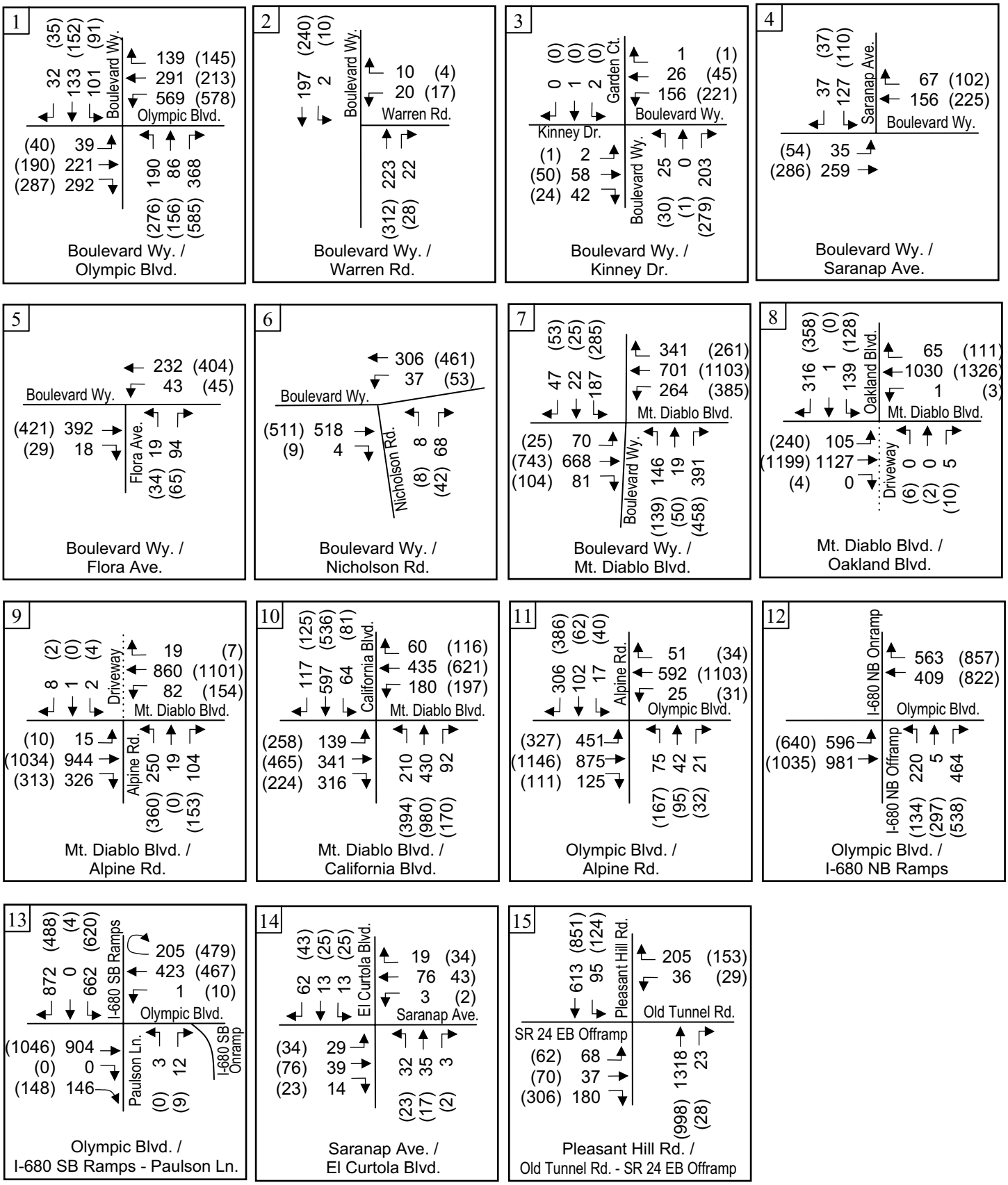
YEAR 2030 CUMULATIVE PLUS PROJECT FREEWAY SEGMENT OPERATION

Year 2030 cumulative plus freeway segment LOS has been shown in Table 19. The majority of freeway segments would be operating at LOS C-D with associated densities from traffic increases related to proposed project trips. However, three freeway segments would continue to operate at LOS E-F (with or without the proposed project) and these include the following:

- I-680: North of N. Main Street (northbound): LOS E (38.9 density)—PM peak hour;
- SR-24: West of I-680 (eastbound): LOS E (42.1 density)—PM peak hour;
- SR-24: West of I-680 (westbound): LOS E (46.9 density)—AM peak hour.

The incremental gains in density (0.3 or less) at each of the above freeway segment locations as a result of proposed project traffic are not cumulatively considerable. As under near-term plus project conditions, the segments' measure of effectiveness (MOE's based on Caltrans standards) would be maintained and overall LOS would remain unchanged from year 2030 cumulative (no project) conditions. For these reasons, the addition of proposed project traffic would be considered *less-than-significant*.

All remaining freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with year 2030 cumulative plus project volumes.



Year 2030 Cumulative Plus Project
A.M. and (P.M.) Peak Hour Volumes

North

omni-means

figure 12

SUMMARY/RECOMMENDED MEASURES

The following section summarizes existing conditions through year 2030 cumulative conditions with and without the proposed Saranap Village project. Where necessary, measures have been recommended to ensure acceptable levels of traffic flow, pedestrian/bicycle circulation, and vehicle parking/driveway access.

EXISTING CONDITIONS

Based on new and recently obtained intersection traffic counts for proposed project analyses conducted on Boulevard Way, Mt. Diablo Boulevard, Olympic Boulevard, Saranap Avenue, and Pleasant Hill Road, all 15 study intersections (signalized and stop-sign controlled) are currently operating at acceptable levels (LOS D or better) based on County and cities of Walnut Creek/Lafayette significance thresholds. All freeway study segments on I-680 and SR-24 are operating at acceptable levels (LOS D or better). Existing roadway operation at specific street segments along Boulevard Way and Kinney Drive indicate that average daily traffic (ADT) volumes are well below the carrying capacity of a two-lane undivided arterial street and two-lane undivided residential collector street.

It is noted that Boulevard Way benefits from relatively low traffic volume levels. From a focus purely on operational capacity, intersections along Boulevard Way do not experience significant volumes or measured vehicle delays. Consequently, intersection LOS along Boulevard Way tends to operate in very acceptable ranges (LOS A-B). Conversely, intersections (and roadway segments) along Boulevard Way would have to experience significant increases in traffic volumes to operate at unacceptable levels (LOS E-F).

NEAR-TERM (NO PROJECT) CONDITIONS

Near-Term (no project) traffic volumes were derived from transportation studies for recently approved projects in Contra Costa County and Cities of Walnut Creek/Lafayette as well as traffic growth projections from the Contra Costa Transportation Authority (CCTA) central County transportation model. With approved project traffic and a 6% growth in existing volumes (2% per year to the year 2016), 15 of 16 study intersections would operate at LOS D or better during the AM and PM peak hours. The intersection of Olympic Boulevard/I-680 Northbound ramps would be operating at LOS E (0.91 v/c ratio) during the PM peak hour. However, this operating condition would still be within the City of Walnut Creek's significance threshold of LOS E (0.95 v/c ratio or less) for intersections located within the downtown "core" area.

The SR-24 westbound freeway segment would be operating at LOS E (36.4 density) during the AM peak hour with near-term (no project) traffic. All remaining freeway study segments would be operating at acceptable conditions (LOS D or better).

EXISTING PLUS PROJECT CONDITIONS

The proposed Saranap Village project would consist of residential (multi-family), commercial-retail, restaurant, and fitness club uses. The proposed project is estimated to generate 4,908 daily trips with 290 net new AM peak hour trips and 396 net new PM peak hour trips. As part of planned project circulation improvements, a "village concept" would be proposed where the Boulevard Way segment from Saranap Avenue to Flora Avenue would be narrowed from four travel lanes to two travel lanes. New diagonal street parking would be installed along the proposed project frontages of Boulevard Way (diagonal parking would actually extend beyond project frontages on Boulevard Way to just west of Flora Avenue). Finally, a roundabout would be installed at the Saranap Avenue/Boulevard Way intersection and a landscaped traffic circle on Boulevard Way just west of Flora Avenue to provide improved vehicle

access, traffic calming, and improved pedestrian safety.

With existing plus project traffic volumes, all 15 project study intersections would continue to operate within County significance thresholds of LOS D or better. All freeway segments on I-680 and SR-24 would operate at acceptable levels (LOS D or better). All roadway segments on Boulevard Way and Kinney Drive would be operating at LOS A with proposed project traffic. As noted, analysis of roadway segments west of Saranap Avenue along Boulevard Way and Kinney drive indicate acceptable roadway operation with proposed project traffic (LOS A). Residents living along these street segments would notice increases in daily and peak hour traffic volumes. However, based on approved roadway and pedestrian improvements associated with construction of the approved Sufism Reoriented Sanctuary project, pedestrian safety and vehicle sight distance would be greatly improved in this area. Specifically, a new pedestrian sidewalk would be installed on the south side of Boulevard Way between Warren Road and Molly Drive. In addition, the existing curve radius on the south side of Boulevard Way at the Kinney Drive/Garden Court intersection would be improved to provide better vehicle sight distance and pedestrian visibility.

With the installation of diagonal street parking along Boulevard Way, there is potential for bicycle traffic to be affected by the reduction in vehicle travel lanes and/or vehicles backing out of diagonal parking spaces. However, the "village concept" of the proposed project that includes a roundabout and landscaped traffic circle, reduced travel lanes, wide sidewalks, and safer pedestrian crossings is designed to calm the flow of vehicle traffic through the area. These calming elements are intended to reduce vehicle speeds and create a safer traffic/street environment that would allow bicyclists and motorist to safely share the roadway. The Contra Costa Countywide Bicycle and Pedestrian Plan recommends this segment of Boulevard Way as a proposed Class III bicycle route. To reduce potential bicycle/vehicle conflicts, it is recommended that the following measure be considered:

- Where bicyclist and vehicles share the same travel lane, the California Manual on Uniform Traffic Control Devices (CAMUTCD) recommends the installation of a shared lane marking. Specifically, shared lane markings or "sharrows" are installed for the following reasons:

    - Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle,
    - Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane,
    - Alert road users of the lateral location bicyclists are likely to occupy within the traveled way,
    - Encourage safe passing of bicyclists by motorists, and
    - Reduce the incidence of wrong-way bicycling.

    No reference is made towards diagonal street parking and bicyclists' lateral position, but these markings would act in much the same manner (see Appendices for Shared Lane Markings);

Consideration was given to allowing bicycle travel on pedestrian sidewalks along Boulevard Way between proposed project boundaries, but this notion was rejected as being incompatible with the pedestrian-oriented goals of the project and it was discouraged by County staff. Consideration was also given to not designating this segment of Boulevard Way as a Class III bicycle route, but this proposal was rejected as not implementing County policy.

Project parking demand has been evaluated in an attachment generated by MBH Architects at the end of this Summary/Mitigation section.[33]

The installation of a proposed roundabout at the Saranap Avenue/Boulevard Way intersection would

33 MBH Architects, Saranap Village, Saranap, California—Parking Counts, February 28, 2014.

allow LOS A operations for all "plus project" scenarios. Roundabouts have been shown to reduce vehicle and pedestrian accidents, reduce vehicle speeds, and improve pedestrian safety. As proposed, the roundabout (and landscaped traffic circle to the east) would act as gateways on both the east and west borders of the project and serve to calm traffic flows along Boulevard Way in this area. In addition, all vehicle access to driveways serving existing residential, retail, and commercial businesses adjacent to the roundabout and landscaped traffic circle would not be disrupted or prohibited.

With the installation of the proposed project roundabout at the Saranap Avenue/Boulevard Way intersection, existing County Connection bus stops located just east of Saranap Avenue on Boulevard Way would need to be re-located. The project applicant has indicated that the preferred location for these bus stops would be on the west side of Saranap Avenue. These new stops would necessarily remove existing on-street parking currently serving existing residences on both sides of Boulevard Way. In response, the following measure is recommended:

It is recommended that the eastbound County Connection bus stop planned for the approved Sufism Reoriented project (under construction) be used for proposed project transit access. This would require bus patrons living off Saranap Avenue to walk a further distance to Molly Way. However, it would preserve on-street parking and allow other adjacent residents to walk shorter distances to the bus stop. In addition, it is not likely County Connection would approve another eastbound bus stop within 200-300 feet of an existing stop. For westbound transit access, the existing County Connection bus-stop would have to be re-located to Boulevard Way immediately west of the Atrium Villas driveway approximately 100 feet west of Saranap Avenue. The street curb on the west side of this driveway is already red curbed for approximately 40 feet. The new bus stop would require the further removal of approximately 1-2 parking spaces. Existing bus stops for eastbound/westbound travel located just east of the project site on Boulevard Way adjacent to Rule Court would remain.

NEAR-TERM PLUS PROJECT CONDITIONS

With near-term plus project volumes, all 15 study intersections would continue to operate within County and City significance thresholds for overall LOS. With proposed project traffic, the only intersection operating below LOS D would be the Olympic Boulevard/I-680 Northbound ramps intersection at LOS E (0.93 v/c ratio). However, the intersection would continue to operate within City of Walnut significance thresholds of 0.95 v/c (or less) and proposed project trips would increase the v/c ratio by 0.02. Again, this increase in v/c ratio is well within the City's significance criteria. With regard to freeway segment operation, the westbound segment of SR-24 would continue to operate at LOS E conditions during the AM peak hour commute period with proposed project traffic (with or without proposed project traffic). However, the segment's measure of effectiveness (MOE's based on Caltrans standards) would be maintained and overall LOS would remain unchanged from near-term (no project) conditions. For these reasons, the addition of proposed project traffic would be considered *less-than-significant*. All freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with near-term (no project) volumes.

Roadway segment ADT volumes would also operate at LOS A. The same recommendations for "Existing Plus Project Conditions" would apply to near-term plus project conditions. It is noted that under near-term conditions, the approved Sufism Reoriented Sanctuary project will be improving Boulevard Way west of the proposed project site to enhance pedestrian facilities and transit access.

YEAR 2030 CUMULATIVE (NO PROJECT) CONDITIONS

Year 2030 cumulative (no project) conditions were developed from the Contra Costa Transportation Authority (CCTA) Countywide Transportation model volumes and recent transportation studies conducted for the cities of Walnut Creek and Lafayette. Base model year volumes (year 2000) were

compared to year 2030 volumes to develop long-term traffic growth rates. Model volume projections indicate traffic flows along Boulevard Way would grow approximately 26% in the eastbound direction and 17% in the westbound direction. In addition to County model growth rates, transportation studies conducted for the Cities of Walnut Creek and Lafayette projects were reviewed to account for long-term volume increases on Mt. Diablo Boulevard, California Boulevard, Alpine Road, Olympic Boulevard, and Pleasant Hill Road. With year 2030 cumulative (no project) volumes, 13 of the 15 study intersections would continue to operate at acceptable County and City LOS thresholds. However, the Olympic Boulevard/I-680 Northbound ramps would be operating at LOS F (1.15 v/c ratio) during the PM hour. The Olympic Boulevard/I-680 Southbound ramp/Paulson Lane intersection would also be operating at a "high" LOS D (0.85 v/c ratio).

With respect to freeway segment operation, the majority of freeway segments would be operating at LOS C-D with associated densities from traffic increases related to year 2030 (no project) volumes. However, three freeway segments would be operating at LOS E-F and these include the following:

- I-680: North of N. Main Street (northbound): LOS E (38.8 density)—PM peak hour;
- SR-24: West of I-680 (eastbound): LOS E (41.8 density)—PM peak hour;
- SR-24: West of I-680 (westbound): LOS E (46.6 density)—AM peak hour.

All remaining freeway segments in the study area would continue to operate at LOS D or better during the AM and PM peak hour commute periods with near-term (no project) volumes.

Roadway segment ADT volumes would also operate at LOS A.

YEAR 2030 CUMULATIVE PLUS PROJECT CONDITIONS

Under year 2030 cumulative plus project conditions, the intersections of Olympic Boulevard/I-680 Northbound ramps and Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would continue to operate at deficient levels based on City of Walnut Creek LOS significance thresholds (with or without proposed project traffic). Specifically, the Olympic Boulevard/I-680 Northbound ramps intersection would be operating at LOS F (1.18 v/c ratio) during the PM peak hour. In addition, the Olympic Boulevard/I-680 Off-Ramp/Paulson Lane would be operating at a "high" LOS D (0.86) during the AM peak hour. Based on the City of Walnut Creek's significance thresholds for intersections within and outside the "core area," the proposed project would result in an impact to these intersections if the volume/capacity ratio increases by more than 0.05. Since the addition of project traffic would only result in volume/capacity ratio increases of 0.30 and 0.01 (respectively) at these intersections, these impacts resulting from proposed project trips would be considered *less-than-significant*.

For freeway segment operation, three freeway segments would continue to operate at LOS E-F (with or without the proposed project) and these include the following:

- I-680: North of N. Main Street (northbound): LOS E (38.9 density)—PM peak hour;
- SR-24: West of I-680 (eastbound): LOS E (42.1 density)—PM peak hour;
- SR-24: West of I-680 (westbound): LOS E (46.9 density)—AM peak hour.

The incremental gains in density (0.3 or less) at each of the above freeway segment locations as a result of proposed project traffic are not cumulatively considerable. Consequently, the proposed project would result in a *less-than-significant* impact on the adjacent freeway segments.

In addition, all studied roadway segments would continue to operate at LOS A along Boulevard Way and Kinney Drive.

PROPOSED PROJECT TRIP GENERATION DUE TO DESIGN MODIFICATIONS

ADDITIONAL TRIPS DUE TO DESIGN CHANGES

After this supplemental traffic study was commenced, the preliminary project design underwent additional design changes that modified the amount of Gross Leasable Area for some non-residential uses. These design changes resulted in square footages that are included in the Project Overview dated February 14, 2014. However, the trips generated by the design changes are not reflected in Tables 10A or 10B of this document. The trips generated by the design changes are set forth in Table 20.

The AM/ PM peak hour and daily trip generation reflected in Table 20 are negligible from a traffic perspective and do not affect the conclusions of the Supplemental Traffic Report. Peak hour trip generation analyzed in Table 10A indicates the project would generate 290 AM trips and 396 PM trips. Daily trip generation analyzed in Table 10B indicates the project would generate 4,908 net new daily trips. With the slight changes resulting from proposed project design modifications, the new trip generation would result in 294 AM peak hour and 405 PM peak hour trips. On a daily basis, overall project trips would increase from 4,908 to 4,998 daily trips. Based on proposed project trip assignment and the dispersing of project trips as they travel further away from the site, these slight increases in trip generation would not be measurable within the fluctuations of daily traffic.

TABLE 20
PROPOSED PROJECT TRIP GENERATION:
ADDITIONAL DAILY, AM, AND PM PEAK HOUR TRIPS DUE TO DESIGN MODIFICATIONS

Project Use	GLA of 2/14/2014 Project Overview	GLA of the Preliminary Design (January 2014)	Difference in GLA Attributable to Design Changes	Daily Trips*	AM Peak*	PM Peak*
Shopping Center	3,496	3,153	+343	+37	+1	+4
Restaurant	5,589	5,383	+206	+18	+2	+2
Grocery	15,236	14,789	+447	+32	+2	+4
Coffee Shop	2,135	2,000	+135	No Change		
Bank	690	791	-101	-6	-1	-2
Fitness Club	14,173	13,888	+285	+9	0	+1
Additional Project Trips Due To Design Modifications				**+90**	**+4**	**+9**

** These are the trips attributable to the incremental differences due to design changes, after deductions for linked and pass-by trips.*

However, because the projected number of daily trips may be relevant to analyses of other impacts, the total daily trips attributable to the project described in the project overview dated February 14, 2014 are set forth in Table 21.

PROPOSED PROJECT PARKING DEMAND; MBH ARCHITECTS (ATTACHED)

TABLE 21
PROPOSED PROJECT TRIP GENERATION:
ADDITIONAL DAILY TRIPS DUE TO DESIGN MODIFICATIONS

2/14/2014 Project Use	Quantity KSF/DU	Daily Trips
Apartment (Gross)	235du	1,563
Net New Residential Trips		**1,563**
Shopping Center (Gross)	3.496ksf	768
Internal Trip Reduction 15%		-115
		653
Pass-By Reduction 12.5% (50% of Peak Hour PM Pass-By Rate)		-82
Shopping Center (Net)		**571**
Restaurant (Gross)	5.589ksf	711
Internal Trip Reduction 15%		-107
		604
Pass-By Reduction 21.5% (50% of Peak Hour PM Pass-By Rate)		-130
Restaurant (Net)		**474**
Grocery (Gross)	15.236ksf	1,558
Internal Trip Reduction 15%		-234
		1,324
Pass-By Reduction 18% (50% of Peak Hour PM Pass-By Rate)		-238
Grocery (Net)		**1,086**
Fitness Club (Gross)	14.173ksf	467
Internal Trip Reduction 15%		-70
Fitness Club (Net)		**397**
Bank (Gross)	0.690ksf	51
Internal Trip Reduction 15%		-8
Bank (Net)		**43**
Coffee Shop (Gross)	2.135ksf	1,523
Internal Trip Reduction 15%		-228
		1,295
Pass-By Reduction 17.5%		-227
Coffee Shop (Net)		**1,068**
Bar (Gross)	2.222ksf	113
Internal Trip Reduction 15%		-17
Bar (Net)		**96**
Net New Commercial Trips (less Internal/P-By)		3,735
Net New Residential & Commercial Trips		**5,298**
Less Existing Site Driveway Trips		-300
TOTAL NET NEW PROJECT TRIPS		**4,998**

KSF = 1,000 square feet, DU = Dwelling Unit, n.a. = not applicable
Daily Pass-By rate represents 50% of the stated peak hour rate, with the exception of Coffee Shop use. For Coffee Shop use, a conservative Daily Pass-By rate of 17.5% is applied, in recognition that most pass-by trips for the Coffee Shop are expected to be concentrated during the AM peak period, as people head to their daily destinations.

MBH arch

February 28, 2014

Saranap Village, Saranap, California - Parking Counts
Hall Equities Group
Architect's Project Number: 48606

Parcel A

	#/Area[1]	Calculation	Required	Provided	Δ
Residential					
Studios	6	1	6	6	
1-Bed	91	1.5	137	137	
2-Bed	44	2	88	88	
3-Bed	2	2	4	5	
		Total	**235**	**236**	1
Retail					
Grocery	14768 SF	1/200	74	74	
Fitness	13114 SF[2]	1/305	43	43	
Bank	620 SF	1/250	2	2	
Guest	143	1/4	36	36	
		Total	**155**	**155**	0
Parking Totals					
Total Parking Spaces			**390**	**391**	

Parcel B

	#/Area	Calculation	Required	Provided	Δ
Residential					
1-Bed	19	1.5	29	29	
2-Bed	43	2	86	88	
Townhouse	6	2	12	12	
		Total	**127**	**129**	2
Retail					
Retail Total	5258 SF	1/250	21	21	
Restaurant	5385 SF	1/100	54	54	
Bar / Lounge	2028 SF	1/100	20	21	
Guest	68	1/4	17	17	
		Total	**112**	**113**	1
Parking Totals					
Total Parking Spaces			**239**	**242[3]**	

[1] Area is tabulated per the 2013 California Building Code definition of "Gross Floor Area."
[2] Fitness area does not include stairs, janitor's closets, or steam generator closets.
[3] The 242 total spaces can be accommodated on Parcel B with an expansion of the garage proposed in the February 14, 2014 project description to occupy otherwise unused underground space within the exterior walls of the project.

Saranap Village, Saranap, California - Parking Counts

Hall Equities Group

Architect's Project Number: 48606

Parcel C

	#/Area[1]	Calculation	Required	Provided	Δ
Residential					
1-Bed	3	1.5	5	5	
2-Bed	18	2	36	36	
3-Bed	3	2	6	6	
Guest	24	1/4	6	1	
Street	N/A	N/A	N/A	5	

Parking Totals					
Total Parking Spaces			**53**	**53**[2]	0

Total Parking Spaces Available to Project	**Required**	**Provided**
(including 5 Parcel C frontage spaces, excluding other street parking and excluding 13 replacement spaces for Boulevard Terrace Condominiums)	**682**	**686**

[1] Area is tabulated per the 2013 California Building Code definition of "Gross Floor Area."

[2] Of these 53 spaces on Parcel C, 48 are included within the garage and 5 are parallel parking spaces within the public right-of-way fronting Parcel C.

