NOTICE OF SPECIAL MEETING

Pursuant to Section 54956 of the Government Code of the State of California, a Special meeting of the **Tracy City Council** is hereby called for:

Date/Time: **Tuesday, November 10, 2020 at 6:00 p.m.**
(or as soon thereafter as possible)

Location: **Tracy City Hall**
333 Civic Center Plaza, Tracy

THIS SPECIAL MEETING WILL BE CONDUCTED PURSUANT TO THE PROVISIONS OF THE GOVERNOR'S EXECUTIVE ORDER N-29-20 WHICH SUSPENDS CERTAIN REQUIREMENTS OF THE RALPH M. BROWN ACT

RESIDENTS ARE STRONGLY ENCOURAGED TO PARTICIPATE REMOTELY AT THE NOVEMBER 10, 2020 MEETING

Government Code Section 54954.3 states that every public meeting shall provide an opportunity for the public to address the Tracy City Council on any item, before or during consideration of the item, however no action shall be taken on any item not on the agenda.

Remote Access to City of Tracy Council Meeting:
In accordance with the guidelines provided in Executive Order N-29-20 on social distancing measures, the City of Tracy will allow for remote participation at the upcoming Special City Council meeting on Tuesday, November 10, 2020.

As always, the public may view the City Council meetings live on the City of Tracy's website at www.CityofTracy.org or on Channel 26. To view from the City's website, select "Watch Live Council Meetings" from the drop down menu "Select an Online Service" at the top of the City's homepage. You will be directed to the "Council Meeting Videos" page where you may select the video for the appropriate date under "Upcoming Events."

If you only wish to watch the meeting and do not wish to address the Council, the City requests that you stream the meeting through the City's website or watch on Channel 26.

Remote Public Comment:
Public comment, limited to 250 words or less, submitted via email ***will be accepted for agendized items before the start of the Council meeting at 6:00 p.m. Please send an email to*** *publiccomment@cityoftracy.org and Identify the item you wish to comment on in your email's subject line.*

During the upcoming Council meeting public comment will be accepted via the options listed below. If you would like to comment remotely, please follow the protocols below:

- *Comments via:*
  - **Phone** by dialing (209) 831-6010, or
  - **Online by visiting** https://cityoftracyevents.webex.com and using the following **Event Number:** 126 307 9998 and **Event Password**: TracyCC
  - ***If you would like to participate in the public comment anonymously***, you may submit your comment via phone or in WebEx by typing "Anonymous" when prompted to provide a First and Last Name and inserting Anonymous@example.com when prompted to provide an email address.

- *Protocols for submitting comments by **phone**:*
  - *Comments received by phone for the "Items from the Audience/Public Comment" portion of the agenda must be received by the time the Mayor opens that portion of the agenda for discussion.*
  - *Comments received by phone on each "Agendized Item" will be accepted until the Mayor announces that public comment for that item is closed.*

- *Protocols for commenting via WebEx:*
  - *If you wish to comment under "Items from the Audience/Public Comment" portion of the agenda:*
    - *Listen for the Mayor to open "Items from the Audience/Public Comment", then raise your hand to speak by clicking on the Hand icon on the Participants panel to the right of your screen.*
    - *If you no longer wish to comment, you may lower your hand by clicking on the Hand icon again.*
  - *Comments for the "Items from the Audience/Public Comment" will be accepted until the public comment period is closed.*

- *The total allotted time for public comment under "Items from the Audience/Public Comment" will be 15 minutes:*

1. Call to Order

2. Roll Call

3. Items from the Audience - Items from the audience - *In accordance with Council Meeting Protocols and Rules of Procedure,* adopted by Resolution 2019-240, a five-minute maximum time limit per speaker will apply to all individuals speaking during "Items from the Audience/Public Comment". For non-agendized items, Council Members may briefly respond to statements made or questions posed by individuals during public comment; ask questions for clarification; direct the individual to the appropriate staff member; or request that the matter be placed on a future agenda or that staff provide additional information to Council.

4. DISCUSSION ITEMS

4.A. PUBLIC HEARING TO CONSIDER APPLICATIONS FOR AN AMENDMENT TO THE NORTHEAST INDUSTRIAL SPECIFIC PLAN AND A DEVELOPMENT REVIEW PERMIT FOR AN INDUSTRIAL BUILDING AND ASSOCIATED SITE IMPROVEMENTS ON AN APPROXIMATELY 86-ACRE AREA SOUTH OF E. GRANT LINE ROAD, EAST OF SKYLARK WAY, AND WEST OF CHRISMAN ROAD (ASSESSOR'S PARCEL NUMBERS 250-020-93, 250-020-80, 250-020-81, AND 250-020-95). APPLICANT IS HPA, INC. AND PROPERTY OWNER IS PROLOGIS, L.P. – APPLICATION NUMBERS SPA20-0005 AND D20-0017; AND A COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING BETWEEN PROLOGIS, L.P. AND THE CITY OF TRACY

4.B. PUBLIC HEARING TO CONSIDER INTRODUCING AN ORDINANCE APPROVING AN AMENDMENT TO THE DEVELOPMENT AGREEMENT WITH TRACY HILLS PROJECT OWNER, LLC AND TRACY PHASE I, LLC FOR THE TRACY HILLS PROJECT LOCATED AT THE SOUTHWEST CORNER OF CORRAL HOLLOW ROAD AND TRACY HILLS DRIVE, APPLICATION NUMBER DA20-0001

4.C. PUBLIC HEARING TO CONSIDER APPROVING THE TRACY HILLS PHASE 1B/1C PROJECT, WHICH INCLUDES APPROVING A GENERAL PLAN AMENDMENT, INTRODUCING AN ORDINANCE APPROVING A TRACY HILLS SPECIFIC PLAN AMENDMENT, APPROVING A LARGE-LOT VESTING TENTATIVE SUBDIVISION MAP, AND APPROVING A SMALL-LOT VESTING TENTATIVE SUBDIVISION MAP TO CREATE 432 SINGLE-FAMILY RESIDENTIAL LOTS AND 74 OTHER PARCELS LOCATED ON APPROXIMATELY 310 ACRES IN THE VICINITY OF TRACY HILLS DRIVE, WEST OF PHASE 1A. THE APPLICANT IS JOHN PALMER. APPLICATION NUMBERS GPA19-0001, SPA19-0002, TSM18-0007 AND TSM18-0006