This page intentionally left blank

omni · means
ENGINEERING SOLUTIONS

Memorandum

To:	Hall Equities Group	**Date:**	August 25, 2015
Attn:	Mr. Reed Onate, Vice President	**Project:**	Proposed Saranap Village
From:	Peter Galloway		Mixed-Use Project
Re:	Analysis of Reverse-Angle Parking	**Job No.:**	35-3528-06
	Boulevard Way Project Frontage	**File No.:**	C1667MEM011.docx
CC:	Ms. Marie Cooper (Perkins-Coie) Mr. Ron Boyle, PE Principle (Omni-Means)		

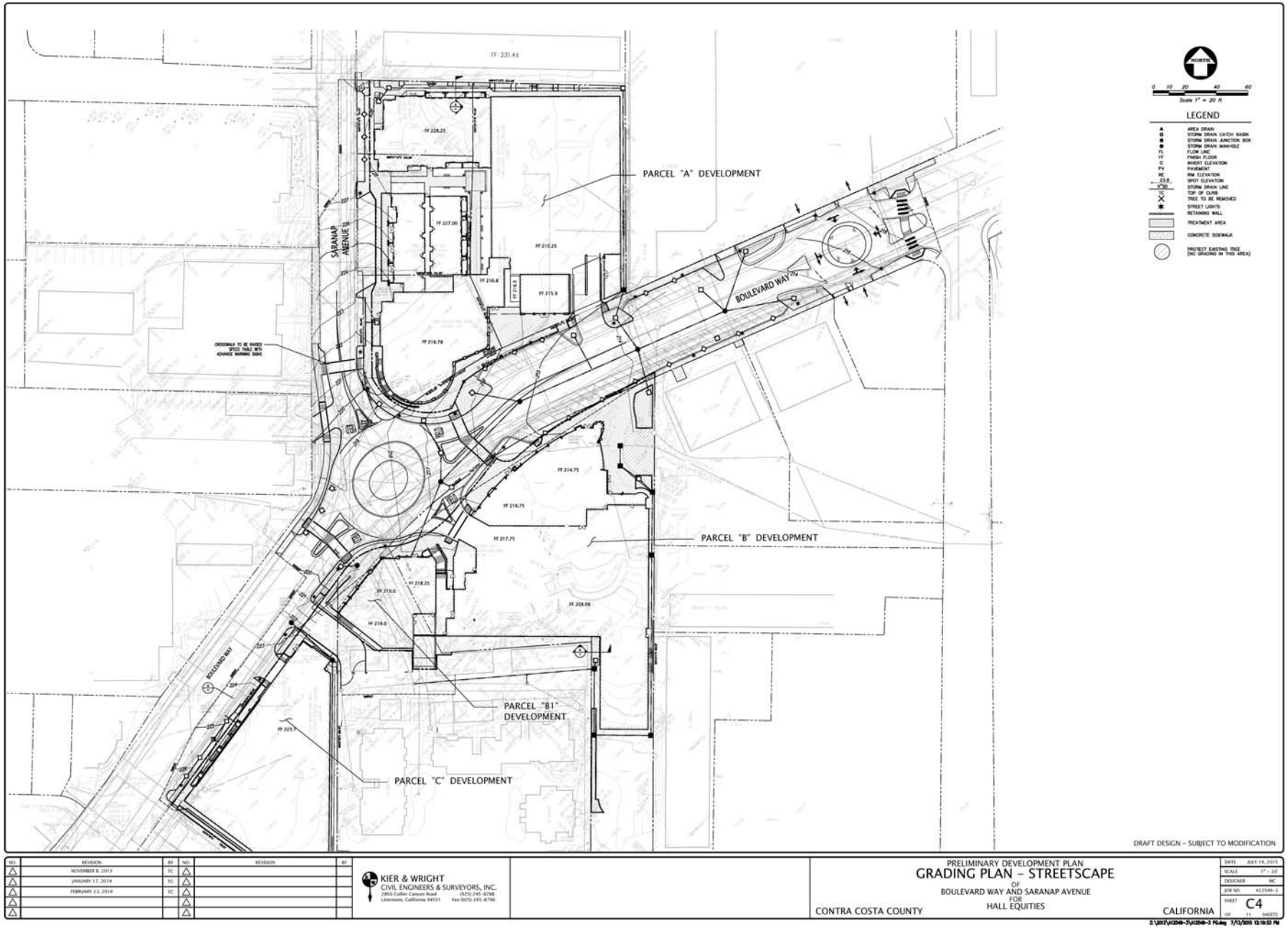
Introduction

This memorandum is a follow-up from our July 22 meeting with County Public Works/Planning staff related to vehicle parking along Boulevard Way within the proposed project frontages. As you know, the currently proposed project streetscape plan for the mitigated alternative would provide diagonal parking spaces along Boulevard Way, which would calm traffic through the project frontage corridor especially when combined with proposed lane reductions, roundabout, and traffic circle (see Figure 1--Saranap Village Streetscape). These diagonal parking spaces would be conventional or "head-in" spaces. When leaving the spaces, motorists would be required to back out into the eastbound or westbound through-lane on Boulevard Way and continue on their way. These spaces would be similar to the head-in angled parking spaces that exist in numerous locations throughout the County. The diagonal parking spaces located in downtown Walnut Creek—Locust Street would be a good example.

In our meeting with County staff related to proposed circulation improvements, staff noted that commenters had asked for "reverse-angle" or "back-in" parking spaces rather than "head-in" diagonal parking spaces. County staff asked whether reverse angle parking would benefit bicycle circulation by allowing parked motorists to better see both vehicles and bicyclists when leaving their parking spaces. In response to this inquiry Omni-Means has researched the following:

- General characteristics and premise of reverse angle parking;
- The advantages and disadvantages of installing reverse angle parking,
- The role of back-in angled parking as a component of "complete streets" as it relates to the proposed project streetscape in striking a balance between all users.

In summary, we determined that little data exists about this novel form of parking, and that the data that is available is inconclusive. The literature tends to compare back-in angled parking to parallel parking, whereas the question for both the Saranap Village Project and the Mitigated Alternative is back-in parking compared to head-in parking. The nature of angled parking maneuvers makes it obvious that pulling into the space is easier and safer with head-in parking, while pulling out of the space is easier and safer with back-in parking. Internet sites report that Tuscon conducted a study finding a greater degree of safety for back-in parking than head-in parking, but no details are available about the study so its reliability cannot be assessed. We have found no other empirical data to indicate that one form would present any maneuverability or safety benefits over the other. Given the general novelty of the back-in maneuver, and the



Project Streetscape Plan

North

omni-means

figure 1

fact that Contra Costa County in particular has no back-in angled parking, it can be assumed that drivers would be unfamiliar with the setup, would require more time to accomplish parking, that looking backwards before backing into a space would be no easier than looking backwards before backing out of a space, and that the back-in setup would require a greater degree of driver attention to accommodate other vehicles, bicycles and pedestrians, than the head-in angled parking with which drivers are familiar.

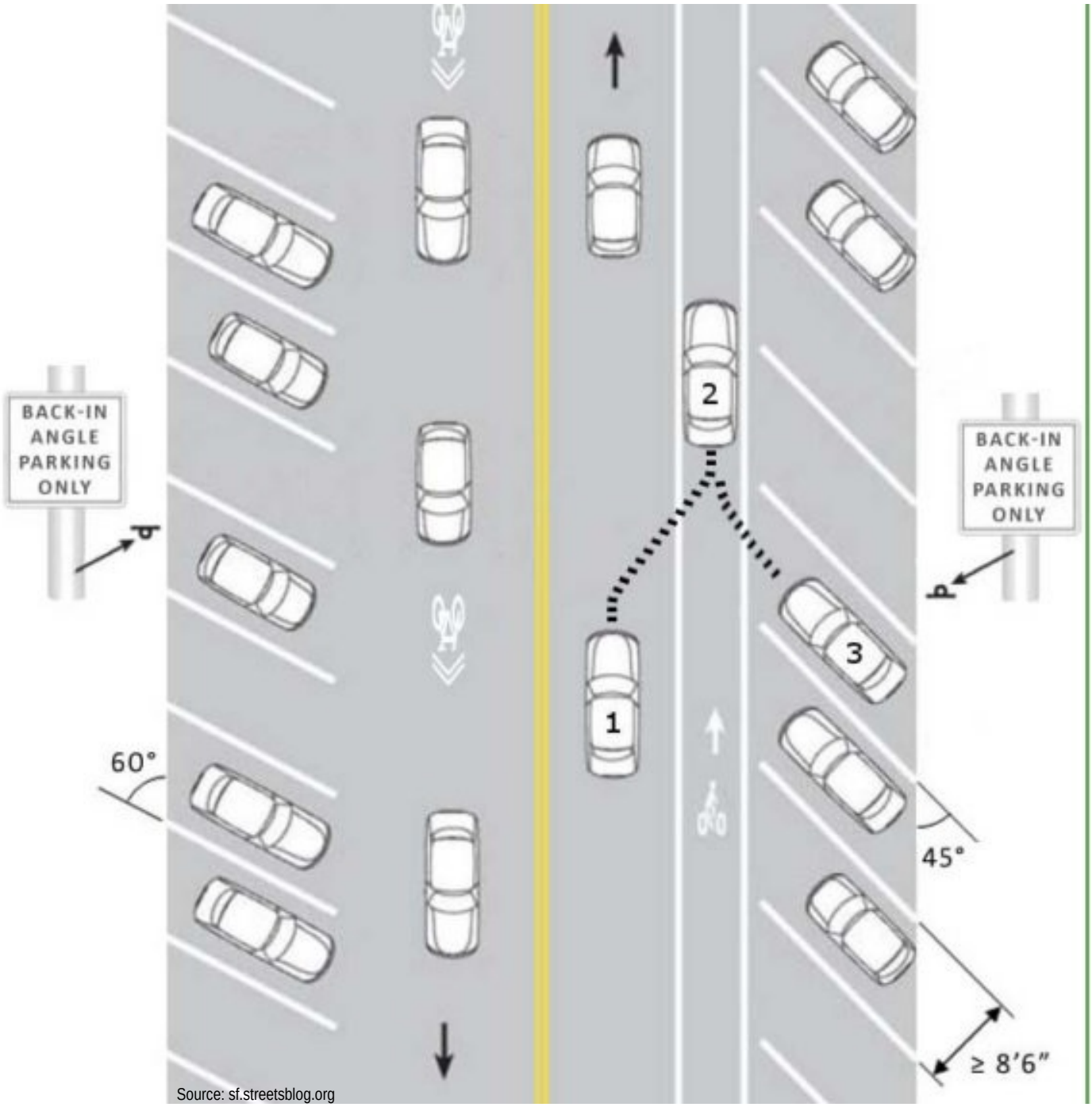
Reverse Angle Parking; General Characteristics

The design of reverse angle parking is like conventional diagonal "head-in" parking with respect to overall design and striping. Depending on the amount of parking required, the typical dimensions are 60-degree or 45-degree angle stalls that are 10-12 feet wide and approximately 20-feet deep [measured perpendicular to the curb] (see Figure 2—Reverse Angle Parking Dimensions). However, for back-in parking, since motorists are backing into the diagonal spaces, care must be given to the adjacent face-of-curb for the additional overhang due to the rear of vehicles. The vehicle overhang must not encroach into the pedestrian areas, light posts, and/or raised landscaped areas. This would be particularly true where outdoor dining areas or sidewalk tables are present, which would result in people sitting and standing closer to tail pipe exhaust. As the Pedestrian and Bicycle Safety Center put it:

> Installation and conversion to back-in angle parking requires careful site planning to ensure that the car stops before encroaching into the pedestrian space. Engines should not idle as tailpipe emissions are now directed to the sidewalk, which is particularly undesirable near a sidewalk cafe or other sensitive location. (See U.S. EPA listing of state and local communities with anti-idling laws at http://www.epa.gov/smartway/partnership/logistics.htm). The change should be publicized prior to implementation, as people are more likely to accept a program that they understand. A learning curve should be expected, thus parking a city vehicle in one of the spaces each morning can help drivers understand the action.

Accordingly, extensive planning and additional government action is required to make back-in parking a safe and effective strategy.[i]

Studies conducted on reverse angle parking indicate that this method of on-street parking is typically installed on minor streets. ADT volumes on these streets typically ranged from 3,000-6,500 ADT (two-lane roadways).[ii] The idea is that lower ADT volumes on two-lane streets is preferred for installation of reverse angle parking to promote overall safety. No ADT volume threshold was sighted where reverse angle parking could not be installed. However, higher ADT volumes have been recorded on other facilities; typically on one-way streets with three or more travel lanes or two-way streets with a minimum of four travel lanes. The Pedestrian and Bicycle Safety Center recommends that "As a general rule, back-in angle parking should be installed on side streets first."[iii]



Source: sf.streetsblog.org

Reverse Angle Back-In Parking Dimensions

omni-means

figure 2

Reverse-Angle Parking; California

Within the State of California, reverse angle parking is rare, and has been installed in only a limited number of cities including Chico, Ventura, and San Francisco. In addition, both the Cities of San Francisco and Chico have only installed the reverse-angle parking on one side of the street. Specific to the City of San Francisco, the San Francisco Municipal Transportation Authority (SFMTA) installed reverse angle parking on a segment of John Muir Drive in January, 2013 (one of four locations in the City where reverse angle parking has been installed). The one-mile stretch of roadway extends between Lake Merced Avenue and Skyline Boulevard and provides reverse-angle parking on segment of its west side for approximately 1,350 feet. In this roadway segment, John Muir Drive is approximately 60 feet curb-to-curb with "reverse-angle" parking (west side only), Class II bike lanes on both sides of the street, two travel lanes, and parallel parking (east side only). The posted speed limit is 30 mph in this segment. The west side of John Muir Drive provides access primarily to residential (multi-family) units and the east side of the street provides access to the Pacific Rod and Gun Club. In this area, pedestrian facilities are located on both sides of the street.

On this segment of John Muir Drive, when motorists begin to access either the reverse angle parking on the west side of the street, or the parallel parking on the east side,, they must stage and stop directly in the Class II bike lane before backing into the parking stalls to avoid through-traffic on John Muir Drive. Anecdotal comments related to the installation of the reverse angle parking along John Muir Drive indicate generally positive reviews. However, a substantial number of comments were negative. One resident noted that back-in parking simply trades the ease of pulling out for the ease of pulling in, stating "It is slightly harder pulling in, and way easier pulling out when compared to nose-to-curb parking." However, another resident stated "Let's not be completely blind here…while exiting appears safer (although not sure there is data to support this claim), the backing-in procedure requires much more attentiveness and skill than normal pull-in spaces."

Other streets in San Francisco where reverse angle parking has been installed (discontinuous segments) include Townsend Street between 7th Street and King Street, Illinois Street between 16th and 22nd Streets, and adjacent to the Bayview Police Station off Williams Avenue. Discussions with SFMTA staff indicate that reverse angle parking was installed primarily to provide greater sight lines between motorists exiting a parking space and bicyclists riding in Class II bike lanes immediately adjacent to the parking spaces. Staff did not indicate if there was a proportional decrease or increase in bicycle/vehicle conflicts (or did not have follow-up data at this time). However, staff inferred that the goal was to improve bicycle safety along John Muir Drive and other areas where it has been installed.[iv]

In addition to San Francisco, the City of Chico has installed reverse angle parking near its City Plaza. City Plaza is bordered by Main Street and Broadway (generally on the east and west sides of the plaza), which are one-way streets with three travel lanes. These streets have a total of twenty (20) back-in angled parking spaces on the sides of the streets that front City Plaza, with parallel parking on the opposite side of the street. The posted speed limit is 25 mph for both roadways. The other two streets bounding the Plaza (W. 4th and W. 5th) have two travel lanes with two-way traffic flow and provide parallel parking along both sides of the street.

Where reverse angle parking is present, three signs per block have been installed along each frontage indicating "Back-In Parking Only."

Mechanics of Reverse-Angle-Parking

The data describing how vehicles access the reverse-angle parking stalls indicates the following: there is a three-step process for motorists to maneuver into a reverse angle parking stall as follows:

- When approaching a reverse angle parking space, slow down and activate your right turn signal;
- Pull your vehicle beyond the parking space and stop;
- Reverse into the parking space.

The mechanics of reverse-angle parking are shown in Figure 3—Reverse Angle Back-In Parking Illustration. Typically, these instructions are placed on a signs in the parking areas to assist motorists new to the concept (see Figure 4—Back-in Parking Sign). However, other areas with reverse-angle parking merely install signs that indicate (Back-In Angle Parking Only).

Related to physical maneuvers of actually backing-in to the reverse angle parking spaces, comparisons are often made to the advantages of back-in angled parking over pulling into standard parallel parking spaces. One of the main advantages stated is that it takes longer for most people to parallel park than to park in reverse-angle spaces. In addition, reverse angle parking has fewer steps than parallel parking. With parallel parking, motorists must back their vehicle into the space and then maneuver the vehicle within close proximity to the curb. By contrast, motorists accessing reverse angle parking merely have to stop and back their vehicle into the parking space (theoretically in one movement).[v]

However, other studies indicate a certain "learning curve" when motorists first encounter reverse angle parking for the first time.[vi] The maneuver to back into the space is similar to learning how to parallel park. However, once the maneuver is learned it requires fewer steps to pull your car into the reverse angle parking space than into a parallel parking space. There appears to be very little data on the actual amount of delay that is caused to through motorists on the street having to wait for someone to back into a parking space. Again, the time comparisons are made to parallel parking and how maneuvers to park in reverse angle parking are more efficient.

No data was available to compare back-in parking to head-in parking in terms of overall time taking into consideration both the pull-in and the pull-out maneuvers. In general, back-in parking trades the ease and safety of being able to pull out head first for the ease and safety of being able to pull in head first for front-in angled parking. As a matter of reference, the actual vehicle delays on Boulevard Way as a result of proposed diagonal "head-in" parking were quantified by Fehr & Peers. [vii] Field observations were conducted on standard diagonal parking maneuvers along Moraga Way in Orinda and Locust Street in Lafayette. Vehicles were timed backing out of the diagonal parking stall and moving forward in the travel lane. The average time of these movements took 7.8 seconds. Applying these average parking maneuver delays to cumulative plus project directional PM peak hour volumes along Boulevard Way for the analysis of the original EIR "Project"; it was calculated that would be an average of one (1) car queue on Boulevard Way while a car backs out of proposed diagonal parking space. The analysis made a conservative assumption that the turnover rate for proposed diagonal parking

Reverse Angle Back-In Parking Illustration

omni-means

figure 3

Source: hampdenhappenings.org

Reverse Angle Back-In Parking Sign

omni-means

figure 4

spaces would occur every 30 minutes. Based on the number of parking spaces then proposed (eastbound direction 23 spaces), there would be 46 parking maneuvers or 359 seconds of delay through the Boulevard Way corridor. These delays would equate to less than one second per vehicle per hour on Boulevard Way. As demonstrated in the report, the time is sufficient for cars to back out of the head-in spaces given the projected traffic volumes on Boulevard Way, resulting in a safe and efficient situation. Because the Mitigated Alternative proposes less development and therefore less traffic than the Project, there would be even more time between cars for drivers to back out of the head-in angled parking spaces proposed in the Mitigated Alternative, resulting in a similar or better level of safety.

No similar research has been conducted on vehicle delay associated with reverse angle diagonal parking maneuvers. The Pedestrian and Bicycle Information Center reports that "Tucson tracked data for bicycle/car crashes before and after installing back-in angle parking, and found an average of three to four crashes per month with front-in angle parking compared to zero reported bicycle/car crashes for the first four years following implementation of back-in angle parking."[viii] However, we were unable to determine what caused such a high number of crashes in Tucson before the conversion to reverse angle parking.

Reverse Angle Parking; Advantages and Disadvantages

The research conducted on the installation of reverse-angle parking is primarily skewed towards its positive impact and the advantages over s parallel parking. The advantages are primarily tied to overall visibility and safer bicycle travel through the parking areas. Some the primary advantages/disadvantages to installing reverse angle parking would be as follows:

Advantages:[ix]

- Safer, increased visibility when driver pulls out of the parking space; due to the forward facing vehicle towards traffic flow motorist have better visibility to look around parked vehicles. This would especially be true of large SUV-type vehicles or vehicles with tinted windows.

- Improved opportunity for eye contact and sight lines between motorists leaving the parking space and approaching roadway traffic. This would include both approaching vehicular through-traffic and bicyclists;

- More efficient entry of a parked vehicle into through-traffic flow;

- More efficient than parallel parking (arguably);

- Motorists loading and/or unloading their vehicles can do it in a safer manner since their trunks and doors are situated at or pointing towards the curb/sidewalk areas. This would include increased safety for young children exiting/entering vehicle;

- Potential for a reduction in the number of vehicular/bicycle accidents compared to standard diagonal "head-in" parking, though the parameters of that study are not known (see discussion above).[x]

Disadvantages:

- Head-in parking allows the motorist to pull into the parking space in a single motion with the flow of traffic. Reverse angle parking requires motorists to advance past the parking space, stop in the through-lane, and back into the space. If a motorist fails to signal when parking, a trailing vehicle may be unaware of the motorist's intentions and be following too close thus causing extended vehicle delay;

- Reverse angle parking requires visual acuity and skill to back in the parking space and may increase the likelihood of sideswipe accidents associated with adjacent (parked) vehicles. In addition, reverse angle parking can take extra time due to motorist not getting the angle correct on the first attempt and having to adjust the angle of their vehicle to fit into the parking space (thus delaying through-traffic);

- Reverse angle parking can be difficult to enforce. For instance, three months after installing reverse angle parking (and increasing the number of instructional signs), the City of Boulder still experiences many drivers pulling into the parking stalls with the front of their cars facing the curb. This is especially attractive for motorists traveling in the opposite direction (opposing lane) and pulling across the travel lane into the reverse angle parking spaces;[xi]

- Reverse angle parking may reduce patronage of adjacent businesses. Businesses in Austin estimated an approximate 20% reduction in business activity due to patrons not wishing to park in reverse-angle spaces;[xii]

- Reverse angle parking results in vehicle exhaust being directed toward adjacent private business and sidewalk areas, while head-in parking keeps exhaust directed toward the public street, where people are not congregating;

- Reverse angle parking requires a 3-4 foot buffer zone adjacent to the curb due to the rear of vehicles typically having a longer overhang, taking up substantially more space than head-in parking and requiring a substantial amount of typically private property to be used to accommodate public street parking. The vehicle overhang must not encroach into the pedestrian areas, light posts, and/or raised landscaped areas.xiii This would be particularly true where outdoor dining areas or sidewalk tables are present. Additional protections preventing drivers from accidentally backing into landscaping or sidewalk areas where pedestrians may be present would be prudent. These would typically involve vehicle "bump stops" in the parking spaces and/or metal bollards on the sidewalk to prevent vehicle from extending too far into the landscaping or sidewalk areas.

- Reverse angle parking requires additional enforcement activities, and entails a substantial learning curve.

- Reverse angle parking is recommended for minor side streets, meaning streets with little activity, especially when first introduced to a community. Boulevard Way is not a prudent location for experimenting with the first instance of reverse angle parking in Contra Costa.

There are clearly advantages and disadvantages to installing reverse angle parking depending on the roadway type, travel speeds, adjacent uses, and design factors (limits). Overall, the installation of reverse angle parking may provide increased safety for bicyclists by providing motorists with better sight lines when pulling forward out of the parking space. However, the concept of reverse angle parking would appear quite new to the majority of motorists and based on available data there would seem be a steep learning curve with continued enforcement issues. In addition, the majority of California cities where reverse angle parking has been installed included no additional traffic calming measures to increase overall safety for bicyclist and pedestrians (unlike the proposed project). Therefore, it would seem that when considering the potential of reverse angle parking that there needs to be careful review of the unique roadway or project factors specific to each location and the increment of additional safety that would make it a successful when compared to standard "head-in" diagonal parking.

Saranap Village Implementation of Contra Costa County's Complete Streets Concept.

The Transportation and Circulation Element of the Contra Costa County General Plan discusses the fundamental concepts that shape the element. Some of the key fundamentals include the concept of "complete streets." To this end, the General Plan states the following:[xiv]

"Streets should be designed, maintained according to the 'Complete Streets' philosophy, which accomplishes the following:

- Specifies that "all users" includes pedestrians, bicyclists, transit vehicles and users, and motorists, of all ages and abilities;
- Aims to create a comprehensive, integrated, connected network;
- Recognizes the need for flexibility: that all streets are different and user needs will be *balanced*."

Based on the above concepts, the proposed Saranap Village Project and the Mitigated Alternative both attempt to strike a balance between all modes of transportation along the Boulevard Way frontage and overall streetscape plan. This would include the construction of wider pedestrian sidewalks and pedestrian crosswalks (including speed table), reduction in vehicle travel lanes, a roundabout at the Saranap Avenue/Boulevard Way intersection, diagonal "head-in" parking spaces on Boulevard Way, pedestrian bulbouts/crosswalks, traffic circle/landscaped median just west of the Flora Avenue/Boulevard Way intersection, and new east-west bus transit stops on Boulevard Way. The combination of these traffic calming measures (in particular the lane reductions, roundabout, diagonal "head-in" parking, and traffic circle) are directly aimed at reducing the speed of vehicle travel within the project frontage to 25 mph or less.

With respect to bicycle travel along the corridor, Boulevard Way is designated as a Class III bike route in the County's Bicycle and Pedestrian Plan. The County's preferred route to link the Lafayette-Moraga Trail in Lafayette with the Iron Horse Trail in Walnut Creek would provide for bicycle travel along Olympic Boulevard, substantially south of the proposed project site. Therefore, bicycle traffic along Boulevard Way would primarily be generated from local neighborhoods and proposed project uses. Combined with proposed project traffic calming measures to reduce vehicle speeds along Boulevard Way and lane "sharrows," bicycle travel would be improved through the project frontage.

The reduction of vehicle speeds is key to increasing safety and reducing bicycle/vehicle conflicts. With both bicyclists and vehicles traveling at approximately the same travel speeds, the potential for accidents is reduced. In this way, the proposed project balances the needs of pedestrians, bicyclists, vehicles, and transit through the Boulevard Way corridor. In addition, bicyclists traveling along Boulevard Way would be expected to ride in the vehicle travel lane (through the roundabout) and through the project frontage travel lanes indicated with "sharrows".

Conclusions

To achieve the "complete streets" goal of the County in trying to balance all modes of travel through the project develop corridor along Boulevard Way, a combination of traffic calming measures would be installed to reduce overall vehicle speeds. The reduction in vehicle speeds would help to decrease potential bicycle/vehicle conflicts through the corridor. With other additional traffic calming measures and the attendant increase in bicycle safety, the incremental benefit for reverse angle parking becomes less. Proposed diagonal "head-in" parking spaces also provide a familiar, business-friendly form of parking that motorists easily recognize. The proposed project traffic calming measures would provide an increased level of safety for bicyclists and help prevent the typical bicycle/vehicle conflicts associated with diagonal "head-in" parking without the potential design issues associated with reverse angle parking (financial, maintenance, and enforcement). Accordingly, the Saranap Village Project and the Mitigated Alternative implement the County's complete streets concept in a way that accommodates all modes of travel.

---

[i] Pedestrian and Bicycle Information Center, Back-in Angle Parking: What is it, and When and Where is it Most Effective, 2015. Available at http://www.pedbikeinfo.org/data/faq_details.cfm?id=3974, visited August 13, 2015. The Pedestrian and Bicycle Information Center is funded by the Federal Highway Administration and housed within the UNC Highway Safety Research Center in Chapel Hill, NC.

[ii] Nelson/Nygaard Consulting Associates, Back-in/Head-out Angle Parking, January, 2005.

[iii] Pedestrian and Bicycle Information Center, Back-in Angle Parking, supra.

[iv] Mr. Matt Laskey, Traffic Engineer, San Francisco Municipal Transportation Agency (SFMTA), Reverse angle parking on John Muir Drive, Personal communication, August 13, 2015.

[v] DailyCamera News, Back-in angled parking: Boulder assessing impact of new approach, November 3, 2013.

[vi] Pedestrian and Bicycle Information Center, Back-in Angle Parking, supra.

[vii] Fehr & Peers, Response to Public Works Comments Regarding Saranap Village, Memorandum to Mr. Will Nelson (CC County Conservation & Development) from Ryan McClain, PE, May 9, 2014.

[viii] Pedestrian and Bicycle Information Center, Back-in Angle Parking, supra.

[ix] FellsProspect.Org, Reverse Angle Parking, FAQ, August 2008.

[x] Pedestrian and Bicycle Information Center, Back-in Angle Parking, supra.

[xi] DailyCamera News, Back-in angled parking: Boulder assessing impact of new approach, November 3, 2013.

[xii] Herald-Tribune, Reverse Angle Parking Not Always Popular, September 8, 2013.

[xiii] Pedestrian and Bicycle Information Center, Back-in Angle Parking: What is it, and When and Where is it Most Effective, 2015.

[xiv] Contra Costa County, General Plan 2005-2020, Transportation and Circulation Element, Chapter 5.5, Existing and Future Transportation Needs, January 18, 2005

This page intentionally left blank

Technical Memorandum

To:	Hall Equities Group	**Date:**	June 23, 2015
Attn:	Reed Onate	**Project:**	Saranap Village DEIR & FEIR Transportation Services
From:	Omni-Means		
Re:	Phase III – Saranap Ave / Boulevard Way Roundabout Feasibility Analysis	**Job No.:**	35-3528-06
		File No.:	C1667MEM009.DOCX
CC:			

Introduction

This technical memorandum performed by Omni-Means presents the peer review of a proposed single-lane roundabout at the intersection of Saranap Avenue and Boulevard Way in Contra Costa County. The roundabout concept, designed by Kier & Wright Civil Engineers & Surveyors Inc, was proposed to improve vehicle circulation for development within the Saranap Village Project. Omni-Means was retained by Hall Equities Group to review the operating conditions for the proposed Saranap / Boulevard roundabout and to recommend improvements that can optimize the design and safety of the intersection. This memo has been prepared to address the following items:

- Review the preliminary layout and future traffic operations of the roundabout at Saranap Avenue and Boulevard Way.
- Identify roundabout design criteria and potential performance deficiencies based on policies and design standards documented in NCHRP Report 672 and the Caltrans Highway Design Manual.
- Propose modifications to the applicant's roundabout design to meet geometric design standards and ensure the safe and efficient operation of the roundabout.

Proposed Roundabout Design and Performance Criteria

The following design criteria were used to analyze the geometrics and safety performance of the applicant's roundabout at Saranap Avenue and Boulevard Way from the preliminary roundabout design exhibit:

- Criteria and methodologies to be consistent with Report 672 of the National Cooperative Highway Research Program (NCHRP) titled Roundabouts: An Informational Guide (Second Edition), Section 6.7 Performance Checks. This document supersedes the original roundabout guide published by the FHWA in 2000.
- Fast Path entry speeds on single lane roundabout approaches should be 25 mph or less.
- The "California Legal" design vehicle from the Caltrans Highway Design Manual, 6th Edition (update September 2014) shall be accommodated on all movements. This

vehicle shall be accommodated such that the tractor portion of the vehicle does not need to mount any truck aprons or encroach onto raised curb features.

- The "Bus-45, motor coach" design vehicle from the Caltrans Highway Design Manual, 6th Edition (update September 2014) shall be accommodated on all movements. This vehicle shall be accommodated such that it does not need to mount any truck aprons or encroach onto raised curb features.
- Minimum stopping sight distance for posted speed limits should be provided for vehicles approaching roundabout entrances and pedestrian crosswalks.
- Minimum intersection sight distance should be provided for vehicles approaching roundabout entrances and circulating traffic.
- View angles for all legs of the roundabout should be no less than 75 degrees.
- Entry angles for all legs of the roundabout should be between 20 and 40 degrees.

For reference purposes, Figures 1-15 depict the roundabout as proposed in Kier & Wright's initial concept (report pages 5-23).

Proposed Geometrics

Omni-Means was provided preliminary design files and site plan exhibits from Kier & Wright Civil Engineers & Surveyors Inc (March 27, 2015) to assess the proposed roundabout concept at Saranap Avenue and Boulevard Way. The preliminary layout exhibit of the proposed roundabout can be seen in Figure 1.

The Saranap Village Project proposes to redesign Boulevard Way and Saranap Avenue with diagonal parking, modified curb bulb-outs, and a single-lane roundabout. Boulevard Way and Saranap Avenue are designated as collector streets with a posted speed of 30 mph and intersect at a 575 foot radius curve alignment along Boulevard Way.

The proposed single-lane roundabout consists of three approach legs on Saranap Avenue and Boulevard Way with a northbound driveway accessing the proposed Saranap Village parking lot and loading docks. The roundabout's footprint is oval-shaped with a 100-115 foot asymmetric inscribed circle diameter and a uniform 20 foot circulatory roadway width. In conjunction, the asymmetric central island consists of a 60-75 foot diameter and uniform 16 foot wide truck apron.

Raised splitter islands are provided along Boulevard Way and the northbound driveway access to channelize approaching and exiting vehicles into the correct travel lane and create a refuge for pedestrians/bicyclists crossing the roadway. Pedestrian crossings are provided on all legs of the roundabout with crosswalks 10 feet in width. Where crosswalks intersect splitter islands, a 10 foot minimum paved pathway is provided between the travel lanes. To maintain residential driveway access along Saranap Avenue, the southbound approach shortens the splitter island to 15 feet and shifts the pedestrian crossing approximately 60 feet north of the intersection as a mid-block crosswalk. Geometry of a 6 foot minimum sidewalk for pedestrian circulation have been detailed in the proposed concept and is separated from the circulatory roadway by a minimum 4 foot wide planter strip, which meets NCHRP, Caltrans, and American Disabilities Act (ADA) requirements for pedestrian paths at roundabouts.

Due to right-of-way constraints, the applicant's roundabout concept requires that bicyclists traveling through the intersection share the road and traverse the roundabout like a vehicle by taking the travel lane and obeying vehicle traffic rules in the 20-foot travel lane. While a minimum 10' shared-use path (separate) would ordinarily be considered ideal for a roundabout concept, per NCHRP 672, having cyclists travel through the 20-foot circulatory roadway is an accepted practice for single-lane roundabouts since cyclists and motorists will travel at approximately the same speed making it safer for bicyclists to circulate with other vehicular traffic in the roundabout. In addition, "sharrows" pavement markings would be installed on both the eastbound and westbound travel lanes on Boulevard Way and on the north-south travel lanes of Saranap Avenue (both within and outside project frontages) alerting motorists and bicyclists to share the roadway.

Preliminary signing, striping, lighting features, drainage and landscaping features were not provided to Omni-Means due to the preliminary nature of the design.

Traffic Operations and Level of Service (Year 2030)

The proposed traffic operations for the roundabout at Saranap Ave / Boulevard Way were quantified through the determination of "Level of Service" (LOS).[1] LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. The software program SIDRA was used to analyze the proposed roundabout LOS based on a "gap acceptance" model.

Traffic volume forecasts for the study intersection were derived from the CCTA Central County Transportation Model and Saranap Village peak hour ITE project generated trips. As was the case with the analysis of Project traffic, this analysis of the Mitigated Alternative used cumulative traffic volumes derived from CCTA's 2030 model. Year 2030 volumes are slightly greater than the volume of cumulative traffic derived from CCTA's 2040 model as confirmed by CCTA transportation staff, and thus provide a more conservative analysis. Existing Plus Project, Short Term Plus Project, and Year 2030 Plus Project scenarios were analyzed to calculate the expected LOS delay and vehicle queues. Table 1 summarizes the proposed traffic conditions. The SIDRA traffic operation results for each project scenario are attached in the Appendix.

As shown in Table 1, the Saranap / Boulevard roundabout is expected to operate at LOS "A" during the AM and PM peak hour with a single-lane design. The SIDRA analysis confirms that a single-lane roundabout configuration will provide acceptable LOS and sufficient capacity for Existing, Short Term, and Year 2030 plus project scenarios.

---

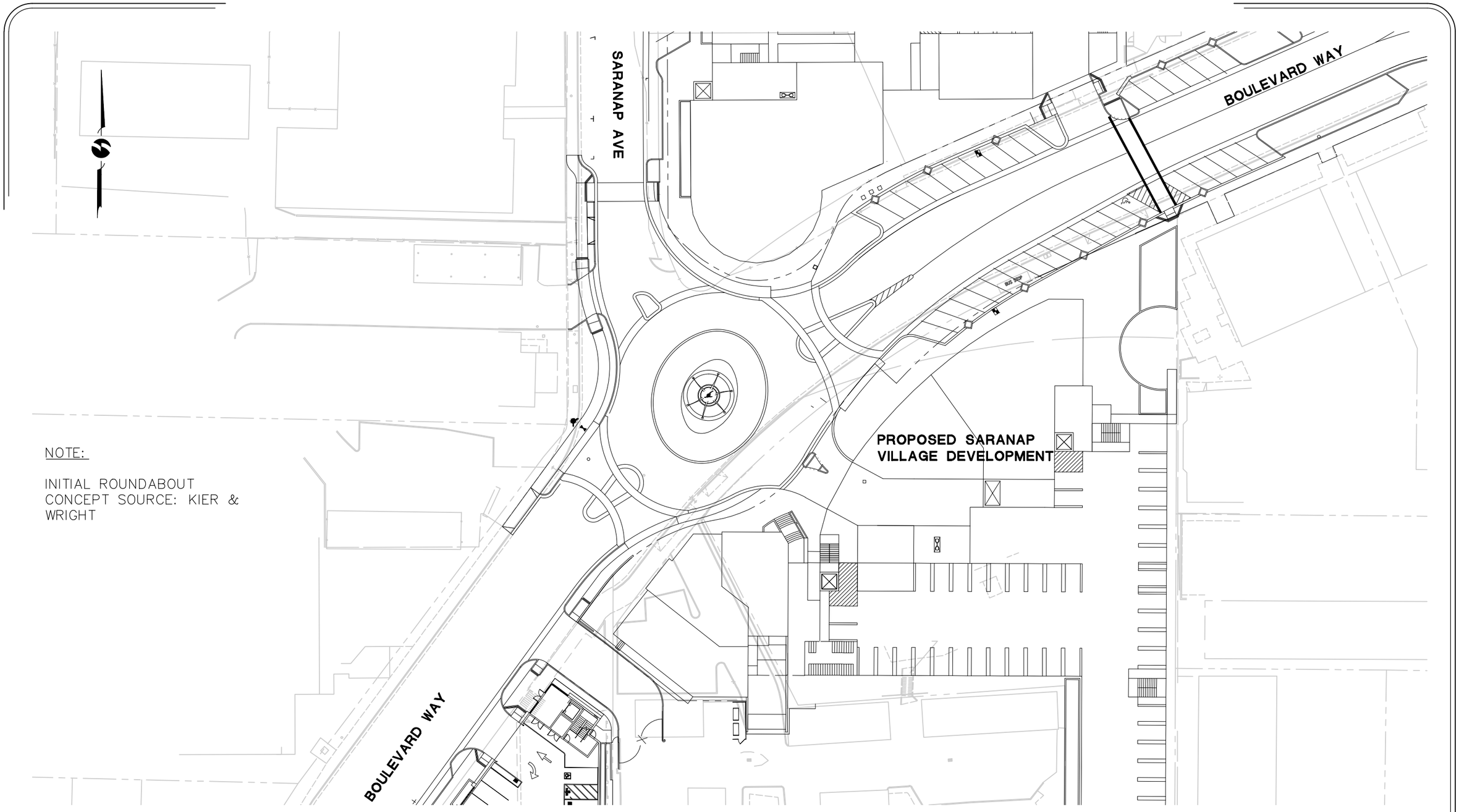
[1] *This LOS analysis reflects higher trip numbers than are projected in the mitigated alternative, because the analysis reflects a model run that used preliminary, more generic trip estimates that have subsequently been refined. The model run, based upon more trips, shows an acceptable LOS; the fewer trips projected for the Mitigated Alternative will necessarily result in the same or improved LOS.*

TABLE 1:TRAFFIC CONDITIONS AND LEVEL OF SERVICE

Scenario	Approach	AM Peak Hour			PM Peak Hour		
		Average Delay (sec)	Level of Service	95% Queue (ft)	Average Delay (sec)	Level of Service	95% Queue (ft)
Existing Plus Project	Northbound Saranap Dwy	5.9	A	5.1	6.3	A	2.8
	Southbound Saranap Ave	9.1	A	13.0	9.3	A	15.6
	Eastbound Boulevard Way	5.7	A	29.4	5.8	A	36.9
	Westbound Boulevard Way	4.7	A	22.0	5.0	A	35.3
	Intersection LOS	**6.0**	**A**	**-**	**6.1**	**A**	**-**
Short Term Plus Project	Northbound Saranap Dwy	6.1	A	5.2	6.5	A	2.8
	Southbound Saranap Ave	9.1	A	13.8	9.3	A	16.3
	Eastbound Boulevard Way	5.7	A	31.9	5.9	A	40.5
	Westbound Boulevard Way	4.7	A	23.9	5.0	A	38.0
	Intersection LOS	**6.0**	**A**	**-**	**6.1**	**A**	**-**
Year 2040 Plus Project	Northbound Saranap Dwy	6.4	A	5.4	6.8	A	2.9
	Southbound Saranap Ave	9.2	A	13.2	9.4	A	16.0
	Eastbound Boulevard Way	5.6	A	36.4	5.8	A	45.7
	Westbound Boulevard Way	4.7	A	24.3	5.0	A	39.9
	Intersection LOS	**6.0**	**A**	**-**	**6.1**	**A**	**-**

Notes:
Level of Service (LOS) delay based on HCM 2010 methodologies
Intersection and approach LOS values are based on average delay for all lanes
SIDRA Standard roundabout capacity and delay model used
Intersection analyzed with 0.95 PHF, 2% Heavy Vehicle, and 1.05 Environmental Factor

FIGURE 1



SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 50'

ROUNDABOUT FEASIBILITY ANALYSIS - OVERVIEW

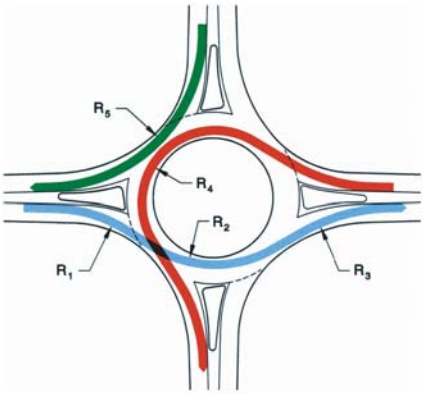
6/17/2015 2:09 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

Fast Path

The “Fastest Path” represents the path that the most aggressive drivers could take through the roundabout and assumes no other traffic to be within the intersection. NCHRP Report 672 indicates that the recommended maximum vehicle entry speeds along the fastest path should be less than 25 mph at single-lane roundabouts. NCHRP Report 672 also indicates that the differential speed between consecutive or conflicting projected fast path speeds should be less than 15 mph.

Fast path speeds are determined for five locations per approach. These include entry speeds (referred to as V1); through movement circulating speeds (V2); exiting speeds (V3); left turn movement circulating speeds (V4); and right turn speeds (V5). Exhibit 1 from NCHRP Report 672 depicts the corresponding fast path movements.

EXHIBIT 1 – ROUNDABOUT FAST PATH MOVEMENTS



Fastest-path speeds for the proposed roundabout at Saranap Avenue and Boulevard Way are provided in Figure 2. The projected fastest-path speeds for each approach are shown below in Table 2.

TABLE 2: PROPOSED VEHICLE FAST PATH SPEEDS

Movement	Northbound Saranap Driveway (N#)	Southbound Saranap Ave (S#)	Eastbound Boulevard Way (E#)	Westbound Boulevard Way (W#)
Entering (V1)	15.9	36.5	25.6	26.3
Circulating (V2)	17.7	12.2	24.0	14.5
Exiting (V3)	19.7	26.6	34.8	29.1
Left Turn (V4)	11.3	11.3	12.8	12.8
Right Turn (V5)	16.0	19.4	19.7	15.0

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

As shown in Table 2, the V1 single-lane entry speeds for the southbound, eastbound, and westbound approaches exceed the 25 mph recommended fast path criteria established from NCHRP 672 for single lane roundabouts. Due to the existing roadway alignment, grade, and driveway constraints, the southbound Saranap Avenue entry geometry does not provide sufficient deflection to slow approaching vehicles before the intersection.

Vehicle Turn Movements

The *AutoTurn* software analysis tool was used to test the maneuverability of large design vehicles through the roundabout. From the 2012 Caltrans Highway Design Manual, attempts were made to accommodate movements among all legs by a California Legal design truck, with truck aprons being mounted only by the trailer and not the tractor. The roundabout also was tested to ensure that the swept path from a 45 foot long motor coach (Bus) was contained within the approach lane and could navigate the roundabout without mounting the central island truck apron.

Additional design vehicle templates were tested to evaluate the driveway access at existing residences and at the proposed Saranap Village project. The design vehicles tested include Contra Costa County Fire Truck, County Garbage Collection Truck, WB-40 Semi-trailer Truck, and a 30’ dual-axle delivery truck. Truck and bus path templates for each intersection leg approach are highlighted in Figures 3 through 13.

Preliminary analysis from the turning templates shown in Figures 2 through 13 identify deficiencies with the current design of the roundabout. The California Legal 50 design truck turning template traversing the roundabout will extend beyond the provided truck apron within the circulatory roadway and will traverse over the curbs at all three approaches.

FIGURE 2

LEGEND:

(X#) – DIRECTION OF TRAVEL, MOVEMENT NUMBER

FASTPATH RADIUS (FEET)

Movement	Northbound Saranap Driveway (N#)	Southbound Saranap Ave (S#)	Eastbound Boulevard Way (E#)	Westbound Boulevard Way (W#)
Entering (R1)	53.0	451.7	181.0	194.6
Circulating (R2)	84.6	31.1	194.2	49.5
Exiting (R3)	91.6	198.7	1000.0	1000.0
Left Turn (R4)	25.0	25.0	35.0	35.0
Right Turn (R5)	53.8	88.4	91.6	45.0

FASTPATH SPEED (MPH)

Movement	Northbound Saranap Driveway (N#)	Southbound Saranap Ave (S#)	Eastbound Boulevard Way (E#)	Westbound Boulevard Way (W#)
Entering (V1)	15.9	36.5	25.6	26.3
Circulating (V2)	17.7	12.2	24.0	14.5
Exiting (V3)	19.7	26.6	34.8	29.1
Left Turn (V4)	11.3	11.3	12.8	12.8
Right Turn (V5)	16.0	19.4	19.7	15.0

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

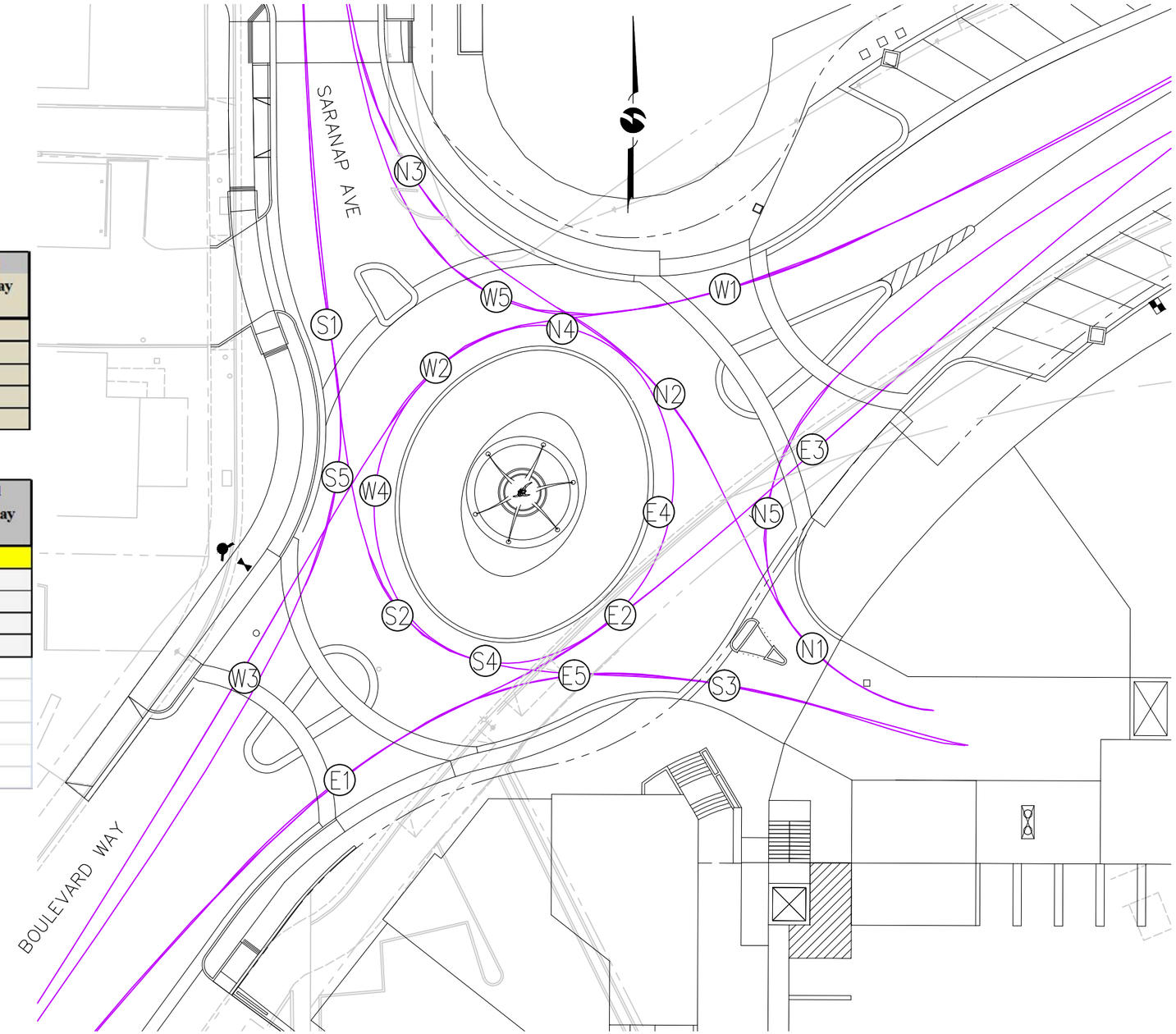
V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT



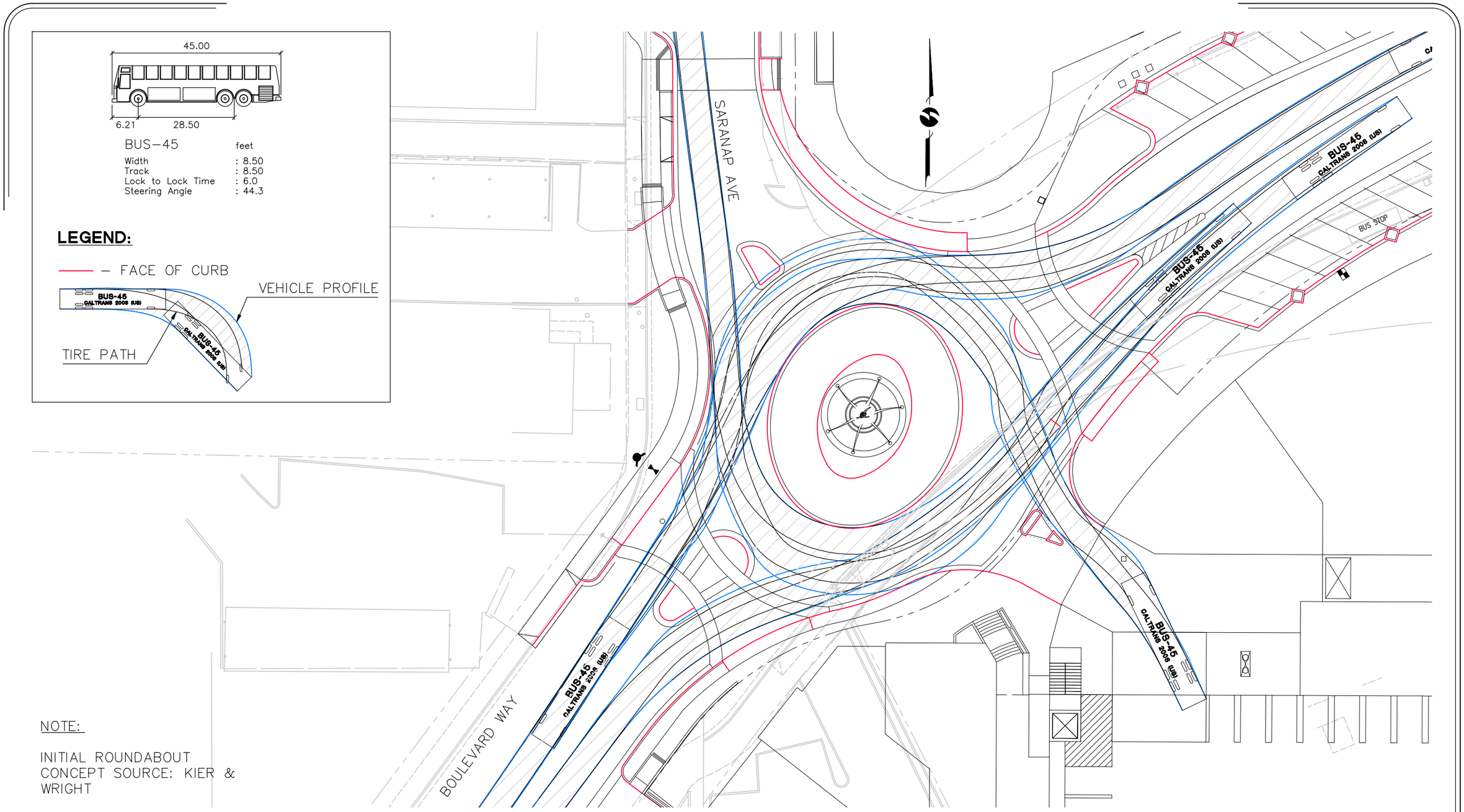
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - VEHICLE FAST PATH

6/17/2015 2:09 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 3



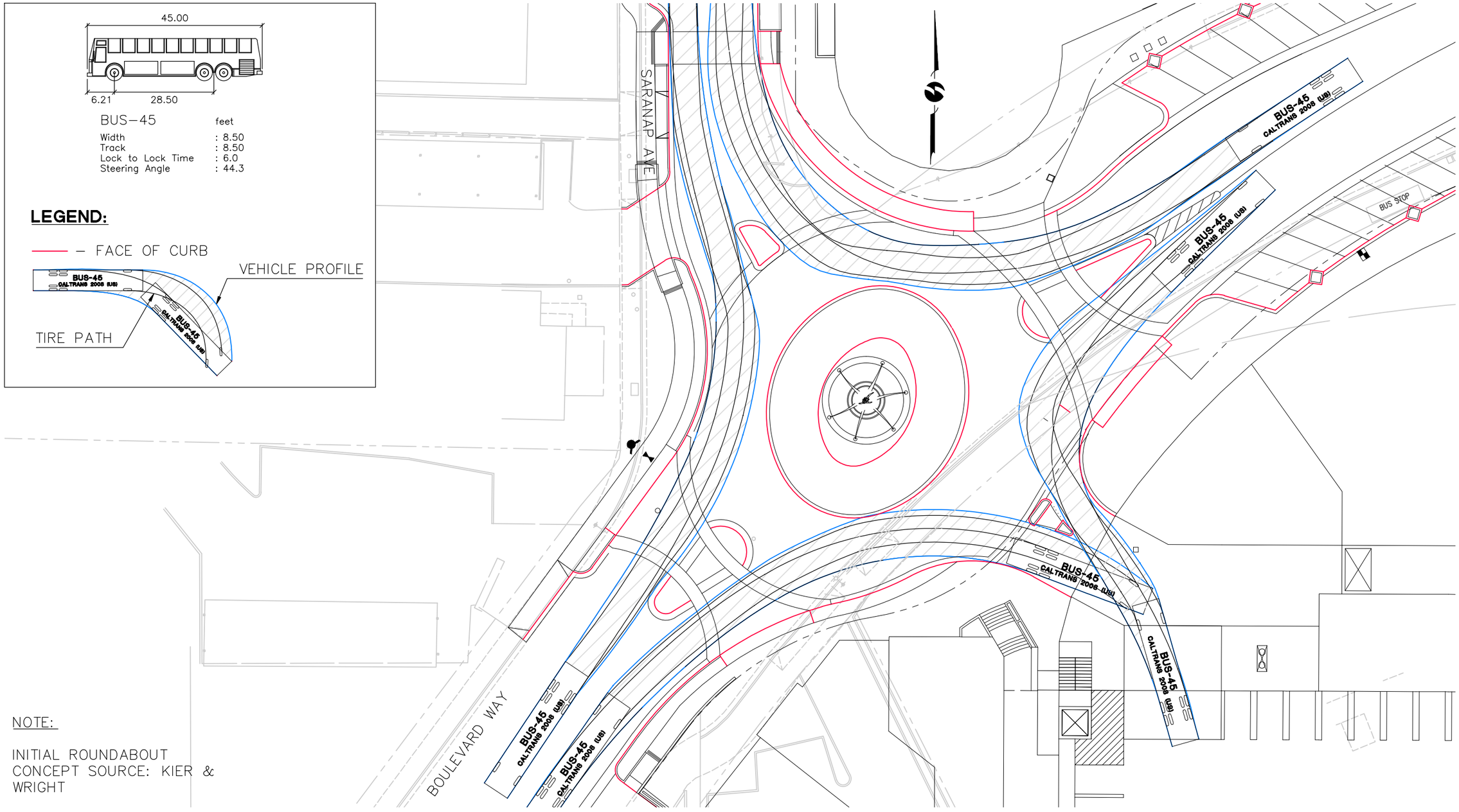
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 40'

ROUNDABOUT FEASIBILITY ANALYSIS - VEHICLE TURNS (BUS-45)

6/17/2015 2:12 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 4



NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT

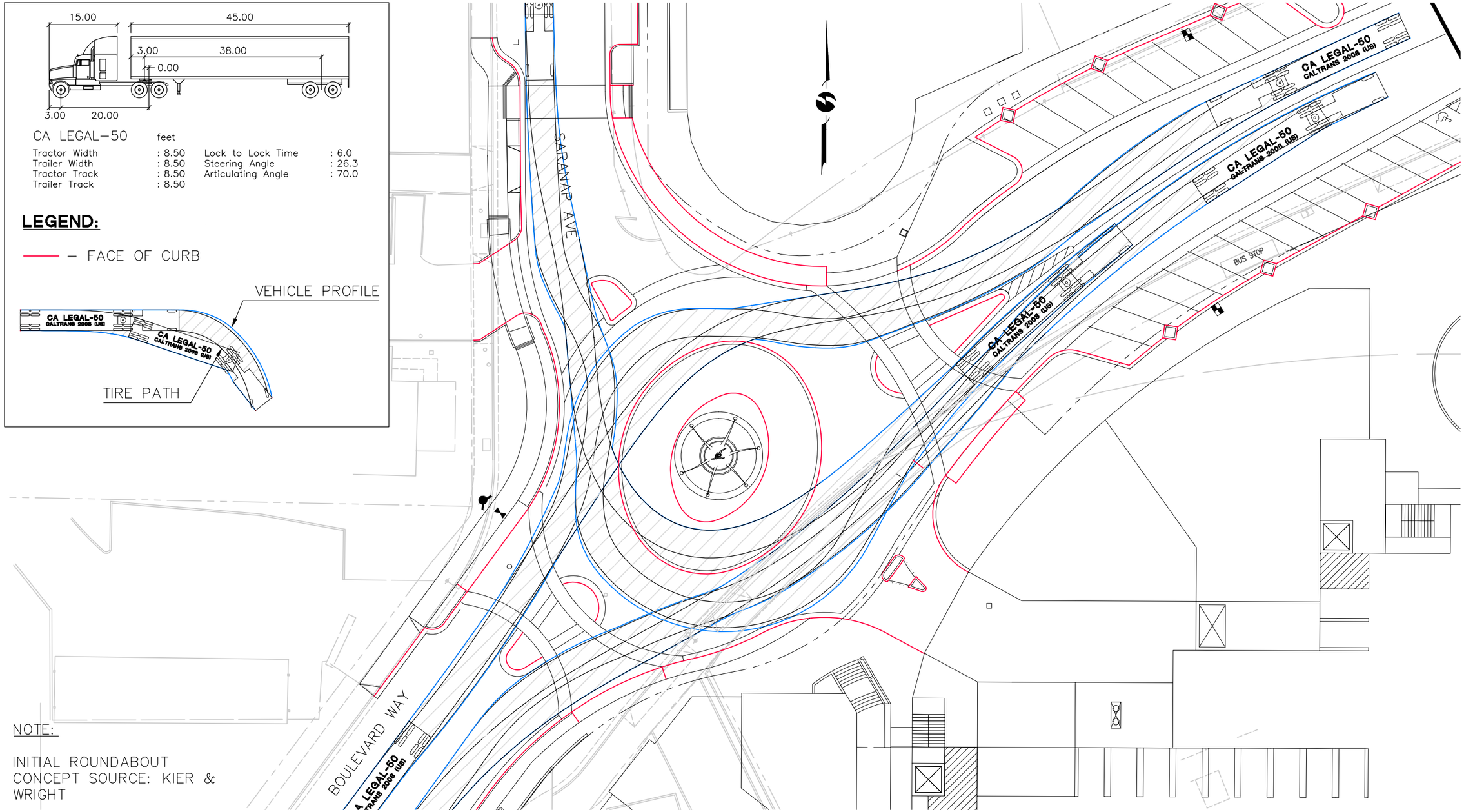
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 40'

ROUNDABOUT FEASIBILITY ANALYSIS - VEHICLE TURNS (BUS-45)

6/17/2015 2:13 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 5



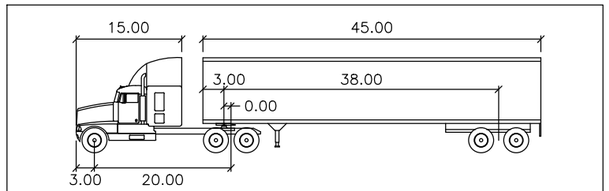
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (CA LEGAL 50)

6/17/2015 2:11 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 6

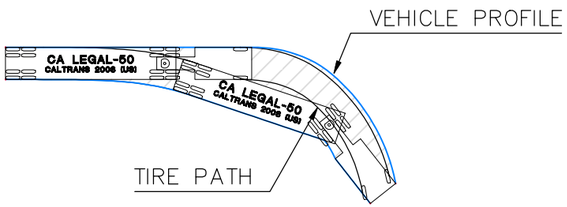


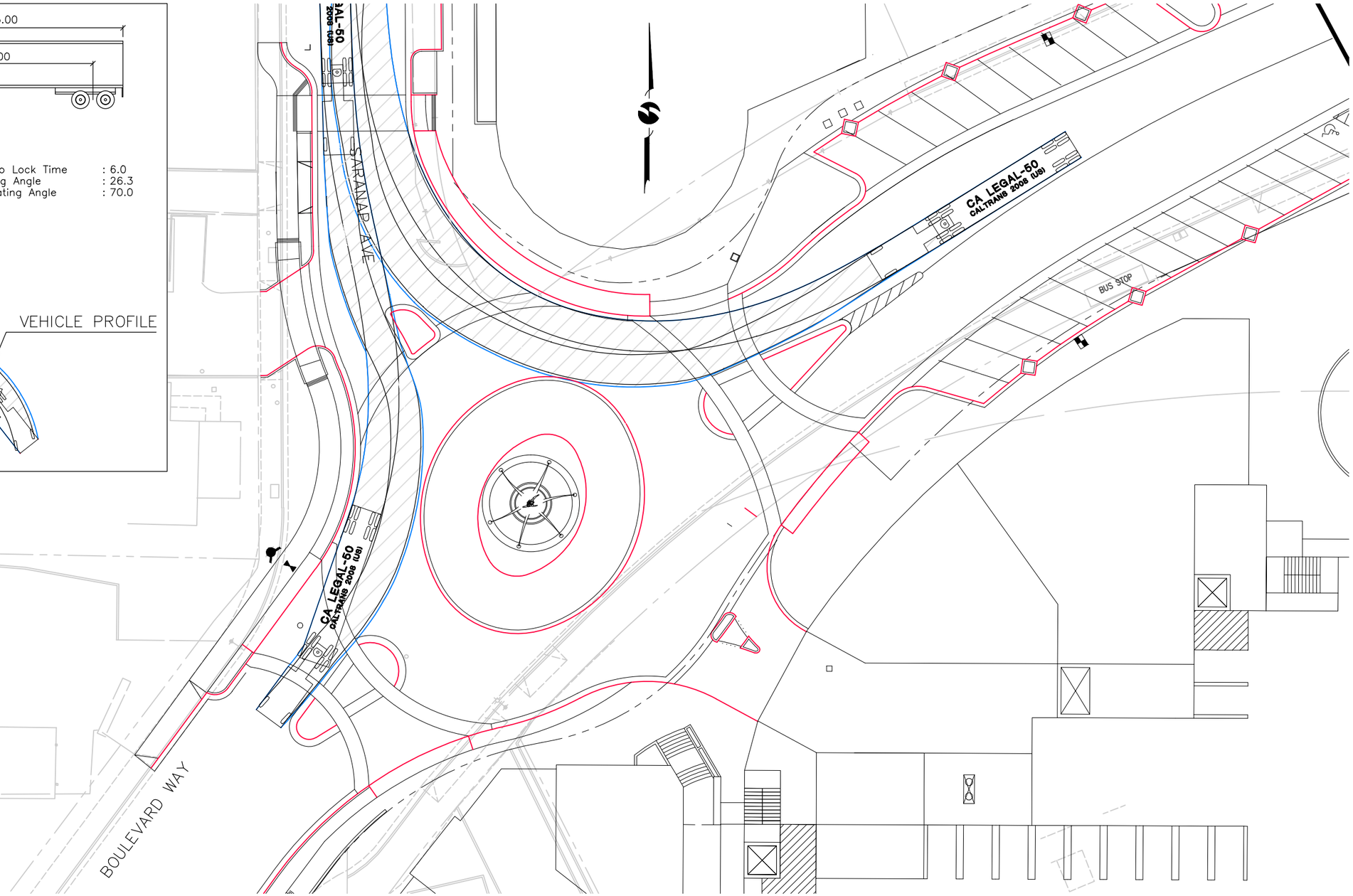
CA LEGAL–50 feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

LEGEND:

— FACE OF CURB





NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT

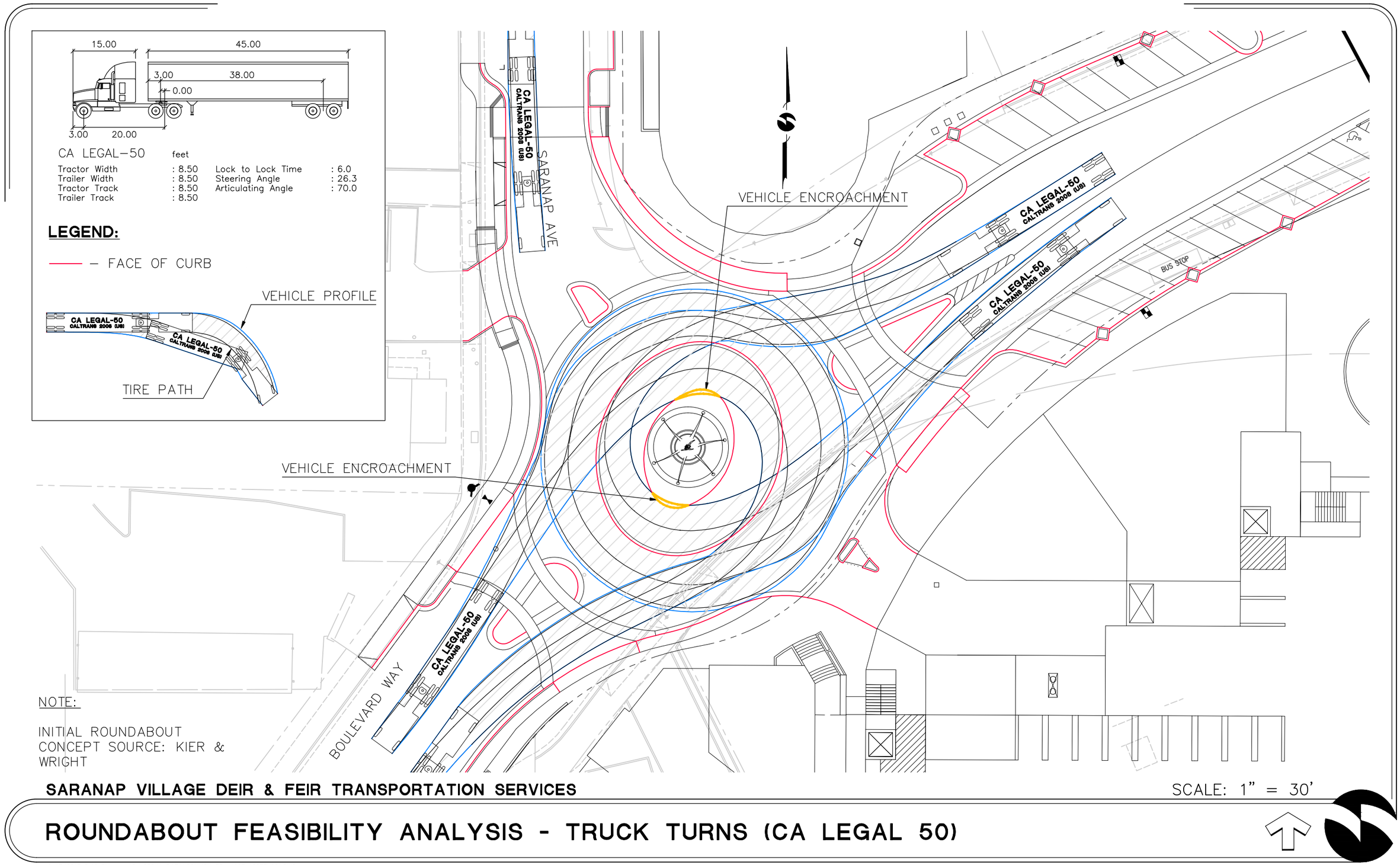
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (CA LEGAL 50)

6/17/2015 2:12 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 7



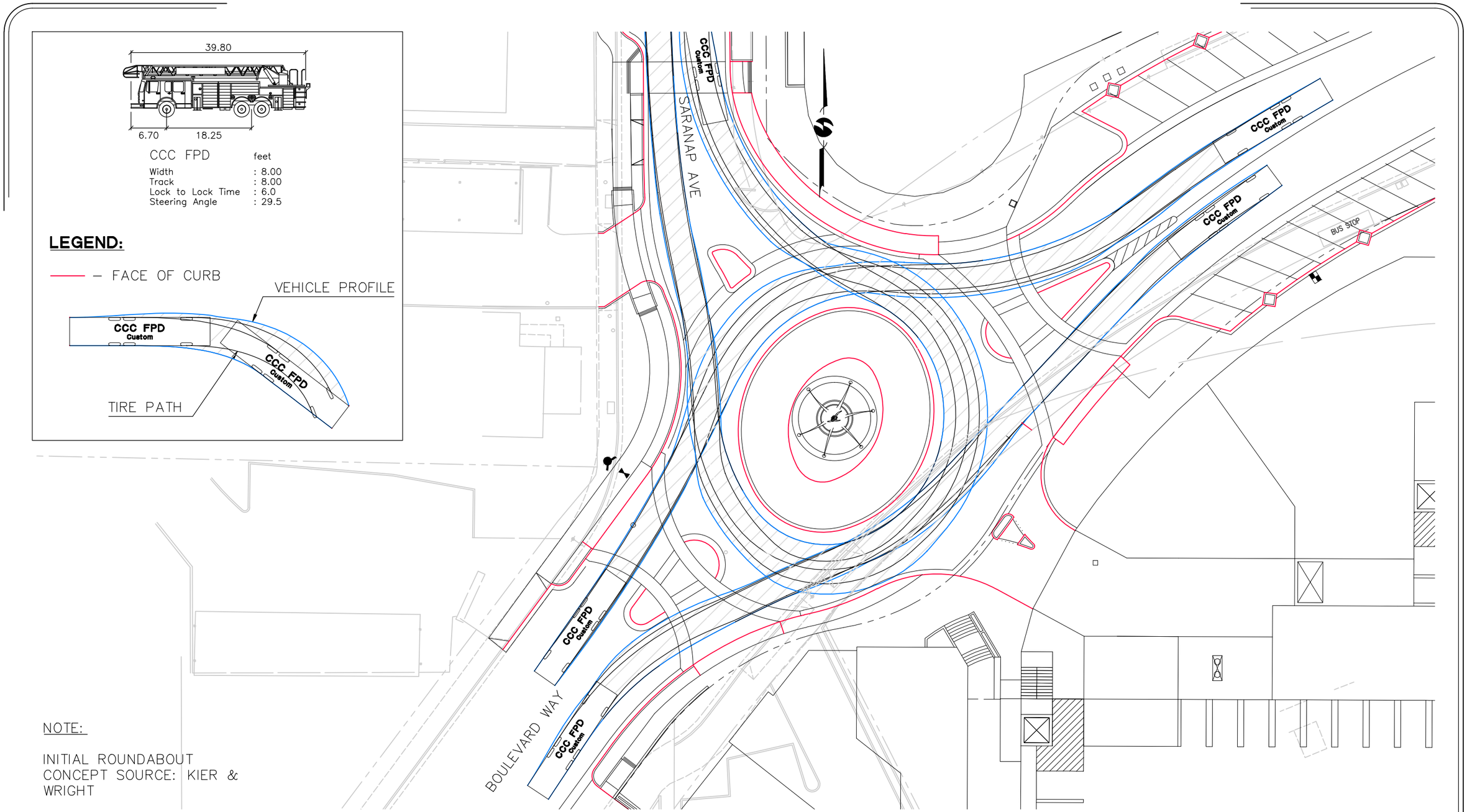
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (CA LEGAL 50)