4.D. PUBLIC HEARING TO CONSIDER APPROVING A REVISION TO THE TRACY HILLS KT PROJECT, WHICH INCLUDES INTRODUCING AN ORDINANCE APPROVING A TRACY HILLS SPECIFIC PLAN AMENDMENT AND APPROVING A VESTING TENTATIVE SUBDIVISION MAP TO INCREASE THE NUMBER OF LOTS IN THE TRACY HILLS KT PROJECT FROM 185 TO 214, LOCATED ON APPROXIMATELY 45 ACRES EAST OF CORRAL HOLLOW ROAD IN THE VICINITY OF TRACY HILLS DRIVE

4.E. PUBLIC HEARING TO INTRODUCE AN ORDINANCE RESTRICTING THE LOCATION OF TOBACCO RETAILERS

5. Council Items and Comments

6. Adjournment

Robert Rickman

Mayor

Posting Date: Thursday, November 5, 2020

The City of Tracy complies with the Americans with Disabilities Act and makes all reasonable accommodations for the disabled to participate in public meetings. Persons requiring assistance or auxiliary aids in order to participate should call City Hall (209-831-6105), at least 24 hours prior to the meeting.

Any materials distributed to the majority of the Tracy City Council regarding any item on this agenda will be made available for public inspection in the City Clerk's office located at 333 Civic Center Plaza, Tracy, during normal business hours.

November 10, 2020

AGENDA ITEM 4.A

REQUEST

PUBLIC HEARING TO CONSIDER APPLICATIONS FOR AN AMENDMENT TO THE NORTHEAST INDUSTRIAL SPECIFIC PLAN AND A DEVELOPMENT REVIEW PERMIT FOR AN INDUSTRIAL BUILDING AND ASSOCIATED SITE IMPROVEMENTS ON AN APPROXIMATELY 86-ACRE AREA SOUTH OF E. GRANT LINE ROAD, EAST OF SKYLARK WAY, AND WEST OF CHRISMAN ROAD (ASSESSOR'S PARCEL NUMBERS 250-020-93, 250-020-80, 250-020-81, AND 250-020-95). APPLICANT IS HPA, INC. AND PROPERTY OWNER IS PROLOGIS, L.P. – APPLICATION NUMBERS SPA20-0005 AND D20-0017; AND A COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING BETWEEN PROLOGIS, L.P. AND THE CITY OF TRACY

EXECUTIVE SUMMARY

The request is for City Council consideration of the following proposals:
1) an amendment to the Northeast Industrial Specific Plan to permit light industrial buildings to be up to 125 feet in height with a building setback of 250 feet to the property line on a specific site, and
2) a development review permit application for an industrial project consisting of a 99-foot tall, 1,355,618 square foot building and associated parking, trucking, and landscaping areas on the subject site, and
3) a Community Benefit Memorandum of Understanding between Prologis, L.P. and the City of Tracy.

DISCUSSION

Project Background, Location, and Description

The Northeast Industrial (NEI) Specific Plan area is approximately 870 gross acres located in the northeastern portion of the City of Tracy. The NEI Specific Plan was preceded by the NEI Planned Unit Development (PUD), adopted in May 1996. In August 2012, the NEI PUD was rezoned to the NEI Specific Plan. The NEI Specific Plan guides the development for properties in this area, including land use, development standards, streets, and utilities. All development applications for projects in the NEI area are evaluated against the policies in the NEI Specific Plan.

On May 26, 2020, the City received an application for an industrial project located on the south side of Grant Line Road, between Chrisman Road and Skylark Way, a site totaling approximately 86 acres and located within the NEI Specific Plan area. The application proposes a 1,355,618-square foot, 99-foot tall industrial building comprised of office and warehouse uses and four elevated robotics sorting platforms above the ground floor with associated parking, landscaping, and trucking areas. A development review permit and an amendment to the NEI Specific Plan regulations for maximum building height are necessary before such a project could be approved to be constructed.

Specific Plan Amendment

The project site is designated Industrial under the General Plan, is zoned NEI Specific Plan, and is designated Light Industrial in the NEI Specific Plan.

The proposed use is permitted under the NEI Specific Plan, but the proposed building height exceeds the allowable height of 60 feet. Therefore, the applicant proposes an amendment to the NEI Specific Plan that would allow buildings up to 125 feet to be applicable only to industrial buildings on the project site as described above (Attachment A). The proposed amendment would also establish a setback for buildings that are taller than 60 feet to be a minimum of 250 feet to any property line. The proposed amendment is consistent with the General Plan land use designation of Industrial.

It should be noted that building height limitations vary across the City; for example, building height limitation for industrial development at Cordes Ranch is 100 feet, whereas in the M1 industrial zoning district there is no height limit.

Development Plan, Architecture, and Circulation

The Project is proposed on a site that is currently comprised of four parcels, one of which has been constructed as a private road extending from the Paradise Road bulb to Skylark Way. As part of this Project, the parcels will be merged together and Paradise Road will be reconstructed as a public roadway built to City standards south of the project site (Attachment B). The applicant worked with City staff on the design of the roadway reconstruction, and the roadway will be dedicated to the City upon completion. Recommended Condition of Approval B.3.4 requires the applicant to landscape and irrigate the remaining privately-owned land south of reconstructed Paradise Road.

The proposed development plan consists of a new industrial building, a parking area with over 1,800 automobile parking stalls, a trucking area with over 230 trailer stalls, and a generous amount of landscaping. The proposed building footprint is approximately 823,522 sf with four levels each of 133,024 sf of occupiable floor area and 532,5466 sf of non-occupiable robotic platforms above, bringing the building to be approximately 99 feet tall. The proposed building meet the City's Design Goals and Standards for industrial architecture. The building uses a combination of concrete, metal, and accent colors to create interest and variety horizontally across the building and vertically up the building. The building's massing is broken up by popping out the ground floor and stepping the upper stories back. The dock doors are proposed on the south side of the building and screened by landscaping and a decorative screen wall so that they will not be visible from heavily traveled public roadways. Associated structures, such as guard shacks, a pump house, a bus shelter, a smokers' shelter, and a bike shelter are also proposed onsite and will be painted to match the main building in accordance with City Standards, which require all onsite structures to be architecturally complementary.

The site plan proposes through-circulation with separated areas for automobiles and trucks. The site will be served by three driveways on Grant Line Road, two on Skylark Way, and one on Chrisman Road. An abundance of automobile parking as well as a bus stop are provided to serve the needs of the anticipated tenant. To screen the view of the large parking and trucking areas from heavily-traveled roadways, a landscaped berm with decorative screen wall will be constructed along the Grant Line Road and

Chrisman Road frontages. The project site will also have large, landscaped areas on the northeast, west, and south perimeters, further softening public views of the tall building.

Planning Commission Recommendation

On October 28, 2020, the applications were considered by the Planning Commission in a public hearing. Staff delivered a report detailing the proposal and analysis, and the South San Joaquin County Fire Authority (SSJFA) Fire Chief spoke on their ability to serve buildings over 75 feet in height, the first in their service area. After receiving comments from the public relating to construction labor and discussion amongst the Commission relating to fire prevention service, building height, and landscaping, the Chair made a motion to recommend that the NEI Specific Plan be amended to allow a maximum building height of 100 feet, rather than the applicant's request of 125 feet, to align with the proposed building height of 99 feet. The motion was not seconded. The Vice Chair then made a motion to recommend approval of the project as recommended by staff, and the motion passed, 4:1.

Environmental Document

The Project is exempt from the California Environmental Quality Act per Sections 15162(a) and 15168(c)(2), pertaining to projects with a certified Environmental Impact Report (EIR) where the Project does not propose substantial changes that will result in a major revision of the previous EIR. On May 8, 1996, the City of Tracy certified an Environmental Impact Report (EIR) for the Northeast Industrial (NEI) Planned Unit Development (SCH # 95102050), under which the subsequent rezoning of the NEI Planned Unit Development to NEI Specific Plan by the Tracy City Council in 2012 was found consistent. The Project does not propose new significant changes to the environment that were not analyzed in the NEI EIR, including the areas of traffic, air quality, utilities, and aesthetics. The determination pursuant Section 15162(a) of the CEQA Guidelines is presented in an environmental analysis prepared by De Novo Planning Group (Attachment C).

Community Benefit Memorandum of Understanding

Since as early as 2013, Prologis has been an important developer in Tracy, and has developed more than 15,000,000 square feet of employment- and revenue-generating uses in the City. In recognition of and appreciation for its long-standing and mutually beneficial relationship with the City and the City's willingness to consider its requested modifications to the NEI Specific Plan development standards for the currently-proposed Project, Prologis has offered to provide the City with substantial funding for a significant community benefit, in the form of a multi-use gymnasium or similar recreational amenity. On July 28, 2020, Council gave direction to staff to negotiate a Community Benefit Memorandum of Understanding (MOU) with Prologis to implement its offer of a community benefit. The following are key terms of the Community Benefit MOU:

- Term
  - The Term will commence upon execution of the MOU and will expire on the date that is four (4) years after the Project approvals become final and are no longer subject to legal challenges.

- Developer Contribution
  - o Prologis shall contribute four million dollars ($4,000,000), which contribution is intended by the City and Prologis to fund the development of a proposed multi-purpose gymnasium or other recreational amenity (the "Future Project")

- Community Benefit
  - o During the Term of the MOU, the City and Prologis will work cooperatively to develop plans for the Future Project
  - o The specific nature of the Future Project will ultimately be determined by the City in consultation with Prologis and is expected to be refined over the Term of the MOU
  - o The location of the Future Project will be determined by the City

STRATEGIC PLAN

This agenda item does not relate to any of the Council's Strategic Plans.

FISCAL IMPACT

This agenda item will not require any expenditure of funds. The applicant paid the application processing fees established by the City Council for the specific plan amendment and development review permit applications and entered into a Cost Recovery Agreement for the consultant and staff time that was required to prepare the technical studies and environmental analysis documentation in accordance with CEQA. The applicant will also pay all of the appropriate building permit and development impact fees upon the commencement of project improvements.

RECOMMENDATION

The Planning Commission and staff recommend the City Council do the following:

1. Introduce an ordinance amending the NEI Specific Plan relating to maximum height and minimum setbacks for buildings located south of Grant Line Road, east of Skylark Way, and west of Chrisman Road, and
2. Approve Development Review Permit application D20-0017 for an approximately 1,355,618-square foot, 99-foot tall industrial building and associated parking, landscaping, and trucking areas on property located south of Grant Line Road, east of Skylark Way, and west of Chrisman Road.

Staff recommends that Council approve, by resolution, the Community Benefit MOU with Prologis L.P. for the development of or funding of a multi-purpose gymnasium or similar recreational amenity.

Prepared by: Kimberly Matlock, Associate Planner

Reviewed by: Bill Dean, Assistant Development Services Director
Karin Schnaider, Finance Director
Andrew Malik, Assistant City Manager

Approved by: Jenny Haruyama, City Manager

ATTACHMENTS

Attachment A – Excerpt from NEI Specific Plan with Proposed Amendment in Redline
Attachment B – Location Map, Project Plans, and Perspective Images
Attachment C – Environmental Analysis by De Novo Planning Group
Attachment D – Community Benefit MOU

Street Lighting

1. Illumination standards for arterial and industrial streets should reflect the different right-of-way widths and functions.
2. Light fixtures and standards shall meet all safety standards and shall be employed throughout the length of the street. It is recommended that one lighting fixture style be employed for use on all streets. Where possible, light standards shall be located in medians.