6/17/2015 2:12 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 8



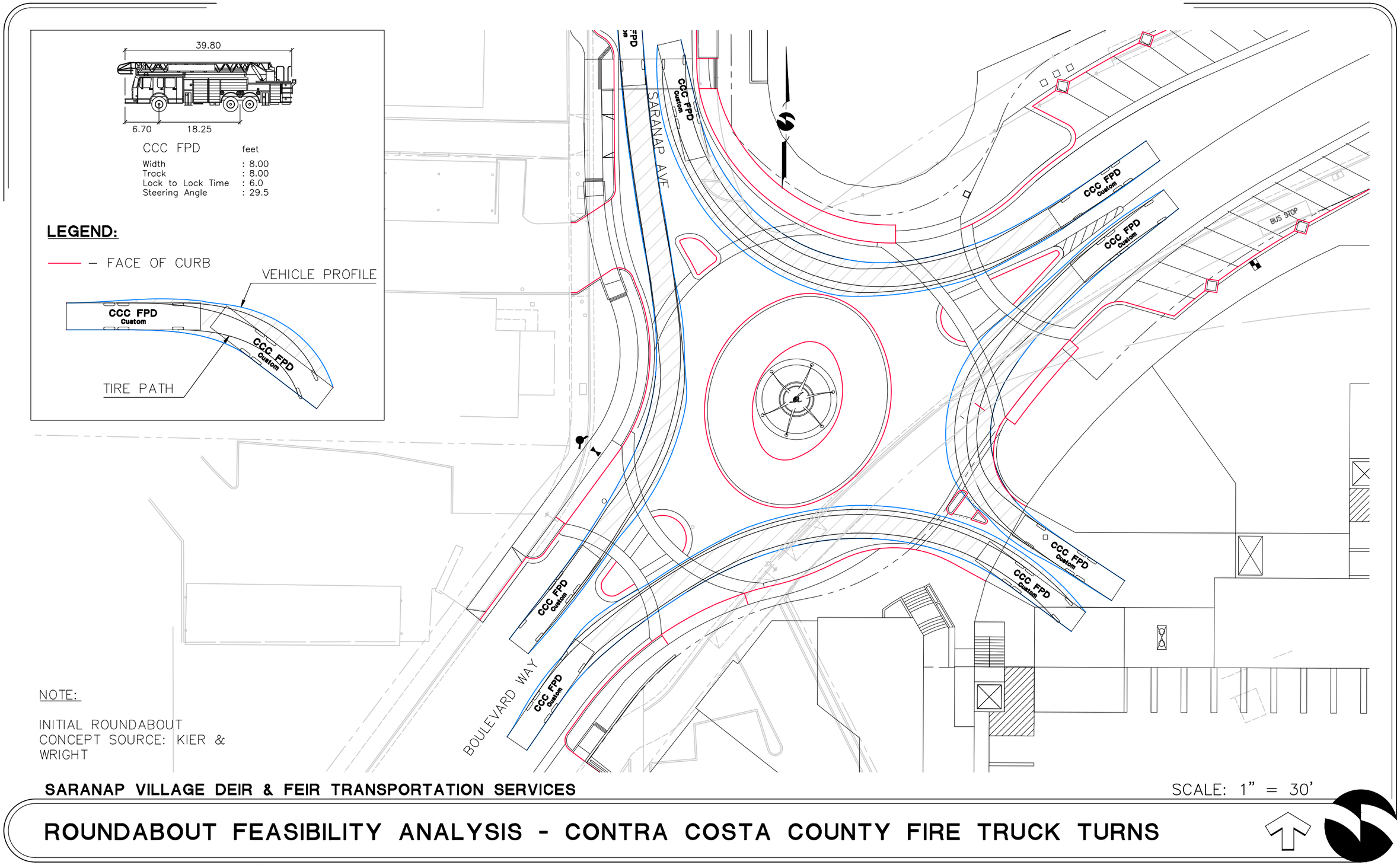
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - CONTRA COSTA COUNTY FIRE TRUCK TURNS

6/17/2015 2:10 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 9



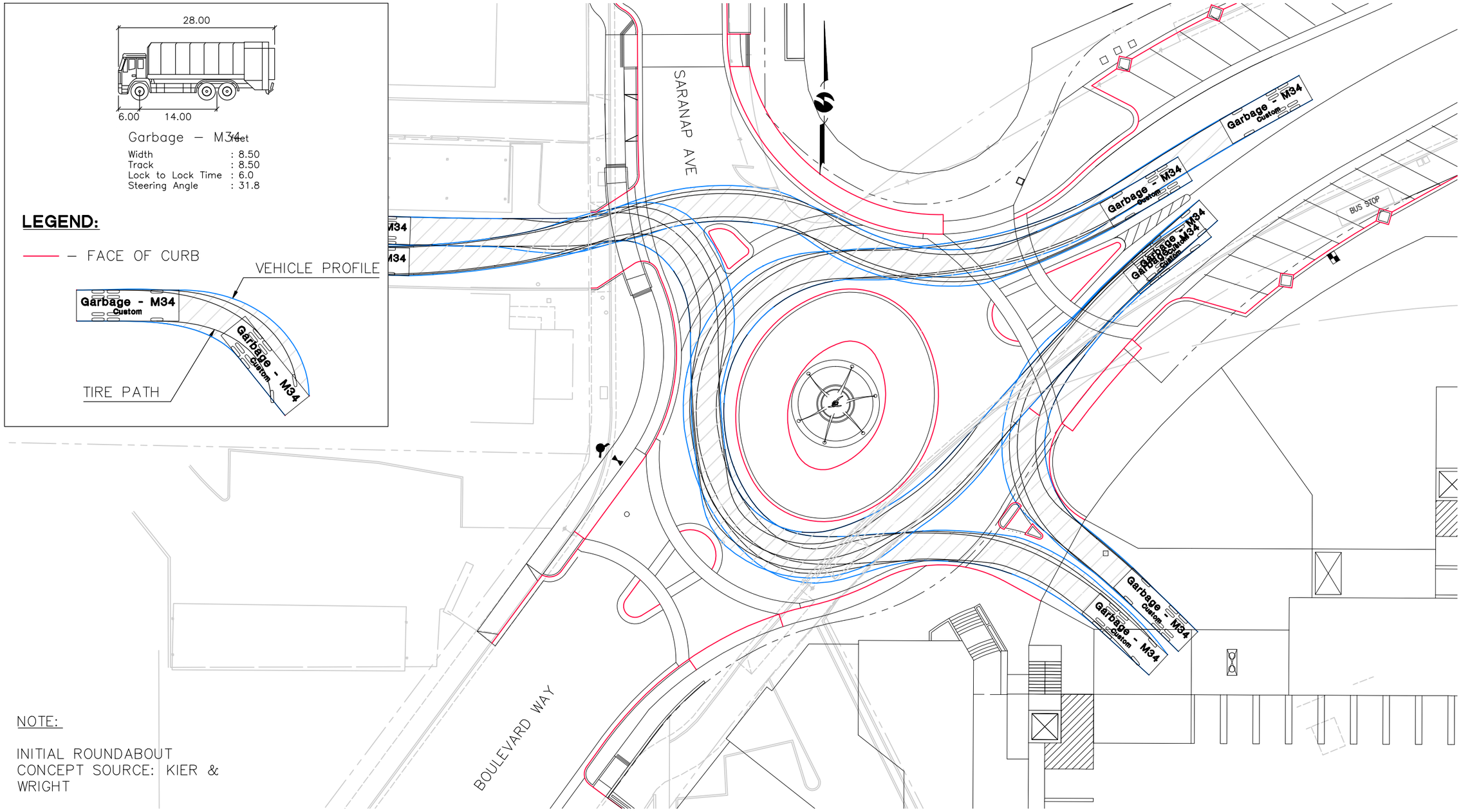
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - CONTRA COSTA COUNTY FIRE TRUCK TURNS

6/17/2015 2:10 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 10



NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT

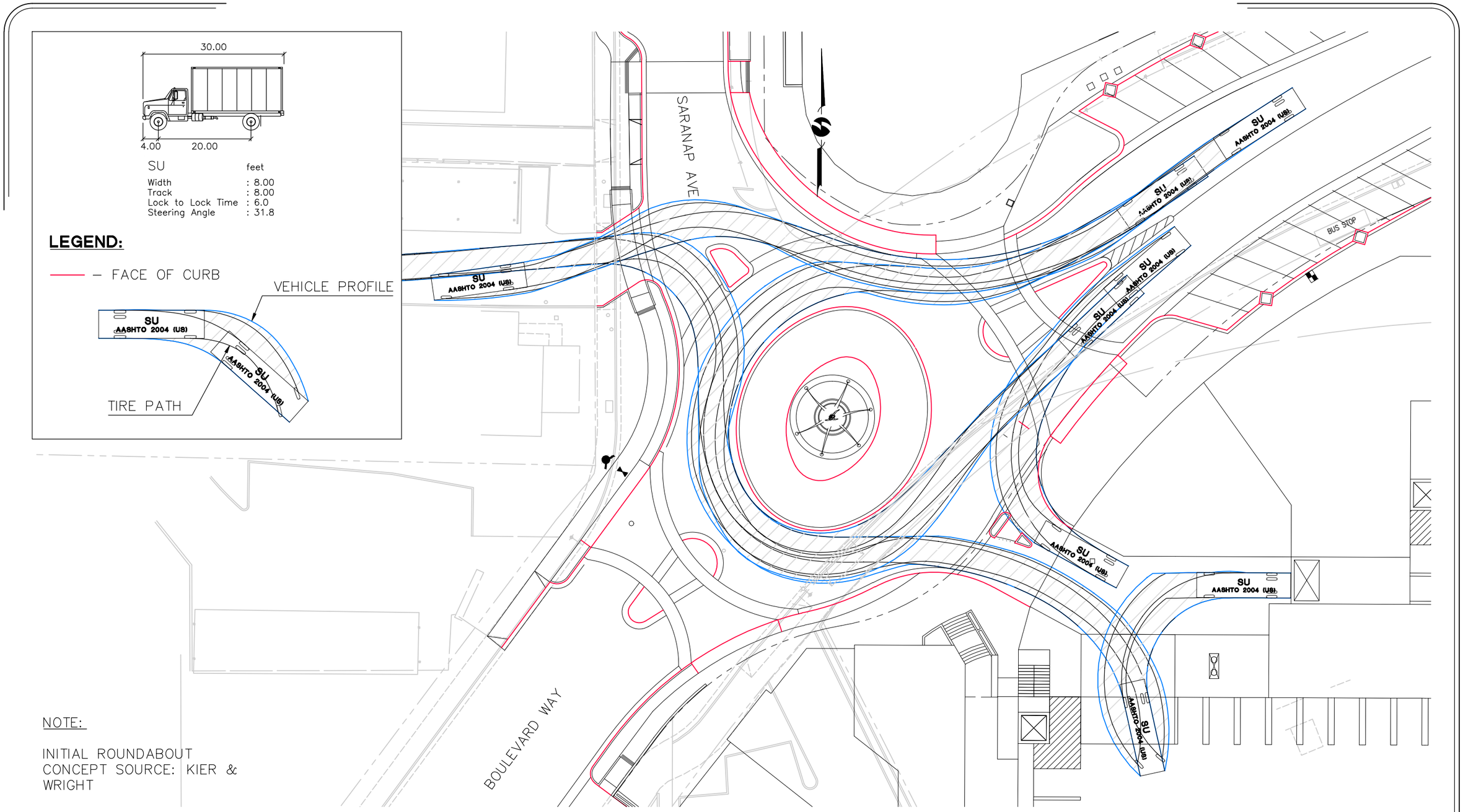
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - GARBAGE TRUCK TURNS

6/17/2015 2:10 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 11



NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT

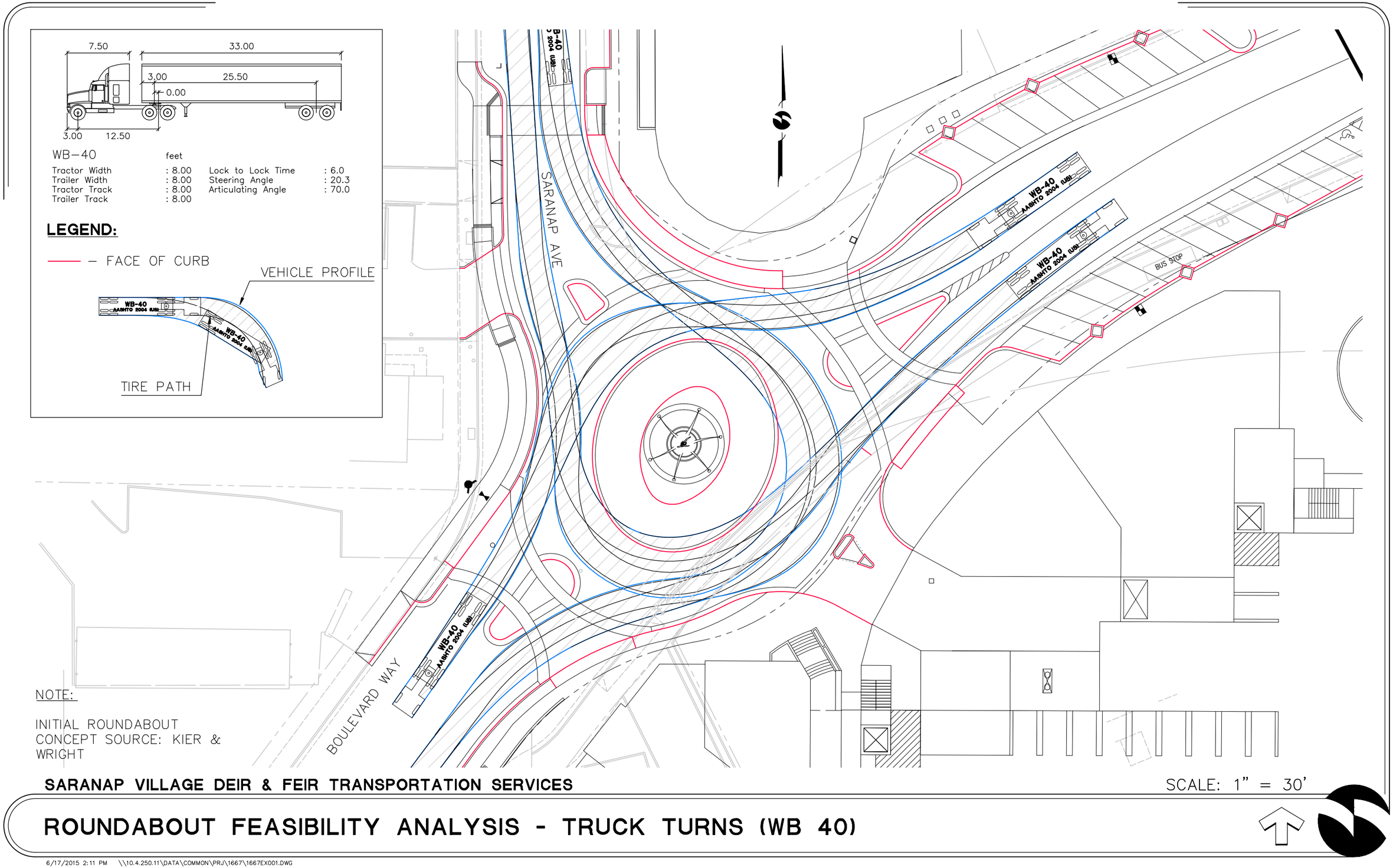
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (SU)

6/17/2015 2:11 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 12



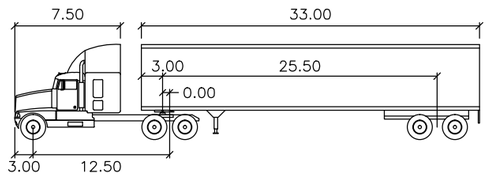
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (WB 40)

6/17/2015 2:11 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 13



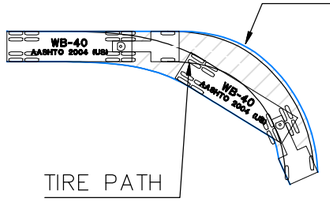
WB–40 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 20.3
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		

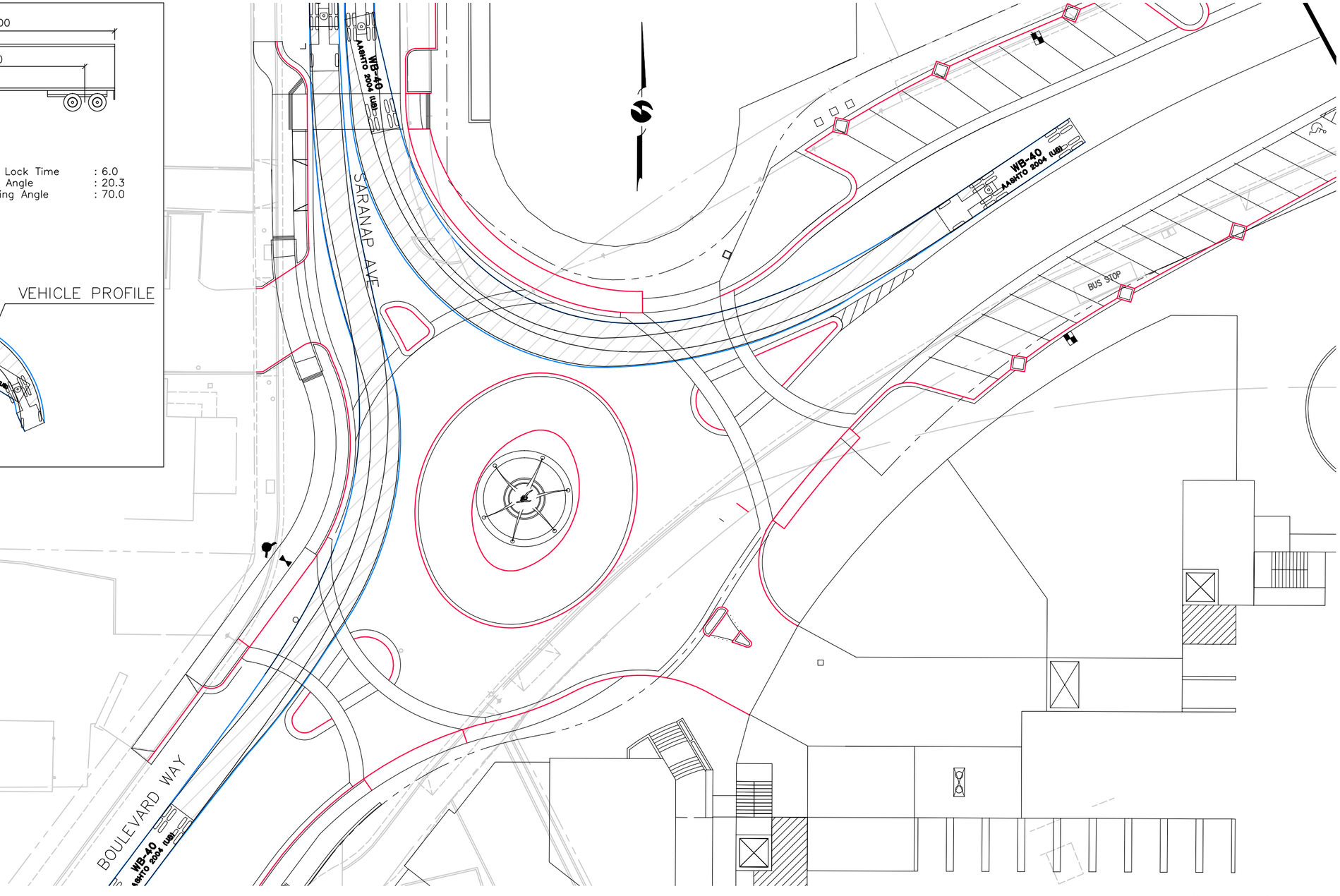
LEGEND:

— FACE OF CURB

VEHICLE PROFILE



TIRE PATH



NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT

SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - TRUCK TURNS (WB 40)

6/17/2015 2:11 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

Stopping Sight Distance

NCHRP Report 672 provides direction on the sight distance criteria that must be analyzed at roundabouts. The areas that must be kept free of vertical obstructions that would impede drivers' visibility of other key vehicles and pedestrians are referred to as "clear-view areas." Tall objects and landscaping that could grow to a height of 3.5 feet or greater should be kept out of these clear-view areas. Sufficient stopping sight distances are provided at three key roundabout locations: on intersection approaches, on the circulatory roadway, and at pedestrian crossings on roundabout exits. Fastest path speeds within the roundabout and posted speed limits along the approaches were used to determine minimum stopping sight distance. The roundabout stopping sight distance criteria and clear view areas described in NCHRP 672 are shown in Figure 14. Table 3 summarizes the minimum stopping sight criteria per approach.

TABLE 3: PROPOSED ROUNDABOUT STOPPING SIGHT DISTANCE

Approach	Design Speed (mph)	Stopping Sight Distance (feet)
Northbound Saranap Dwy Entrance	10.0	46.4
Northbound Circulating (V2)	17.7	95.1
Northbound Right (V5)	16.0	83.8
Southbound Saranap Ave Entrance	30.0	197.4
Southbound Circulating (V2)	12.2	59.4
Southbound Right (V5)	19.4	107.9
Eastbound Boulevard Way Entrance	30.0	197.4
Eastbound Circulating (V2)	24.0	143.7
Eastbound Right (V5)	19.7	109.9
Westbound Boulevard Way Entrance	30.0	197.4
Westbound Circulating (V2)	14.5	73.7
Westbound Right (V5)	15.0	76.7
Notes: Stopping Sight Distance criteria obtained from NCHRP Report 672		

The proposed roundabout at Saranap Avenue and Boulevard Way provides minimum stopping sight distance and visibility for all turn movements. Sight triangles and clear view areas fall within right-of-way under the proposed geometrics. Consideration of the sight distance triangles will need to be included in the design of landscape features in and near the intersection.

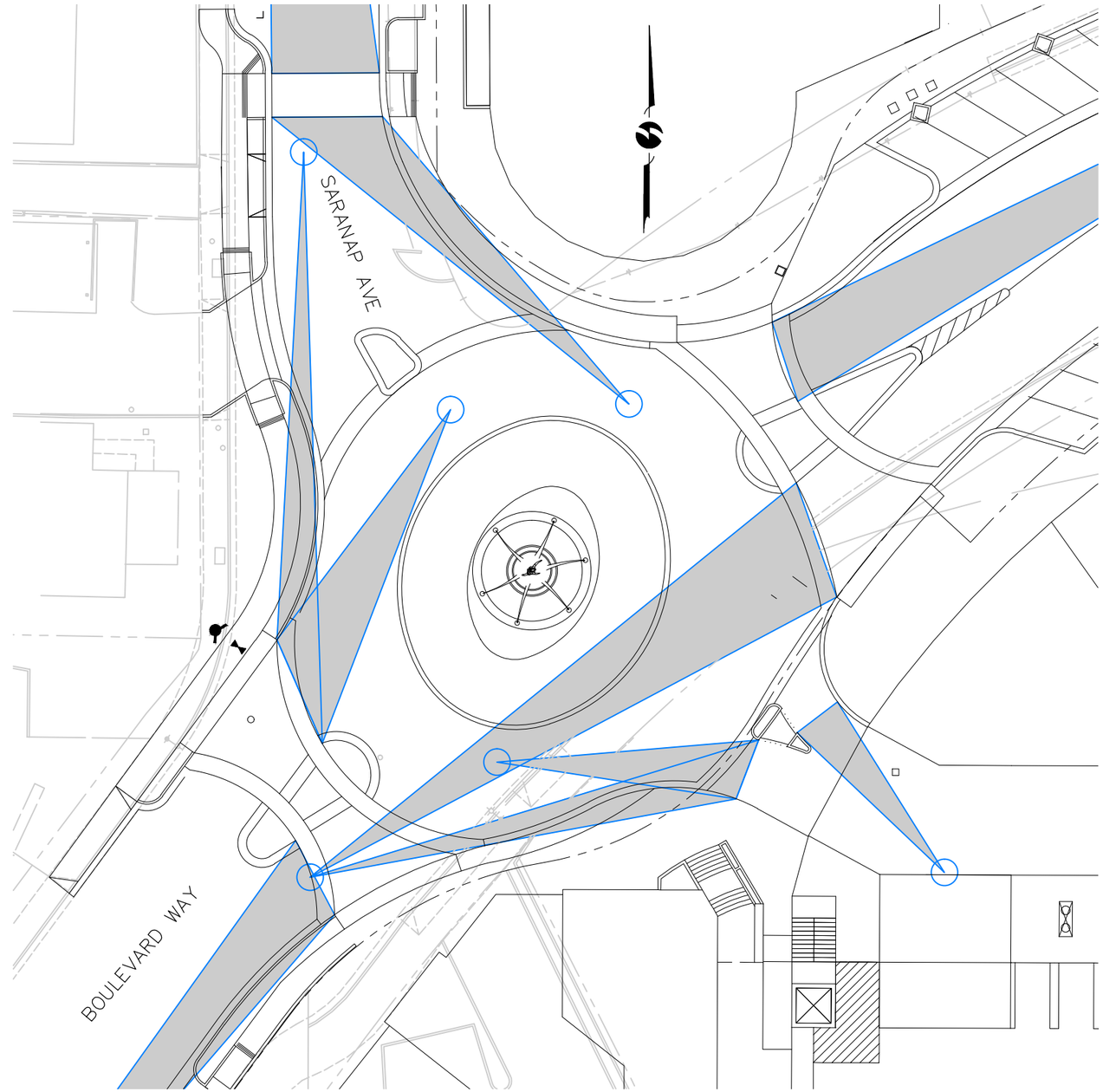
FIGURE 14

PEDESTRIAN STOPPING SIGHT DISTANCE

Approach	Design Speed (mph)	Stopping Sight Distance (feet)
Northbound Saranap Dwy Entrance	10.0	46.4
Northbound Circulating (V2)	17.7	95.1
Northbound Right (V5)	16.0	83.8
Southbound Saranap Ave Entrance	30.0	197.4
Southbound Circulating (V2)	12.2	59.4
Southbound Right (V5)	19.4	107.9
Eastbound Boulevard Way Entrance	30.0	197.4
Eastbound Circulating (V2)	24.0	143.7
Eastbound Right (V5)	19.7	109.9
Westbound Boulevard Way Entrance	30.0	197.4
Westbound Circulating (V2)	14.5	73.7
Westbound Right (V5)	15.0	76.7
Notes: Stopping Sight Distance criteria obtained from NCHRP Report 672		

NOTE:

INITIAL ROUNDABOUT CONCEPT SOURCE: KIER & WRIGHT



SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - STOPPING SIGHT DISTANCE (PED CROSSINGS)

6/17/2015 2:10 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

Intersection Sight Distance

Intersection sight distance differs at roundabouts versus other intersections. Drivers must only be able to see potentially conflicting oncoming traffic from the left as they approach the roundabout entry. NCHRP Report 672 provides methodologies to establish the required sight distance triangles for conflicting traffic in both the entering and circulating approaches. Sight distance lengths vary according to vehicle speeds, and are measured along the vehicle drive paths. The roundabout Intersection sight distance criteria and clear view areas described in NCHRP 672 and are shown in Figure 15 The clear view areas and minimum intersection sight distances are depicted in Table 4.