Building Floor Area Ratio and Height

Land Use	*Max. Floor Area Ratio*	*Max. Building Height*
General Commercial	0.35	46 ft.
Office	0.35	60 ft.
Light Industrial	0.50	60 ft. *except as noted below

* The maximum building height for Light Industrial uses is 60 feet, except for the area bounded by Grant Line Rd. to the north, Chrisman Rd. to the east, Skylark Way to the west, and Paradise Road to the south, where the maximum building height is 125 feet.

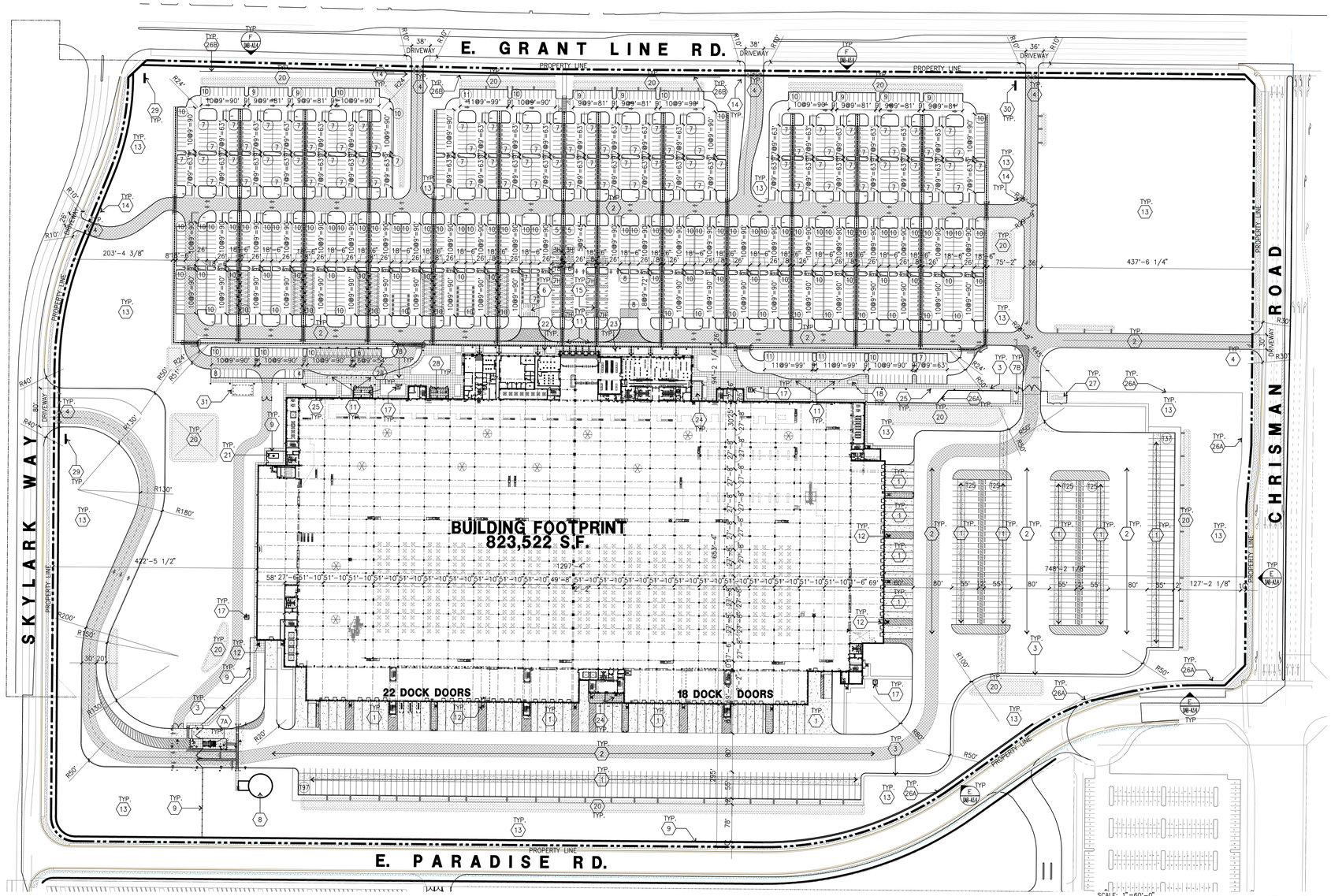
Building Setbacks

The following shall be the minimum building and parking setbacks required for all building types. Figure 14 illustrates these guidelines.

1. Building setback from any property line adjacent to a street or Caltrans right-of-way shall be 25 feet minimum. Rear and side yard building setbacks from property lines not adjacent to a street or Caltrans right-of-way shall be 15 feet minimum.
   Building setback from any property line for buildings exceeding 60 feet in height located in the area bounded by Grant Line Rd. to the north, Chrisman Rd. to the east, Skylark Way to the west, and Paradise Road is 250 feet minimum.
2. A 5 foot wide landscape setback is required along property lines not adjacent to a right-of-way. On the property lines perpendicular to the street frontage on industrial streets, the landscaped setback is only required to a point 150 feet onto the parcel from the street right-of-way or 50 feet back of building face, whichever is greater.
3. Parking setback from any property line along a public street or the Caltrans right-of-way for commercial land uses shall be 10 feet and for industrial uses shall be 15 feet.
4. Parking shall not be permitted within 10 feet of the building entry face of any commercial structure. In the event the building has an arcade or other shade structure along this frontage, the structure can be located within this required setback. Parking shall not be permitted within 15 feet of the office face or portion of a building. On industrial buildings, a 15 foot setback to the parking area shall be provided at building entries.
5. Commercial buildings shall be sited so as to create and enhance the streetscape. This can only be accomplished if all or a portion of the buildings are located near the street. On commercial sites of over 4 acres, at least one building must be located with a minimum setback from public-right-of-way to building face of 50 feet. On corner sites adherence to this requirement is encouraged on both frontages, however, only required on the major street frontage.