TABLE 4: PROPOSED INTERSECTION SIGHT DISTANCE

Approach	Conflicting Speed (mph)	Sight Triangle Length (feet)
Eastbound Boulevard Way		
Entering Leg (D1)	24.3	178.7
Circulating Leg (D2)	12.8	93.8
Westbound Boulevard Way		
Entering Leg (D1)	16.8	123.3
Circulating Leg (D2)	12.8	93.8
Southbound Saranap Ave		
Entering Leg (D1)	20.4	149.9
Circulating Leg (D2)	11.3	82.9
Northbound Saranap Driveway		
Entering Leg (D1)	24.8	182.0
Circulating Leg (D2)	11.3	82.9
Notes: Intersection Stopping Sight Distance criteria obtained from NCHRP Report 672 with 5.0 second critical headway		

From Table 4, the roundabout concept provides sufficient intersection sight distance Sight triangles and clear view areas fall within right-of-way under the proposed geometrics. Consideration of the intersection sight distance triangles will need to be included in the design of landscape features in and near the intersection..

Angles of Visibility

A view angle is the angle driver would need to turn their head in order to see oncoming traffic circulating in the roundabout. A small view angle would result in a driver craning their neck to see traffic. View angles are decreased when the skew angle at which the approach roadway intersects is reduced. The view angle should be 75 degrees or more. View angles are shown on Figure 15 as they are related to intersection sight distances.

Entry angle or phi angle is the intersection angle between the relative entry path and the rightmost adjacent exit path within the circulatory roadway. An entry angle between 20 and 40 degrees typically represents a balance between entry deflection and speed consistency for vehicle movements.

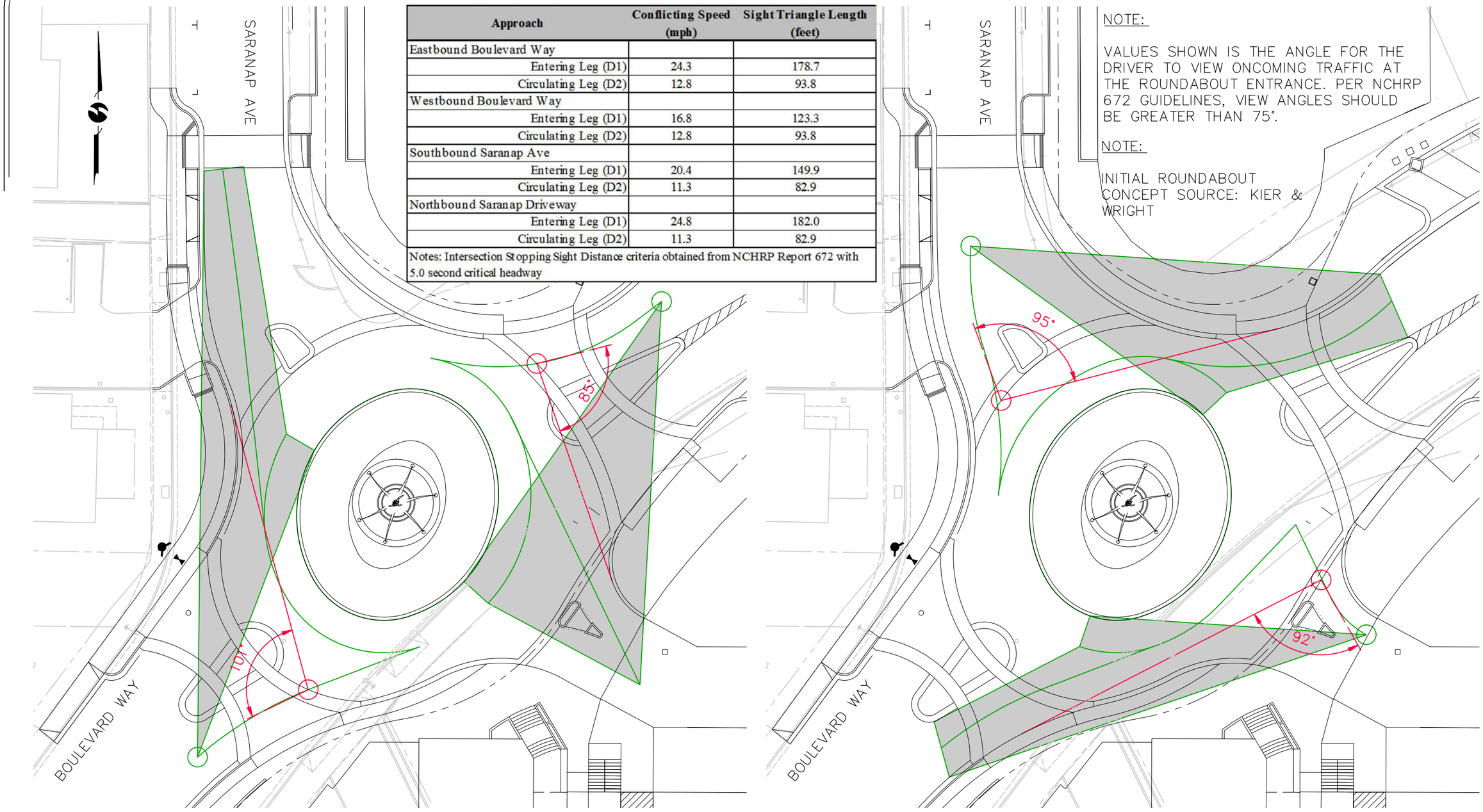
The proposed roundabout concept provides sufficient entry angles of visibility.

FIGURE 15

INTERSECTION STOPPING SIGHT DISTANCE

Approach	Conflicting Speed (mph)	Sight Triangle Length (feet)
Eastbound Boulevard Way		
Entering Leg (D1)	24.3	178.7
Circulating Leg (D2)	12.8	93.8
Westbound Boulevard Way		
Entering Leg (D1)	16.8	123.3
Circulating Leg (D2)	12.8	93.8
Southbound Saranap Ave		
Entering Leg (D1)	20.4	149.9
Circulating Leg (D2)	11.3	82.9
Northbound Saranap Driveway		
Entering Leg (D1)	24.8	182.0
Circulating Leg (D2)	11.3	82.9

Notes: Intersection Stopping Sight Distance criteria obtained from NCHRP Report 672 with 5.0 second critical headway



SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - INTERSECTION SIGHT DISTANCE & VIEW ANGLE

6/17/2015 2:10 PM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

Roundabout Deficiencies

Based on the proposed geometrics and safety conditions described in the preceding sections, the roundabout at Saranap Avenue and Boulevard Way under the design proposed by the project applicant potentially operates with the following deficiencies:

- Fast path entry speed for the southbound, eastbound, and westbound single lane approaches exceed the 25 mph threshold recommended in NCHRP Report 672 under the initial proposed design. The proposed roundabout does not provide enough entry deflection between the center island and curb return entrance to reduce entry speeds and discourage drivers from “straight shooting” through the intersection. Excessive entry speeds typically reduce the driver’s ability to maneuver within the roundabout and yield to circulating vehicles and/or pedestrians crossing the road.

- Insufficient truck apron width at the center island to accommodate the swept path of a CA Legal 50 trailer when making a U-turn movement under the initial proposed design. The trailer profile encroaches into the proposed landscaping and centerpiece statue.

- Insufficient roadway clearance at the northbound Saranap Village Driveway to accommodate the swept path of garbage and delivery trucks entering the roundabout under the initial proposed design. The vehicle profiles encroach into the proposed splitter island and curb return.

- Pedestrian crosswalks along Boulevard Way are located too close to the circulatory roadway under the initial proposed design. Per NCHRP Report 672, a typical and minimum crosswalk setback of 20 feet is recommended to reduce the likelihood of exit vehicles queuing into the intersection and disrupting traffic operations.

For reference purposes, Figures 16-23 (report pages 28-35) show the roundabout with the modifications recommended by Omni-Means (modifications recommended on report pages 24-25)

Roundabout Modifications and Recommendations

Omni-Means has recommended several design modifications to improve the deficiencies identified at the Saranap Avenue / Boulevard Way roundabout and some additional considerations to be applied as the design progresses. The design modifications, listed below and illustrated in Figures 16 through 23, describe possible circulation modifications that will improve the safety, efficiency, and traffic operations at the proposed intersection. Additional recommended measures address issues not included in the current plan, but should be addressed prior to final design.

Proposed Modifications

- Revise the approach geometry along Boulevard Way to improve entry deflection and reduce vehicle speeds at the roundabout entrance. Tightening the roadway between the splitter island and curb return would reduce the proposed fast path speed while maintaining truck access through the intersection.

- Revise the approach geometry and install traffic calming measures along Saranap Avenue to reduce vehicle speeds at the roundabout entrance. Due to existing conditions of the skewed roadway alignment, driveway access to neighboring apartments, and right-of-way constraints, the southbound Saranap Avenue approach provides insufficient horizontal deflection to naturally slow vehicle speeds under the 25 mph fast path threshold. To resolve this issue, recommend:

    - Shifting the roadway alignment approach to the east and sharpening the entry geometry which would square up the intersection and increase horizontal deflection between the outside curb return and the center island. Realigning the Saranap Ave approach would potentially impact the northeast intersection sidewalk limits at the proposed Saranap Village Project.

    - Extending the center island and circulatory roadway in the northwest quadrant by the Saranap Avenue entrance which would also increase horizontal deflection between the outside curb return and the center island.

    - Modifying the Saranap Avenue crosswalk over a raised speed table with additional advance warning signs and striping. These calming measures can be an effective method to slow vehicle speeds and increase driver compliance in yielding to pedestrians.

    - Modifying the splitter island to be mountable by large semi-trailer vehicles with low profile curbs to maintain vehicle maneuverability and driveway accessibility along Saranap Avenue.

- Revise the truck apron geometry at the center island to accommodate the swept path of a truck trailer without it encroaching into the vertical centerpiece and artwork area.

- Revise the splitter island geometry at the northbound Saranap Village Driveway to widen the roadway and improve vehicle access for garbage and delivery trucks entering the roundabout. Relocate the pedestrian crosswalk a minimum of 20 feet from the circulatory roadway.

- Relocate the pedestrian crossings along Boulevard Way a minimum of 20 feet from the circulatory roadway to separate intersection entry conflict points, improve visibility of pedestrians to approaching and departing vehicles, and reduce the chance of vehicle queues blocking the roundabout during a pedestrian crossing.

- Add pavement striping and markings to delineate the roundabout yield line entrance and circulatory roadway to vehicles as they approach the intersection. The required striping should comply with California MUTCD requirements.

- To improve safety and discourage pedestrians and bicyclists from crossing into the center island and circulatory roadway, fill the buffer strip immediately adjacent to the roundabout with low-profile landscaping or fencing (no taller than 2-feet approximately) between the sidewalk and circulatory roadway. It is noted that smaller buffers (less than 2-foot minimum) may be appropriate provided they create a sufficient physical barrier to discourage pedestrians from crossing the barrier.

Additional Recommendations

The following recommendations describe roundabout features / issues that were not included in the current plan for review but should be addressed prior to final design.

- As modifications to the circulatory roadway and central island occur, the fast path alignments must be reevaluated based on the new geometry and added deflection at the approaches may be required to keep the fast path speeds remain within recommended values.

- Offset median curbing at the roundabout entries and exits 2' from the stripe. This will help protect the integrity of the curbing, avoid signage from being "clipped" by passing vehicles, and ensure emergency vehicle access. It is standard practice to keep the tractor (driving) portion of turning templates 2 feet away from any curb face. To achieve this, restrict the turning movements within median striping and keep the front wheels from entering the lip of gutter along the outer edge of the roadway (trailer portion can be allowed to mount lip of gutter areas and the truck apron for CA Legal vehicle).

- For roundabout intersections, the ability to provide adequate lighting is highly dependent on the illumination pole locations. The IES *Design Guide for Roundabout Lighting* recommends lighting be placed around the perimeter of the roundabout and at locations on the approach side of the crosswalks. This setup provides the most optimal visibility within the key conflict areas and visibility of circulating vehicles when approaching the intersection. These lighting features would be confirmed by the project's civil engineers as the design moves forward.

- Improve visibility of the proposed roundabout with additional advance warning signs and pavement delineation. Installing reflective markers and striping on raised curbs, splitter islands, and the center island can be an effective method to help approaching drivers recognize the intersection and adjust their speed. Special consideration of sign selection and location is needed; as roundabouts typically end up with a field of signs at the approaches. Consider varying the height and location of signs to provide the necessary information without impacting the driver's visibility of the intersection.

- Enhance the physical presence and visibility of the proposed roundabout by raising the vertical profile of the central island filled with landscaping and possibly artwork. Elevating the central island profile can encourage slower roundabout speeds and inform drivers that they cannot pass straight through the intersection. Central island treatment should be designed such that it does not encourage pedestrians into the central island.

- The project's civil engineers have indicated that roadway profiles would not impact the sight distances within the roundabout sphere of influence (±200 feet from yield line). These roadway profiles would be confirmed at final project design.

- The project's civil engineers have indicated drainage features would be designed to prevent storm water runoff from crossing and ponding into the traveled way and pedestrian crosswalks/landing areas. These drainage features would be confirmed at final project design

- The use of sharrows (shared-lane marking) should be considered along Boulevard Way and Saranap Avenue to indicate and alert drivers that a cyclist may use the full travel lane with motor vehicles while traveling through the roundabout.

It needs to be stated and understood that while the proposed conceptual changes improve on the applicant's proposed roundabout design, these recommendations and resulting roundabout improvement concept would not be considered complete and ready for construction. During detailed engineering design, some design parameters and/or elements may change before the roundabout is approved and constructed. Final construction drawings will need to be reviewed for compliance with the safety and design recommendations analyzed as part of this preliminary design concept.

Benefits of Roundabout Operations

Installation of a well-designed roundabout can benefit the environment, improve pedestrian safety, and reduce vehicle accidents. Related to green-house gas issues; studies have found the when conventional intersections (signalized and unsignalized) are converted to modern roundabouts, there is an average reduction of 30% in carbon monoxide and nitrogen oxides, and a 30% reduction in fuel consumption (*Environmental Impacts of Kansas Roundabouts, September 2003*). These documented conclusions provide evidence that roundabouts will improve overall air quality and reduce fuel consumption if used in a consistent manner. In addition, vehicles entering a roundabout are not required to come to a complete stop to proceed through the intersection – unlike traditional intersections. By yielding at the entry rather than stopping (for southbound Saranap Avenue), vehicle queuing and delay are reduced typically by 10-12 seconds. Overall vehicle accidents are reduced. Roundabouts have been shown to reduce both fatal and injury accidents by slowing vehicle speeds and reducing the number of potential vehicle conflicts. Two studies involving six roundabout intersections were performed by the Federal Highway Administration (FHWA) in 2009 that indicated all accidents were reduced by 70%, injury accidents were reduced by 88%, and fatal accidents were reduced by 100%.

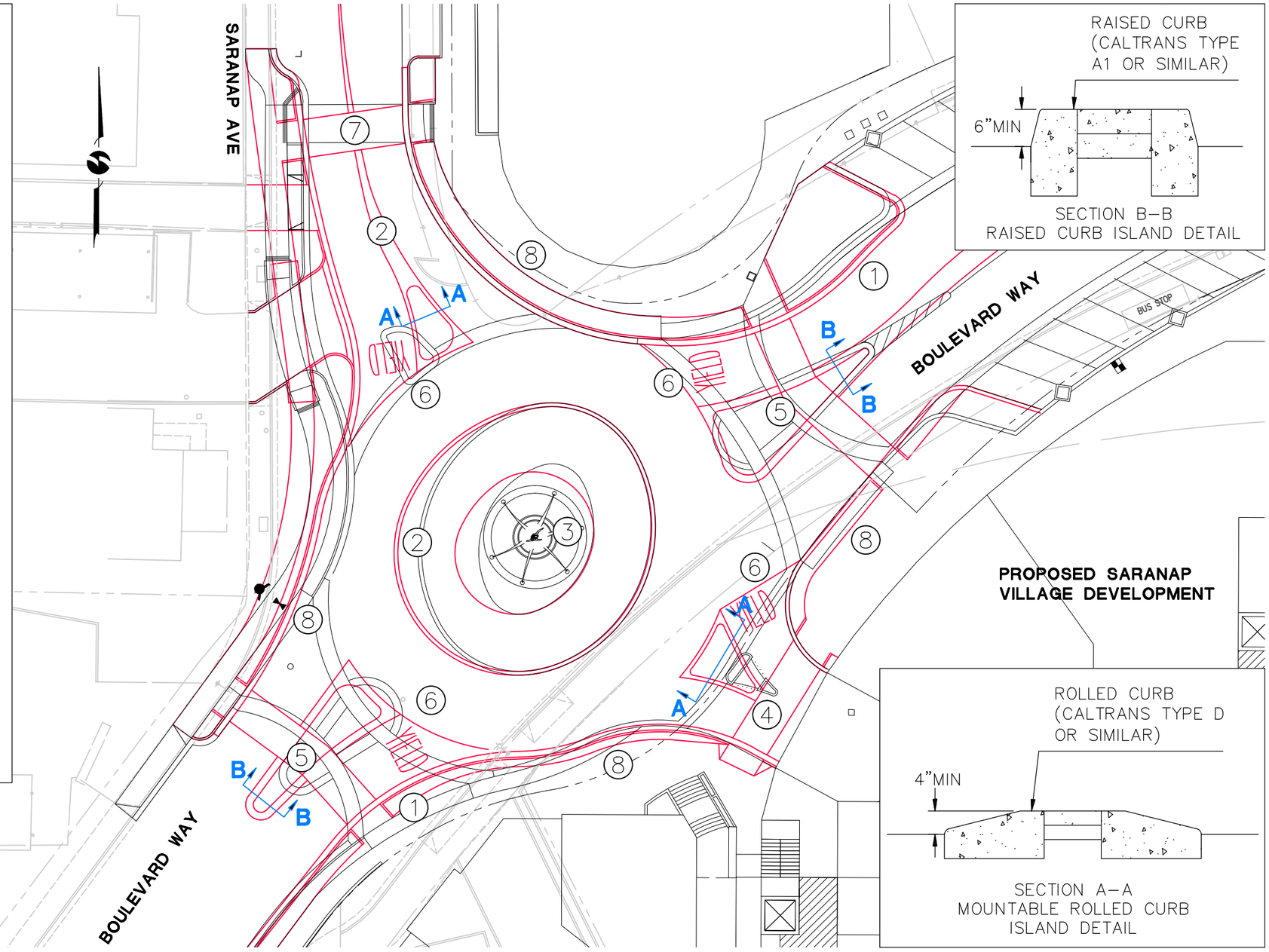
FIGURE 16

LEGEND:

1. REVISE BOULEVARD WAY ENTRY GEOMETRY TO REDUCE VEHICLE SPEEDS
2. REVISE SARANAP AVE ENTRY GEOMETRY AND CENTER ISLAND TO REDUCE VEHICLE SPEEDS
3. REVISE TRUCK APRON GEOMETRY TO ACCOMMODATE DESIGN VEHICLES
4. REVISE SPLITTER ISLAND TO ACCOMMODATE DESIGN VEHICLES AND PEDESTRIAN CROSSING
5. RELOCATE PEDESTRIAN CROSSINGS AWAY FROM ROUNDABOUT ENTRANCE AND EXIT
6. ADD PAVEMENT STRIPING AND MARKINGS TO DELINEATE ROUNDABOUT CONTROL
7. MODIFY CROSSWALK WITH RAISED SPEED TABLE TO REDUCE VEHICLE SPEEDS
8. PROVIDE 2' MIN LANDSCAPE BUFFER BETWEEN ROADWAY AND SIDEWALK TO DISCOURAGE PEDESTRIANS FROM CROSSING INTO THE CIRCULATORY ROADWAY

—INITIAL KIER & WRIGHT CONCEPT

—RECOMMENDED OMNI—MEANS MODIFICATIONS



SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS

6/18/2015 11:59 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 17

LEGEND:

(X#) – DIRECTION OF TRAVEL, MOVEMENT NUMBER

FASTPATH RADIUS (FEET)

Movement	Northbound Saranap Driveway (N#)	Southbound Saranap Ave (S#)	Eastbound Boulevard Way (E#)	Westbound Boulevard Way (W#)
Entering (R1)	53.0	159.4	136.6	131.4
Circulating (R2)	84.6	30.4	132.3	51.6
Exiting (R3)	91.6	169.1	1000.0	1000.0
Left Turn (R4)	25.0	37.0	44.5	37.0
Right Turn (R5)	53.8	167.5	145.2	63.3

FASTPATH SPEED (MPH)

Movement	Northbound Saranap Driveway (N#)	Southbound Saranap Ave (S#)	Eastbound Boulevard Way (E#)	Westbound Boulevard Way (W#)
Entering (V1)	15.9	24.4	23.0	22.6
Circulating (V2)	17.7	12.1	20.8	14.7
Exiting (V3)	19.7	24.9	32.7	29.3
Left Turn (V4)	11.3	13.0	14.0	13.0
Right Turn (V5)	16.0	24.9	23.5	17.1

Notes:

All values are in miles per hour

V3 exiting speeds are derived from vehicle acceleration formulas in NCHRP 672

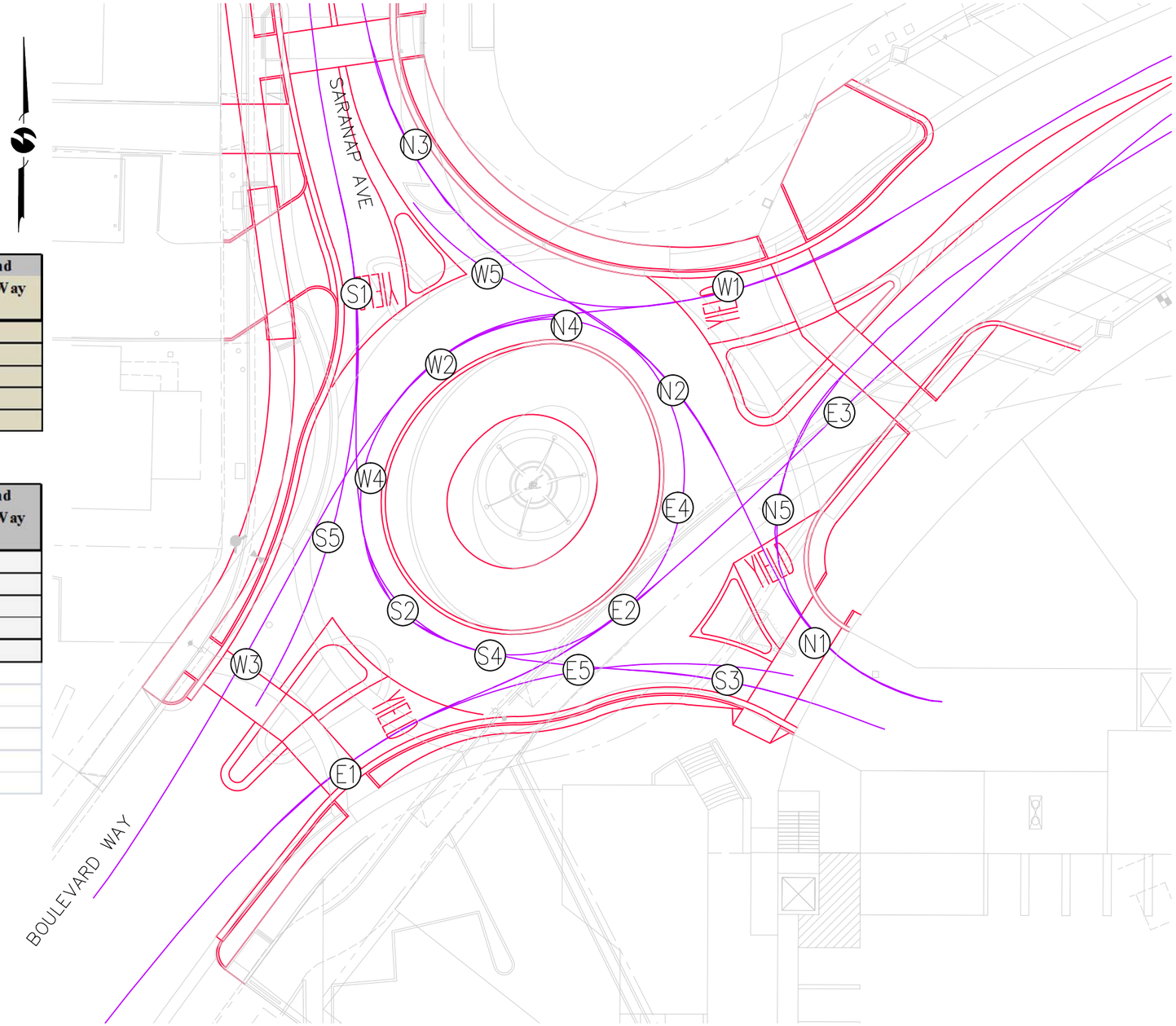
V3 fast path speed measured at exit crosswalk or 100 feet downstream from V2.