Attachment B

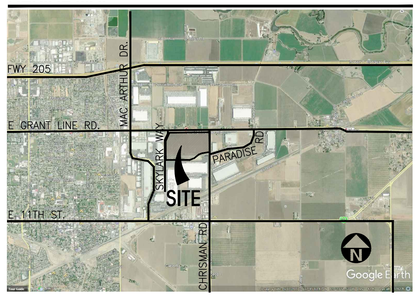
RECEIVED
October 21, 2020
City of Tracy
Development Services



OVERALL SITE PLAN

scale: 1"=60'-0" (A)

AERIAL MAP



TABULATION

	OCCUPIED AREA	NON OCCUPIED AREA RSP (ROBOTIC STORAGE PLATFORM)
SITE AREA		
In s.f.	3,746,777 s.f.	
In acres	86.0 ac	
BUILDING AREA		
Office	40,581 s.f.	
Warehouse	782,941 s.f.	
BUILDING FOOTPRINT	**823,522** s.f.	
Level 2	133,024 s.f.	532,446 s.f.
Level 3	133,024 s.f.	532,446 s.f.
Level 4	133,024 s.f.	532,446 s.f.
Level 5	133,024 s.f.	532,446 s.f.
TOTAL AREA	**1,355,618** s.f.	**2,129,784** s.f.
CONSTRUCTION TYPE	IA	
OCCUPANCY	B/S-1/A2/A3	
OVERALL COVERAGE	**36.18%**	
FLOOR AREA RATIO		
Max. allowed - .50		
Actual - 0.36		
AUTO PARKING REQUIRED *(City Code)*		
Office: 1 / 250 s.f.	163 stalls	
Whse: 1st 20K @ 1/1,000 s.f.	20 stalls	
2nd 20K @ 1/2,000 s.f.	10 stalls	
above 40K @ 1/4,000 s.f.	329 stalls	
TOTAL	522 stalls	
AUTO PARKING PROVIDED		
Standard (18-6" X 9')	1,630 stalls	
Accessible standard (9' x 18'-6")	20 stalls	
Accessible van (12' x 18'-6")	8 stalls	
EV/Clean Air/Vanpool (8% req'd) including below	155 stalls	
EV/Clean Air/Vanpool	38 stalls	
Future EV Charging Station 96% Req'd) including below	117 stalls	
- Future EVCS Standard Accessible	4 stalls	
- Future EVCS (Van)	2 stalls	
- Future Ambulatory (18'-6" x 10')	4 stalls	
TOTAL	1,823 stalls	
Motorcycle Parking	12 stalls	
TRAILER PARKING PROVIDED		
Trailer (12' x 55')	234 stalls	
BICYCLE PARKING REQUIRED		
5% of total car parking (Long Term)	91	
Short Term (Not to generate visitor)	2	
BICYCLE PARKING PROVIDED		
Long Term	120	
Short Term (Not to generate visitor)	20	
ZONING ORDINANCE FOR CITY		
Zoning Designation - Northeast Industrial		
MAXIMUM BUILDING HEIGHT ALLOWED		
Max. allowed - 60'		
Actual - 125' (variance requested)		

SITE PLAN KEYNOTES

1. HEAVY BROOM FINISH CONC. PAVEMENT,
2. ASPHALT PAVING
3. CONCRETE WALKWAY
4. DRIVEWAY APRONS
5. 5'-6"X 5'-6" CONCRETE EXTERIOR LANDING PAD
6. MOTORCYCLE PARKING

7A. TILT-UP CONCRETE WALLED GUARD HOUSE SEE B/DAB-A4.1 & A/DAB-A3.4

7B. FUTURE GUARD HOUSE

8. FIRE PUMP HOUSE AND WATER STORAGE TANK SEE D/DAB-A3.4
9. 8' H TALL BLACK WROUGHT IRON FENCE.
10. PRE-CAST CONC. WHEEL STOP
11. CONC. FILLED GUARD POST 6" DIA., 48" H,, U.N.O.
12. EXTERIOR STAIR.
13. LANDSCAPE. SEE "L" DWGS.
14. ACCESSIBLE ENTRY SIGN
15. ACCESSIBLE PARKING STALL SIGN
16. ELECTRICAL ROOM
17. APPROXIMATE LOCATION OF THE TRANSFORMER. SEE DAB-A4.1 DWG.
18. EMPLOYEE DROP-OFF SHELTER. HANDI-HUT MODEL #6-3WSPH OR EQUAL. SEE B/DAB-A3.4
19. CONCRETE SIDEWALK. SEE CIVIL
20. STORM DRAINAGE OR TREATMENT. SEE CIVIL.
21. APPROXIMATE LOCATION OF EMERGENCY GENERATOR AND ASSOCIATED ELECTRICAL PANELS.
22. BIKE RACK, THE BIKE RACK LOCATION.
23. 30' H FLAG POLE AND LIGHTS.

24A. PRE-ENGINEERED SMOKERS SHELTER. SEE G/DAB-A3.4

25. PEDESTRIAN LIGHTS

26A. 8' TALL SCREEN WALL. SEE E/DAB-A3.4

26B. 3' TALL SCREEN WALL. SEE F/DAB-A3.4

27. SWITCH GEAR
28. COVERED BIKE SHELTER. SEE C/DAB-A3.4
29. MONUMENT SIGN 1. SEE G/DAB-A4.1 FOR DESIGN CONCEPT, SEPARATE SUBMITTAL WILL BE PROVIDED FOR SIGNS.
30. MONUMENT SIGN 2. SEE H/DAB-A4.1 FOR DESIGN CONCEPT, SEPARATE SUBMITTAL WILL BE PROVIDED FOR SIGNS.
31. PRE-ENGINEERED COVERED BREAK AREA SHELTER SEE G/DAB-A3.4 SIM. WITH NO FENCE

SITE PLAN GENERAL NOTES

1. THE SOILS REPORT WILL BE PREPARED BY ENGEO AND SUBMITTED WITH THE BUILDING PERMIT APPLICATION.
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM, IF REQUIRED.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C" DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY W/ 1:20 MAX. SLOPE. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". SEE "L" DRAWINGS FOR FINISH.
11. NOT USED
12. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
13. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
14. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
15. NOT USED
16. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
17. NOT USED.
18. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB

SITE LEGEND

- LANDSCAPED AREA
- AC. PAVING – SEE "C" DRWGS. FOR THICKNESS
- CONCRETE PAVING SEE "C" DRWGS. FOR THICKNESS
- STANDARD PARKING STALL (9' X 18'-6")
- HANDICAP PARKING STALL (9' X 18'-6")
- VAN HANDICAP PARKING STALL (12' X 18'-6")

PROJECT INFORMATION

Project Address
GRANT LINE ROAD,
TRACY, CA

Assessors Parcel Number
250-020-93

Owner/Applicant
PROLOGIS INC.
815 INTERNATIONAL PKWY
TRACY, CA 95377
CONTACT: MATT SIMS
TEL: (510) 661-4012

Code
CBC 2019
CPC 2019
CMC 2019
CEC 2019

Applicant's Representatives
HPA, INC.
600 GRAND AVE., SUITE 302
OAKLAND, CA 94610
CONTACT: TERESA GOODWIN
PHONE: (925) 413-6896

Zoning
SPECIFIC PLAN: NORTH EAST INDUSTRIAL SPECIFIC PLAN

HPA architecture
hpa, inc.
18831 Bardeen Avenue, Suite 100
Irvine, CA
92612
tel: 949•863•1770
email: hpa@hparchs.com

LICENSED ARCHITECT
YONG KIM
C-29451
3-31-21
RENEWAL DATE
STATE OF CALIFORNIA

Owner:

PROLOGIS®
Ahead of what's next

3353 Gateway Blvd.
Fremont, CA 94538
tel: (510) 656-1900

Project:

Project Big Bird
Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

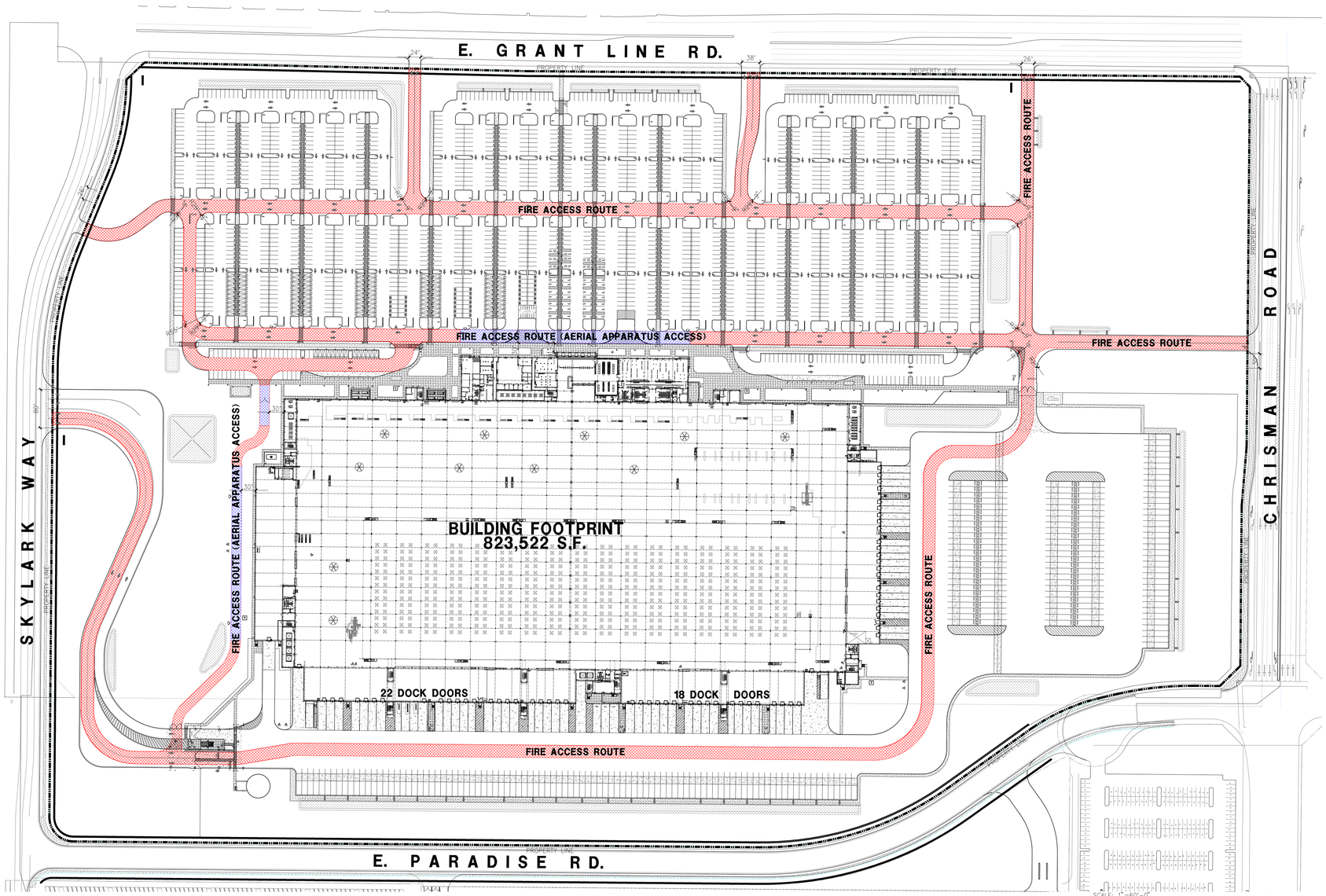
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: Overall Site Plan

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A1.1



OVERALL SITE PLAN (A)
scale: 1"=60'-0"
SCALE: 1"=60'-0"
0 60' 120' 180'
PLAN NORTH
TRUE NORTH

HPA architecture

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18831 Bardeen Avenue, Suite 100
Irvine, CA
92612
tel: 949•863•1770

email: hpa@hparchs.com

LICENSED ARCHITECT
YONG HAM
C-29451
3-31-21
RENEWAL DATE
STATE OF CALIFORNIA

Owner:

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Ahead of what's next

3353 Gateway Blvd.
Fremont, CA 94538
tel: (510) 656-1900

Project:

Project Big Bird
Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

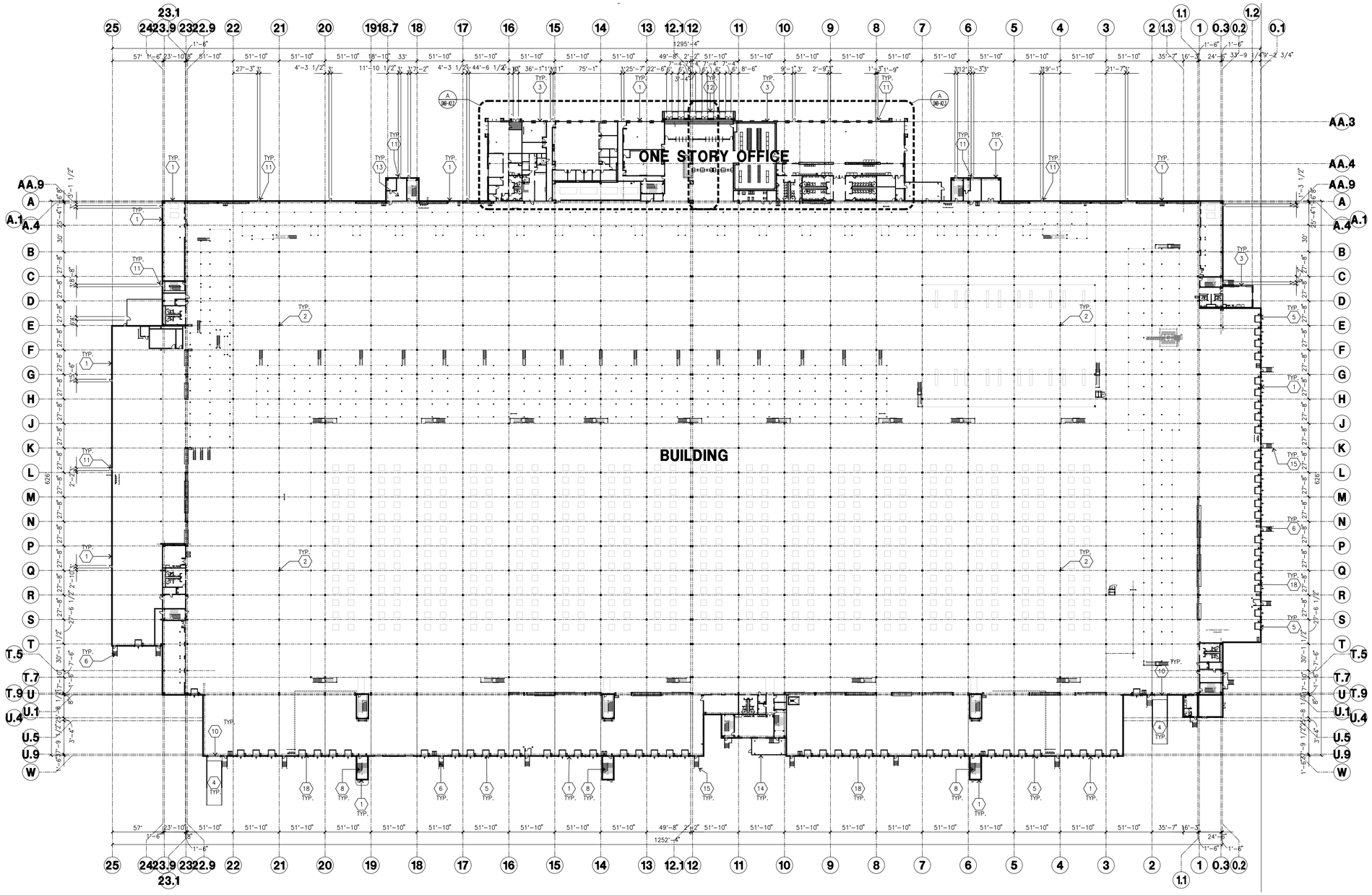
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: FIRE ACCESS SITE PLAN

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A1.1F



OVERALL FLOOR PLAN (A)
scale: 1"=50'-0"

SCALE: 1"=50'-0"
0 50' 100' 150'
TRUE NORTH

KEYNOTES - FLOOR PLAN

1. CONCRETE TILT-UP PANEL AND INSULATED METAL WALL PANEL. SEE ELEVATIONS.
2. STRUCTURAL STEEL COLUMN
3. TYPICAL STOREFRONT SYSTEM WITH GLAZING. SEE OFFICE BLOW-UP AND ELEVATIONS FOR SIZE, COLOR AND LOCATIONS.
4. CONCRETE RAMP W/ 42"HIGH CONC TILT-UP WALL AT TRUCK YARD SIDE OF RAMP
5. 9'-0"X10' TRUCK DOOR, SECTIONAL O'H., STANDARD GRADE.
6. EXTERIOR METAL STAIR
7. 5'-6"X5'-6" CONCRETE EXTERIOR LANDING PAD TYPICAL AT ALL EXTERIOR MAN DOORS
8. SITE - STAIR TOWER
9. DOCK BUMPER
10. 12'X14' AND 14'X16' DRIVE THRU. SECTIONAL OH.
11. 3'X7' HOLLOW METAL EXTERIOR MAN DOOR.
12. METAL CANOPY
13. ELECTRICAL ROOM
14. PRE-ENGINEERED SMOKERS SHELTER
15. CONC. FILLED GUARD POST. 6" DIA. U.N.O.. 48"H.
16. INTERIOR ROOF DRAIN W/ 2 OVERFLOW SCUPPERS, PAINTED TO MATCH BLD'G
17. NOT USED
18. Z GUARD PROTECTION

GENERAL NOTES - FLOOR PLAN

1. THIS BUILDING IS DESIGNED FOR HIGH PILE STORAGE WITH FIRE ACCESS MAN DOORS AT 100' +/-. A SEPARATE PERMIT WILL BE REQUIRED FOR ANY RACKING/CONVEYER SYSTEMS.
2. NOT USED.
3. THE BUILDING FLOOR SLAB IS FLAT, SEE CIVIL.
4. PROVIDE 6" DIA. CONCRETE BOLLARD AT ALL FIRE RISER AND UNPROTECTED INTERIOR ROOF DRAIN.
5. WAREHOUSE INTERIOR CONCRETE WALLS AND COLUMN PAINT PER OWNER RQMNTS ALL GYP. BD. WALLS IN WAREHOUSE TO RECEIVVE 1 COAT OF WHITE PRIMER.
6. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE PANEL WALL, GRIDLINE, OR FACE OF STUD U.N.O.
7. CONTRACTOR TO PROTECT AND KEEP THE FLOOR SLAB CLEAN. ALL EQUIPMENT TO BE DIAPERED INCLUDING CARS AND TRUCKS.