N/A = Fastest path speed does not exist for this approach

2% cross-slope assumed for determining Fastest path

—INITIAL KIER & WRIGHT CONCEPT

—RECOMMENDED OMNI–MEANS MODIFICATIONS



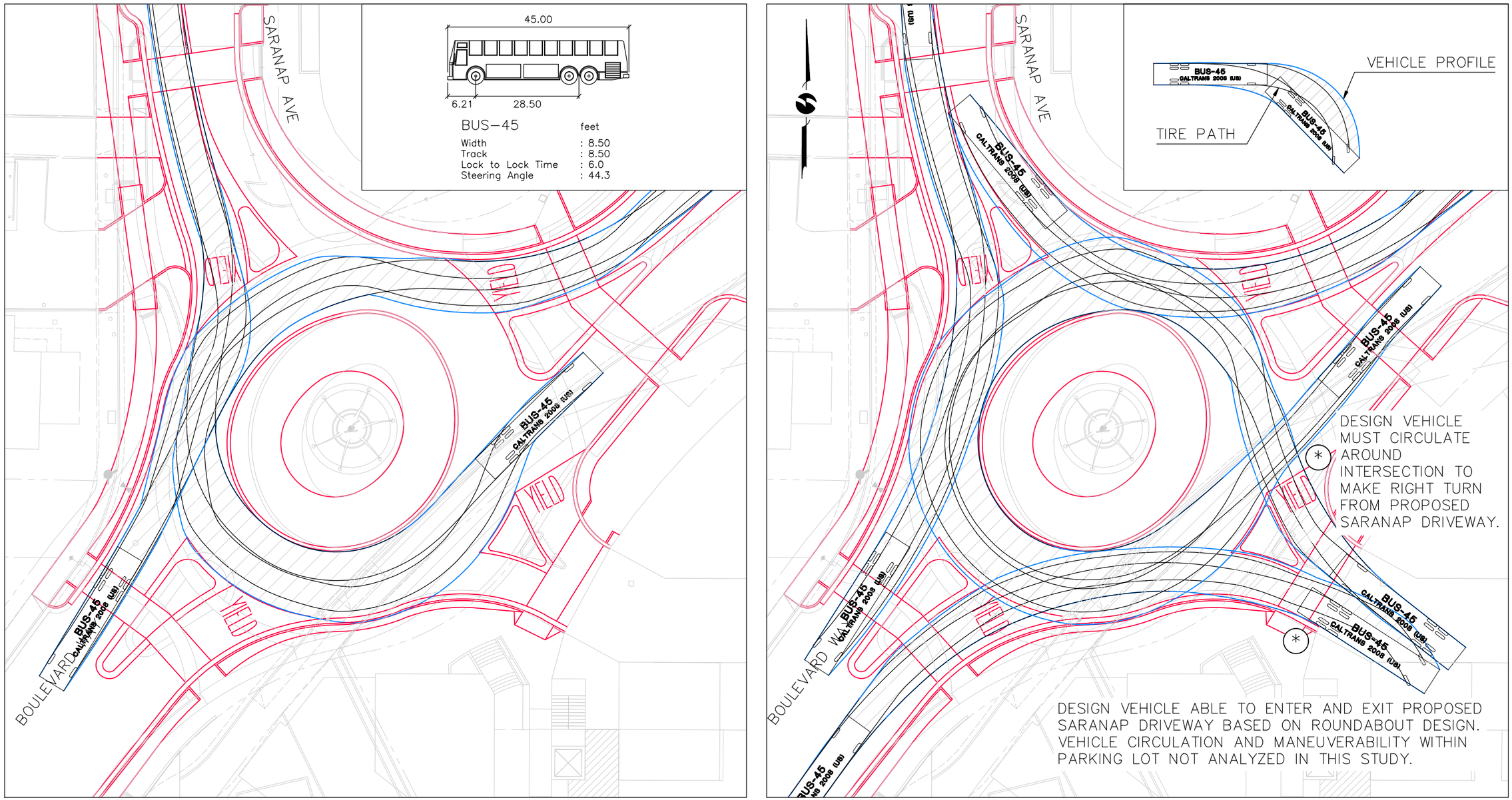
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS FASTPATH

6/18/2015 10:33 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 18



—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI—MEANS MODIFICATIONS

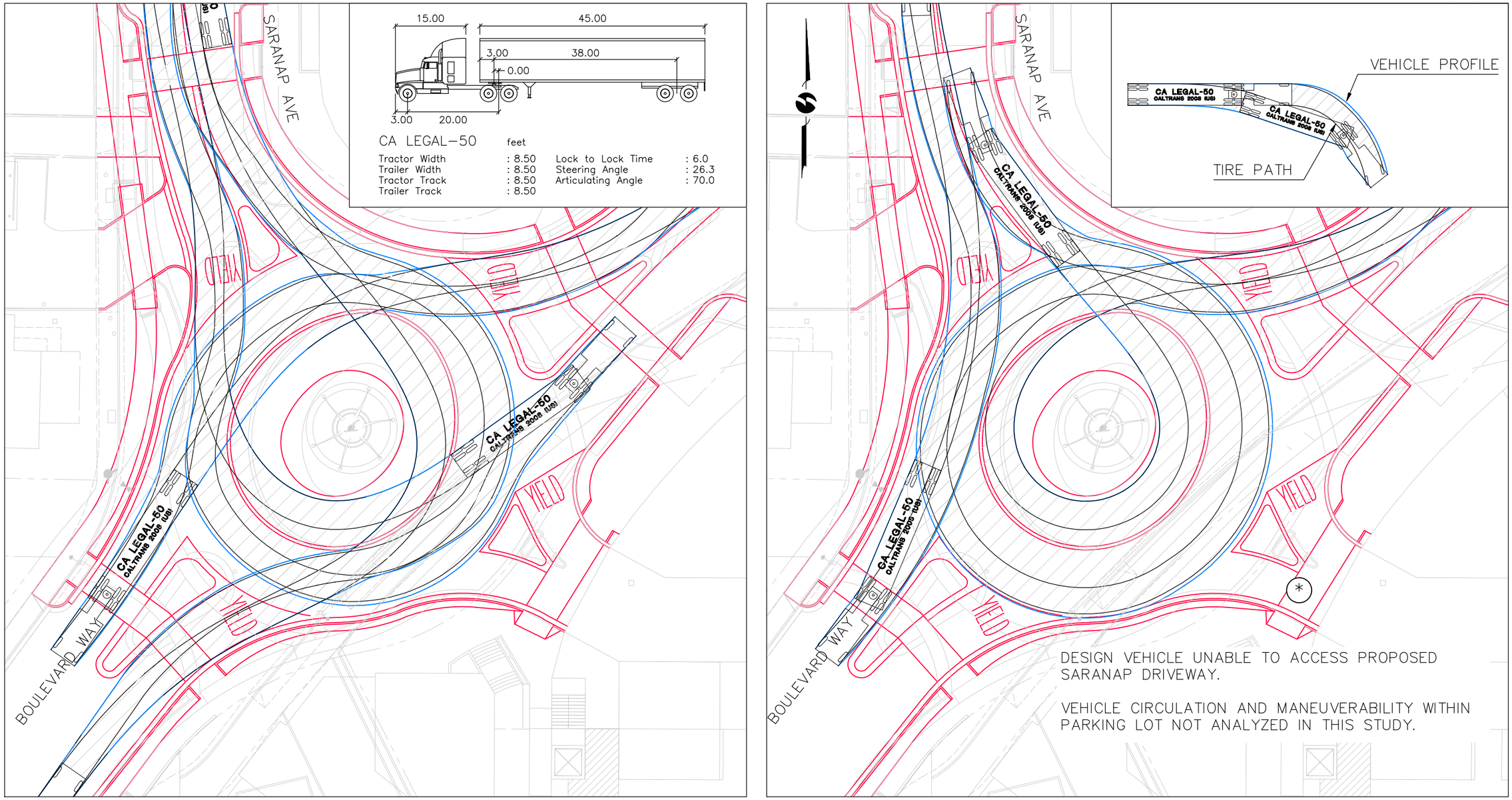
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS BUS 45

6/18/2015 10:32 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 19



—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI-MEANS MODIFICATIONS

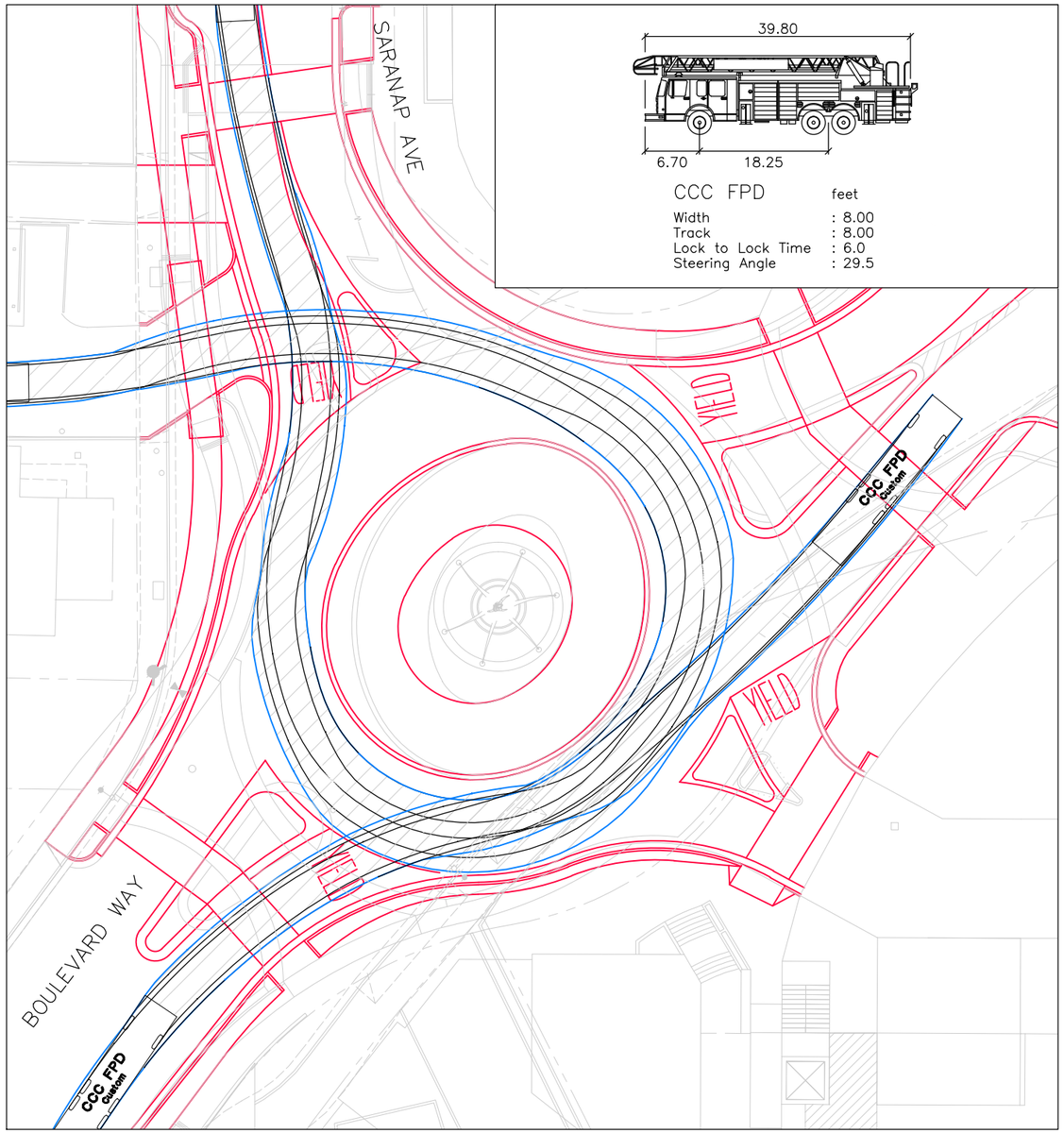
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

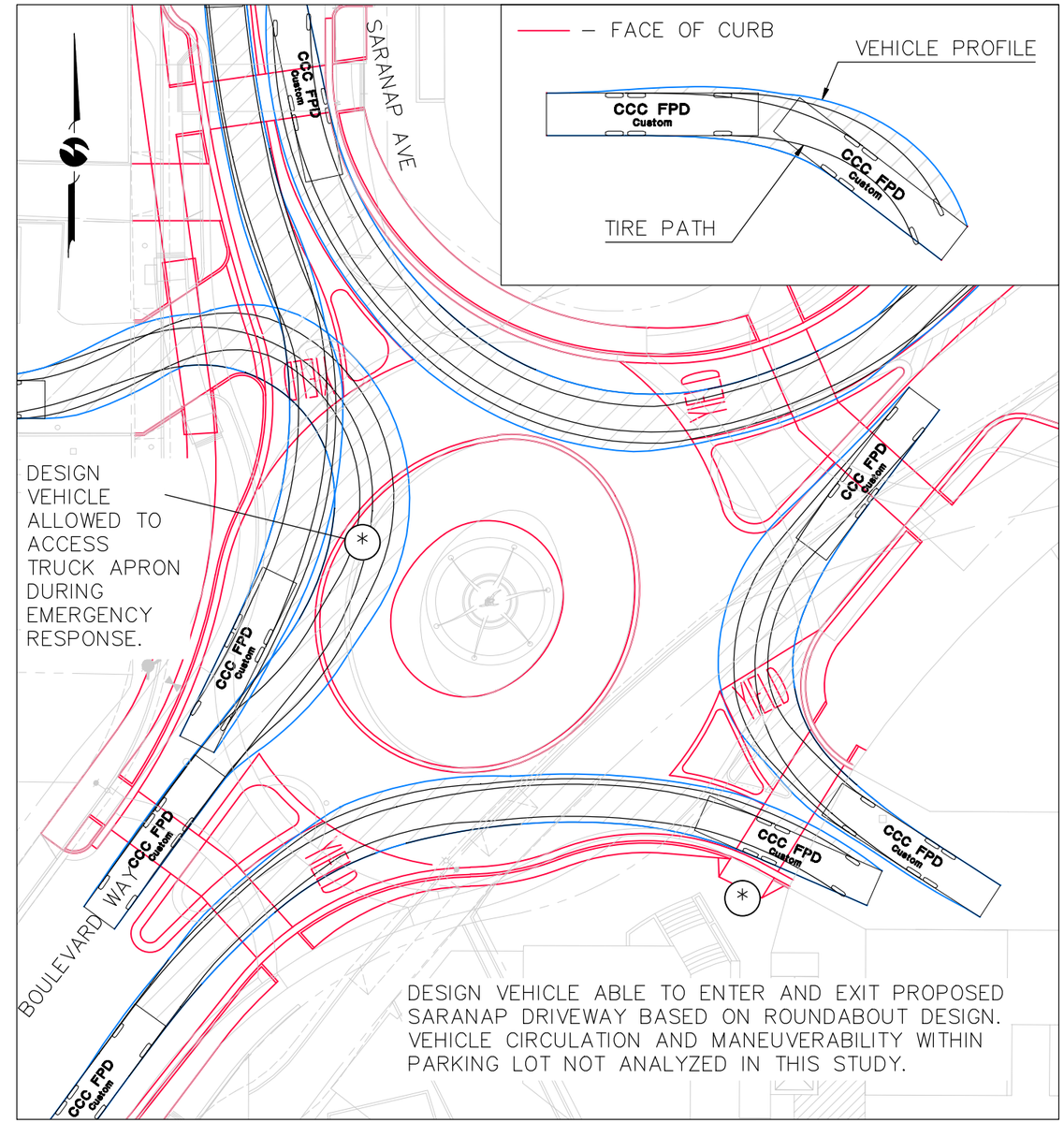
SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS CA LEGAL 50

6/18/2015 10:33 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 20





—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI—MEANS MODIFICATIONS

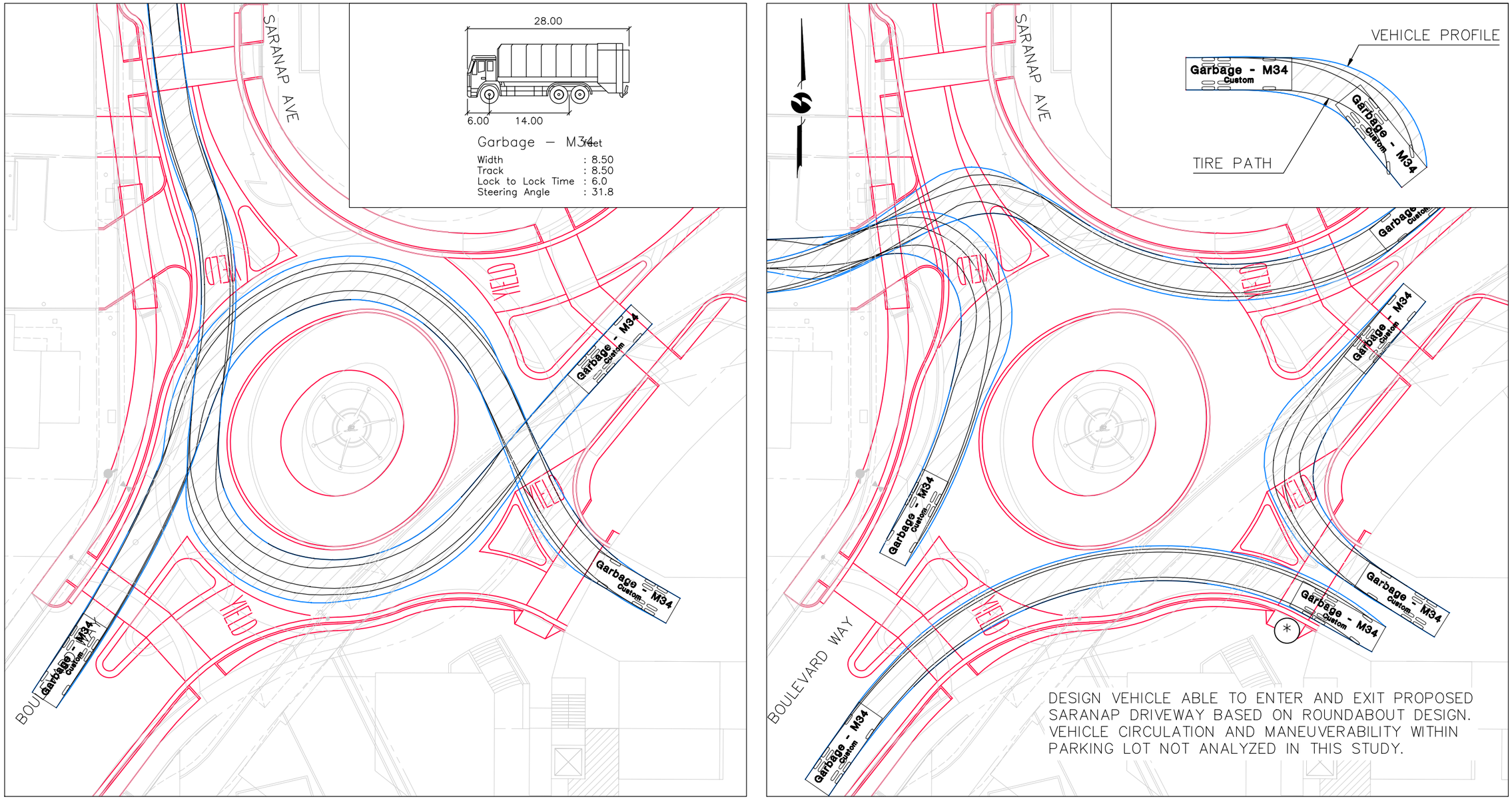
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS CCC FIRE TRUCK

6/18/2015 10:31 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 21



—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI–MEANS MODIFICATIONS

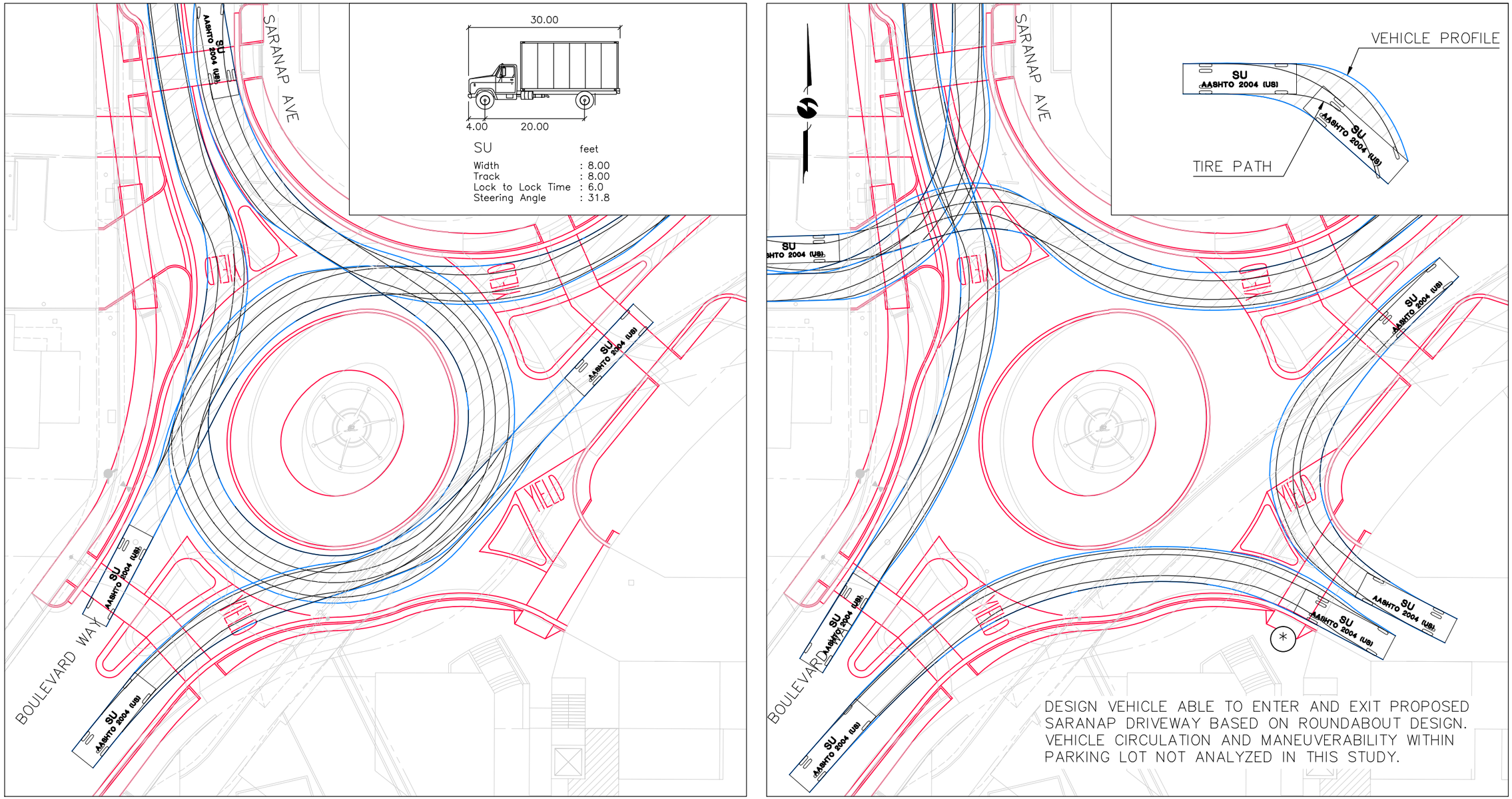
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS GARBAGE TRUCK

6/18/2015 10:31 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 22



—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI—MEANS MODIFICATIONS

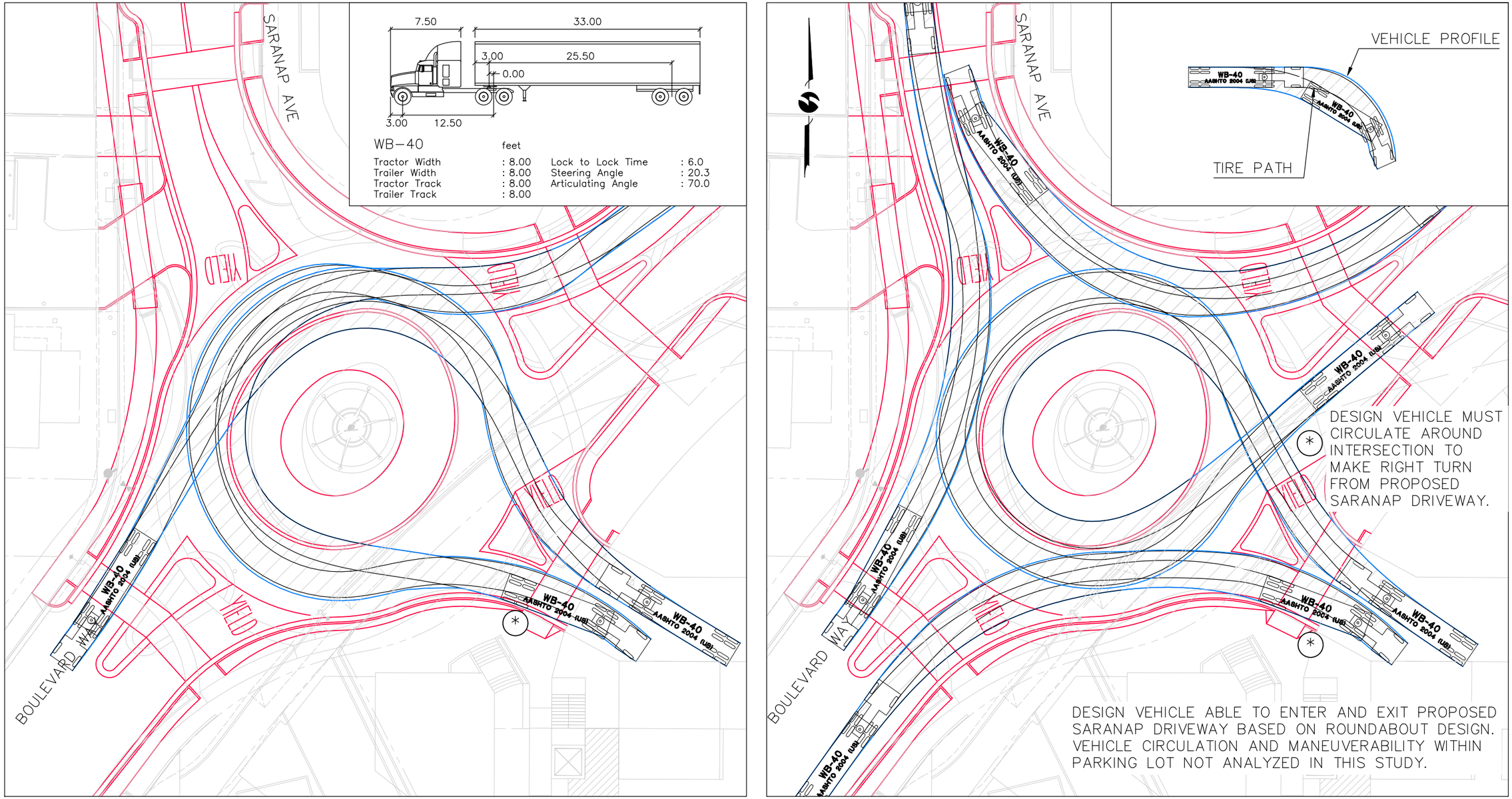
SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS SU TRUCK

6/18/2015 10:31 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

FIGURE 23



—INITIAL KIER & WRIGHT CONCEPT —RECOMMENDED OMNI—MEANS MODIFICATIONS

SARANAP VILLAGE DEIR & FEIR TRANSPORTATION SERVICES

SCALE: 1" = 30'

ROUNDABOUT FEASIBILITY ANALYSIS - RECOMMENDED MODIFICATIONS WB 40

6/18/2015 10:32 AM \\10.4.250.11\DATA\COMMON\PRJ\1667\1667EX001.DWG

APPENDIX

SIDRA LOS ANALYSIS FOR SARANAP ROUNDABOUT

LANE SUMMARY

Site: EXAM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	27	2.0	663	0.041	100	5.9	LOS A	0.2	5.1	Full	50	0.0	0.0
Approach	27	2.0		0.041		5.9	LOS A	0.2	5.1				
East: Boulevard Way													
Lane 1[d]	210	2.0	1087	0.193	100	4.7	LOS A	0.9	22.0	Full	500	0.0	0.0
Approach	210	2.0		0.193		4.7	LOS A	0.9	22.0				
North: Saranap Ave													
Lane 1[d]	118	2.0	954	0.124	100	9.1	LOS A	0.5	13.0	Full	500	0.0	0.0
Approach	118	2.0		0.124		9.1	LOS A	0.5	13.0				
West: Boulevard Way													
Lane 1[d]	254	2.0	1058	0.240	100	5.7	LOS A	1.2	29.4	Full	500	0.0	0.0
Approach	254	2.0		0.240		5.7	LOS A	1.2	29.4				
Intersection	610	2.0		0.240		6.0	LOS A	1.2	29.4				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

SIDRA INTERSECTION 6

LANE SUMMARY

Site: EXPM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	14	2.0	634	0.022	100	6.3	LOS A	0.1	2.8	Full	50	0.0	0.0
Approach	14	2.0		0.022		6.3	LOS A	0.1	2.8				
East: Boulevard Way													
Lane 1[d]	300	2.0	1085	0.277	100	5.0	LOS A	1.4	35.3	Full	500	0.0	0.0
Approach	300	2.0		0.277		5.0	LOS A	1.4	35.3				
North: Saranap Ave													
Lane 1[d]	129	2.0	895	0.145	100	9.3	LOS A	0.6	15.6	Full	500	0.0	0.0
Approach	129	2.0		0.145		9.3	LOS A	0.6	15.6				
West: Boulevard Way													
Lane 1[d]	299	2.0	1043	0.287	100	5.8	LOS A	1.5	36.9	Full	500	0.0	0.0
Approach	299	2.0		0.287		5.8	LOS A	1.5	36.9				
Intersection	742	2.0		0.287		6.1	LOS A	1.5	36.9				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

SIDRA INTERSECTION 6

LANE SUMMARY

Site: STAM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	27	2.0	651	0.042	100	6.1	LOS A	0.2	5.2	Full	50	0.0	0.0
Approach	27	2.0		0.042		6.1	LOS A	0.2	5.2				
East: Boulevard Way													
Lane 1[d]	224	2.0	1084	0.206	100	4.7	LOS A	0.9	23.9	Full	500	0.0	0.0
Approach	224	2.0		0.206		4.7	LOS A	0.9	23.9				
North: Saranap Ave													
Lane 1[d]	123	2.0	942	0.130	100	9.1	LOS A	0.5	13.8	Full	500	0.0	0.0
Approach	123	2.0		0.130		9.1	LOS A	0.5	13.8				
West: Boulevard Way													
Lane 1[d]	271	2.0	1057	0.256	100	5.7	LOS A	1.3	31.9	Full	500	0.0	0.0
Approach	271	2.0		0.256		5.7	LOS A	1.3	31.9				
Intersection	645	2.0		0.256		6.0	LOS A	1.3	31.9				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

SIDRA INTERSECTION 6

LANE SUMMARY

Site: STPM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	14	2.0	619	0.023	100	6.5	LOS A	0.1	2.8	Full	50	0.0	0.0
Approach	14	2.0		0.023		6.5	LOS A	0.1	2.8				
East: Boulevard Way													
Lane 1[d]	315	2.0	1081	0.292	100	5.0	LOS A	1.5	38.0	Full	500	0.0	0.0
Approach	315	2.0		0.292		5.0	LOS A	1.5	38.0				
North: Saranap Ave													
Lane 1[d]	133	2.0	883	0.150	100	9.3	LOS A	0.6	16.3	Full	500	0.0	0.0
Approach	133	2.0		0.150		9.3	LOS A	0.6	16.3				
West: Boulevard Way													
Lane 1[d]	320	2.0	1043	0.307	100	5.9	LOS A	1.6	40.5	Full	500	0.0	0.0
Approach	320	2.0		0.307		5.9	LOS A	1.6	40.5				
Intersection	782	2.0		0.307		6.1	LOS A	1.6	40.5				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

SIDRA INTERSECTION 6

LANE SUMMARY

Site: 2040AM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	27	2.0	630	0.043	100	6.4	LOS A	0.2	5.4	Full	50	0.0	0.0
Approach	27	2.0		0.043		6.4	LOS A	0.2	5.4				
East: Boulevard Way													
Lane 1[d]	227	2.0	1087	0.209	100	4.7	LOS A	1.0	24.3	Full	500	0.0	0.0
Approach	227	2.0		0.209		4.7	LOS A	1.0	24.3				
North: Saranap Ave													
Lane 1[d]	118	2.0	940	0.126	100	9.2	LOS A	0.5	13.2	Full	500	0.0	0.0
Approach	118	2.0		0.126		9.2	LOS A	0.5	13.2				
West: Boulevard Way													
Lane 1[d]	300	2.0	1057	0.284	100	5.6	LOS A	1.4	36.4	Full	500	0.0	0.0
Approach	300	2.0		0.284		5.6	LOS A	1.4	36.4				
Intersection	673	2.0		0.284		6.0	LOS A	1.4	36.4				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

SIDRA INTERSECTION 6

LANE SUMMARY

Site: 2040PM_PP

Saranap Village Roundabout
Roundabout

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Saranap Village Driveway													
Lane 1[d]	14	2.0	599	0.024	100	6.8	LOS A	0.1	2.9	Full	50	0.0	0.0
Approach	14	2.0		0.024		6.8	LOS A	0.1	2.9				
East: Boulevard Way													
Lane 1[d]	327	2.0	1084	0.302	100	5.0	LOS A	1.6	39.9	Full	500	0.0	0.0
Approach	327	2.0		0.302		5.0	LOS A	1.6	39.9				
North: Saranap Ave													
Lane 1[d]	129	2.0	875	0.148	100	9.4	LOS A	0.6	16.0	Full	500	0.0	0.0
Approach	129	2.0		0.148		9.4	LOS A	0.6	16.0				
West: Boulevard Way													
Lane 1[d]	349	2.0	1042	0.335	100	5.8	LOS A	1.8	45.7	Full	500	0.0	0.0
Approach	349	2.0		0.335		5.8	LOS A	1.8	45.7				
Intersection	820	2.0		0.335		6.1	LOS A	1.8	45.7				

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Copyright © 2000-2014 Akcelik and Associates Pty Ltd
www.sidrasolutions.com

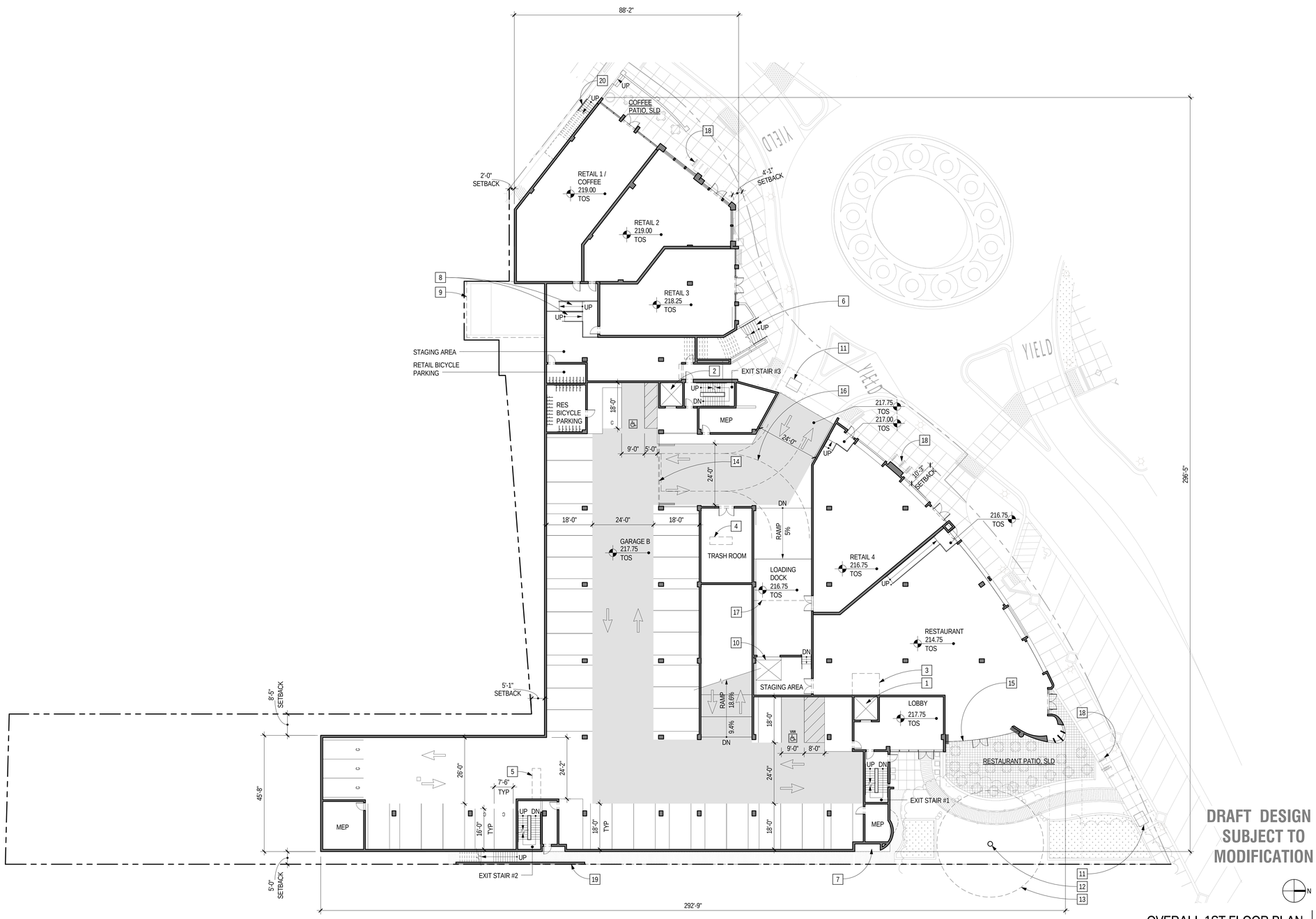
SIDRA INTERSECTION 6

LEGEND

PROPERTY LINE

KEYNOTES

1. ELEVATOR #1
2. ELEVATOR #2
3. GREASE DUCT ABOVE
4. TRASH/RECYCLE CHUTE ABOVE
5. GARAGE EXHAUST SHAFT ABOVE STAIR 2
6. STAIR TO BOULEVARD TERRACE
7. RESTAURANT GAS METER
8. RAMPS TO RETAIL
9. LINE OF VEHICLE RAMP ABOVE
10. LIFT TABLE
11. TRANSFORMER VAULT, SCD
12. (E) VALLEY OAK TO REMAIN
13. PROTECTED ZONE AROUND TREE, SLD
14. ACCESS GATE
15. FOLDING GLASS WALL SYSTEM
16. LOADING DOCK TURN-AROUND
17. LINE OF PODIUM HEIGHT CHANGE ABOVE
18. TRIPLE BIKE RACK, DOUBLE SIDED, SHORT TERM BIKE SPACES = 6 PER RACK, SLD
19. RETAINING WALL, SCD
20. EXTERIOR EXIT STAIR



DRAFT DESIGN - SUBJECT TO MODIFICATION

OVERALL 1ST FLOOR PLAN | 1

MBH
2470 Mariner Square Loop
Alameda, CA 94501
Tel 510 865 8663
Fax 510 865 1611

PRELIMINARY DEVELOPMENT PLAN

OVERALL 1ST FLOOR PLAN

NOT FOR CONSTRUCTION

SARANAP VILLAGE

PARCEL B

SARANAP VILLAGE

CONTRA COSTA COUNTY, CA

Drawings and written material appearing herein constitute original and unpublished work of the Architect and may not be duplicated, used, or disclosed without written consent of the Architect.
© MBH ARCHITECTS - 2015

No.	Date	Issue
	25 JUN 15	PLANNING SUBMITTAL

Project 48606

Scale 1/16" = 1'-0"

Drawing Title OVERALL 1ST FLOOR PLAN

Drawing No. A-3

This page intentionally left blank

APPENDIX G

Utilities Technical Reports

This page intentionally left blank

PRELIMINARY SEWER REPORT

For

SARANAP VILLAGE
MITIGATED ALTERNATIVE

June 5, 2015

Saranap Village

Hall Equities Group

1855 Olympic Blvd, Walnut Creek, CA 94596

Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551

925-245-8788

OVERVIEW

This report reviews the approximate existing and the estimated proposed sewerage generation for the Saranap Village Mitigated Alternative. The Mitigated Alternative consists of Sites A, B, B1 and C and new Streetscape for Boulevard Way and Saranap Avenue. The Mitigated Alternative includes approximately 196 multi-family units, and approximately 22,261 square feet (gross leasable area) of non-residential uses including neighborhood retail, grocery, restaurant, coffee shop, bank, bar, and fitness club uses, all of which would replace unused and outdated buildings including commercial, office, multi family, single family, religious, grocery, and vacant land.

SANITARY SEWER HISTORY

The Central Contra Costa Sanitary District Collection System Master Plan update, dated May 2010, states that "future development in the Saranap Area is likely to be infill. In the long-term (beyond 2020), the County is planning to change single-family residences fronting Olympic Boulevard to multi-family housing or commercial uses". The System Master Plans shows that there are no deficiencies in the existing collection system between the project site and the treatment plant located in Martinez, California. It is therefore assumed that the increases to the flow as a result of this Mitigated Alternative will not negatively impact the existing collection system.

The Saranap Village Mitigated Alternative is consistent with the System Master Plan. The following summarizes the existing and proposed sewer flows attributed to the subject properties. The existing uses of the property include one single family residence, a 24 unit multi-family development, a vacant church, and two retail/commercial buildings, one of which is vacant.

The Average Base Wastewater Unit Flow Factors are measured in gallons per day (gpd):

Land Use Category	**Units**	**Flow Factor (gpd/Unit)**
Residential, Single Family	Residential Unit	195
Residential, Multiple Family	Residential Unit	105
Commercial/Institutional	Gross Leasable Area (1,000 square feet - sf)	100

Using the Average Base Wastewater Unit Flow Factors, the demand of the existing uses on the Sites is:

1 single family unit @ 195 gpd/unit	195 gpd
24 multi-family units @ 105 gpd/unit	2520 gpd

37,501 sf GLA commercial and institutional (retail, church, etc.)	
@ 100 gpd/1,000 sf	3,750 gpd
Total	6,465 gpd

Ground Water Infiltration (GWI) is measured at 170 gpd/acre. The privately owned project acreage is measured at 3.34 acres. The GWI is = 568 gpd.

The total flow expected from the uses on the Sites, is calculated at 6,465 gpd + 568 gpd = 7,033 gpd (0.0070 mgd).

Proposed flows of the Mitigated Alternative are:

196 multi-family units @ 105 gpd/unit	20,580 gpd
22,261 sf GLA commercial @ 100 gpd/ 1000 sf	2,226 gpd
Total	22,806 gpd

The GWI remains unchanged at 568 gpd.

The total proposed gross flow is calculated at 22,806 gpd + 568 gpd = 23,374 gpd (0.0233 mgd). The net increase is 16,341 gpd (0.0163 mgd) more than the existing flow of 7,033.

CONCLUSION

Although the project will result in an increase in sewer flows, the Central Contra Costa Sanitary District Collection System Master Plan indicates that the existing infrastructure is sufficient to support the proposed project and other infill development through the year 2040.

This page intentionally left blank

PRELIMINARY WATER DEMAND REPORT

FOR

SARANAP VILLAGE
MITIGATED ALTERNATIVE

June 4, 2015

Saranap Village

Hall Equities Group

1855 Olympic Blvd, Walnut Creek, CA 94596

Prepared by:
Kier & Wright Civil Engineers & Surveyors
2850 Collier Canyon Road
Livermore, CA 94551

925-245-8788

OVERVIEW

This report reviews the approximate existing and the estimated proposed water demand for the Saranap Village Mitigated Alternative. The Mitigated Alternative consists of Sites A, B, B1 and C and new Streetscape for Boulevard Way and Saranap Avenue. The Mitigated Alternative includes approximately 196 multi-family units, and approximately 22,261 square feet (gross leasable area) of non-residential uses including neighborhood retail, grocery, restaurant, coffee shop, bank, bar, and fitness club uses, all of which would replace unused and outdated buildings including commercial, office, multi family, single family, religious, grocery, and vacant land.

DEMAND HISTORY

Water usage for the 2013 calendar year has been obtained from East Bay Municipal Utility District (EBMUD) for a portion of the active meters serving the existing buildings on Sites A, B, and C; those usages are as follows:

Site A - 1176 Saranap Avenue:	115 gallons per day (gpd)
Site B - 1300 Boulevard Way:	2297 gpd
Site C - 1326 Boulevard Way:	21 gpd
Total	2,433 gpd

WATER SERVICE

EBMUD was contacted regarding the original Project, which is larger than this Mitigated Alternative and therefore has a higher demand. The Project was presented to two different New Business representatives providing a detailed explanation of the existing setting and the proposed Project. A proposed tentative map was submitted with the formal request for a "Will Serve" Letter. EBMUD responded and has provided a "Will Serve" Letter for the Project. The letter is attached as "EXHIBIT A."

WATER DEMAND

Existing and proposed water demand for domestic, irrigation, and fire service is determined by EBMUD. Upon receipt of project application and plans, EBMUD will determine impacts to the existing system and project requirements for modifications to their system. However, the following is an analysis using industry standard rates for daily water usage.

The Average Daily Water Uses are measured in gallons per day (gpd):

Land Use Category	**Units**	**Flow Factor (gpd/Unit)**
Residential, Single Family	Residential Unit	700
Residential, Multiple	Residential Unit	300

Land Use Category	Units	Flow Factor (gpd/Unit)
Family		
Commercial/Institutional	Gross Leasable Area (square feet - sf)	0.05

Using the Average Daily Water Use rates, the demand of the existing uses on the Sites is:

1 single family unit @ 700 gpd/unit	700 gpd
24 multi-family units @ 300 gpd/unit	7,200 gpd
37,501 sf GLA commercial and institutional (retail, church, etc.) @ 0.05 gpd/sf	1,875 gpd
Total	9,775 gpd

Proposed flows of the Mitigated Alternative are:

196 multi-family units @ 300 gpd/unit	58,800 gpd
22,261sf GLA commercial @ 0.05 gpd/sf	1,113 gpd
Total	59,913 gpd

FIRE

It is anticipated that the existing fire service flows EBMUD's infrastructure will not be adequate to support the multilevel buildings being proposed by this project. Therefore an onsite fire system, including pumps and storage tanks, will most likely be required it is not factored into the normal water demand.

IRRIGATION

Irrigation demands were determined by the project landscape architect, and are presented in EXHIBIT B. Irrigation demands are not included in the proposed flows stated above.

CONCLUSION

As estimated above, the Mitigated Alternative will demand 59,913 gpd for non-irrigation uses, which represents a net increase of 50,138 gpd over the existing 9,775 gpd demand of current uses. As EBMUD has indicated in its "Will Serve" Letter, Water Service will be contingent upon compliance with District Regulations and Schedule of Rates and Charges and no other restrictions have been placed on this project.

“EXHIBIT A”

EAST BAY
MUNICIPAL UTILITY DISTRICT

RECEIVED
JAN 24 2014
KIER & WRIGHT
LIVERMORE

January 22, 2014

Tony Cattedra
Kier & Wright Civil Engineers & Surveyors, Inc.
2850 Collier Canyon Rd
Livermore, CA 94551

Re:

APN	Address
184-010-035 -	1298 Boulevard Way, Walnut Creek
184-010-046 -	1300 Boulevard Way, Walnut Creek
184-450-025 -	1326 Boulevard Way, Walnut Creek
185-370-010 -	1285 Boulevard Way, Walnut Creek
185-370-033 -	1299 Boulevard Way, Walnut Creek
185-370-012 -	1176 Saranap Avenue, Walnut Creek

Dear Tony Cattedra:

Water service to the subject properties will be available contingent upon compliance with the District's Regulations governing water service and Schedule of Rates and Charges.

If you have any questions, please call me at (510) 287-1103.

Sincerely,

Wendy Mach

WENDY MACH
Senior Administrative Clerk
New Business Office

/whm

Recycled Paper

“EXHIBIT B”

camp&camp
associates
planning & landscape architecture
(925) 941-6490

June 1, 2015

Saranap Mitigated Alternative Irrigation Water Usage in Gallons per Year

Site Name	Estimated Existing water use (Gallons)	Estimated new water use (Gallons)	Water use difference (Gallons)
Site A	158,873	117,886	-40,987
Site B	384,475	137,390	-247,085
Site C	39,335	16,321	-23,014
Site D	88,151	5002	-83,149
Boulevard Terrace	8,432	0	-8,432
Site B Street	0	53,553	53,553
Site C & D Street	0	36,995	36,995
Enhanced Offsite Improvements	0	62,532	62,532
	679,266	429,699	-249,587

Pamela C. A. Winther
Landscape Architect

CAMP & CAMP ASSOCIATES
25420 Camino Diablo,
Walnut Creek, California 94597
PHONE: 925.941.6490 x105

This page intentionally left blank