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Tracy, CA

Consultants:

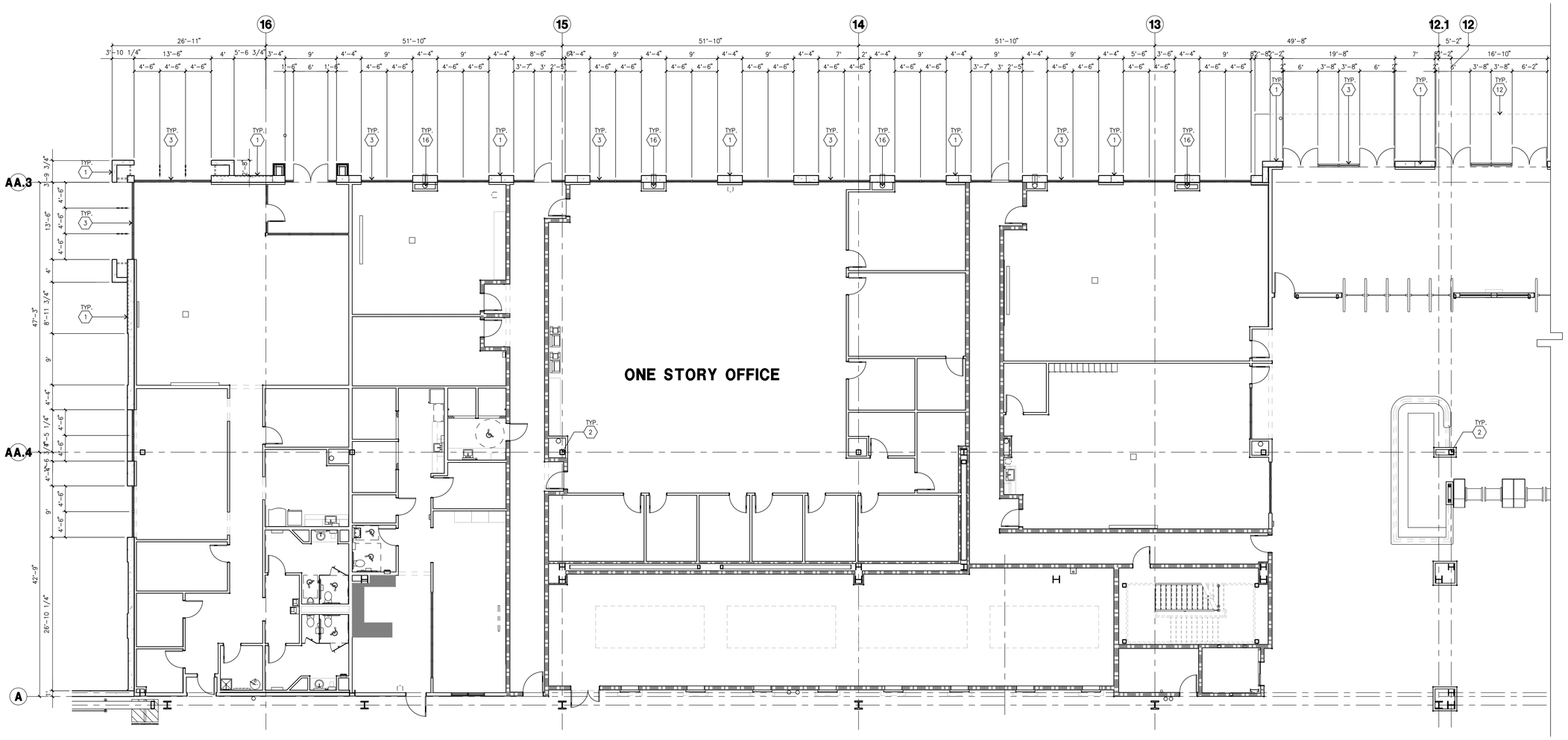
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: Overall Floor Plan

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A2.1



ENLARGED FLOOR PLAN (A)
scale: 1/8"=1'-0"

SCALE: 1/8"=1'-0"
0 8' 16' 24'
TRUE NORTH

KEYNOTES - FLOOR PLAN

1. CONCRETE TILT-UP PANEL AND INSULATED METAL WALL PANEL. SEE ELEVATIONS.
2. STRUCTURAL STEEL COLUMN
3. TYPICAL STOREFRONT SYSTEM WITH GLAZING. SEE OFFICE BLOW-UP AND ELEVATIONS FOR SIZE, COLOR AND LOCATIONS.
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12. METAL CANOPY
13. ELECTRICAL ROOM
14. PRE-ENGINEERED SMOKERS SHELTER
15. CONC. FILLED GUARD POST. 6" DIA. U.N.O.. 48"H.
16. INTERIOR ROOF DRAIN W/ 2 OVERFLOW SCUPPERS, PAINTED TO MATCH BLD'G
17. NOT USED
18. Z GUARD PROTECTION

GENERAL NOTES - FLOOR PLAN

1. THIS BUILDING IS DESIGNED FOR HIGH PILE STORAGE WITH FIRE ACCESS MAN DOORS AT 100' +/-. A SEPARATE PERMIT WILL BE REQUIRED FOR ANY RACKING/CONVEYER SYSTEMS.
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3-31-21
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STATE OF CALIFORNIA

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Project:

Project Big Bird
Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

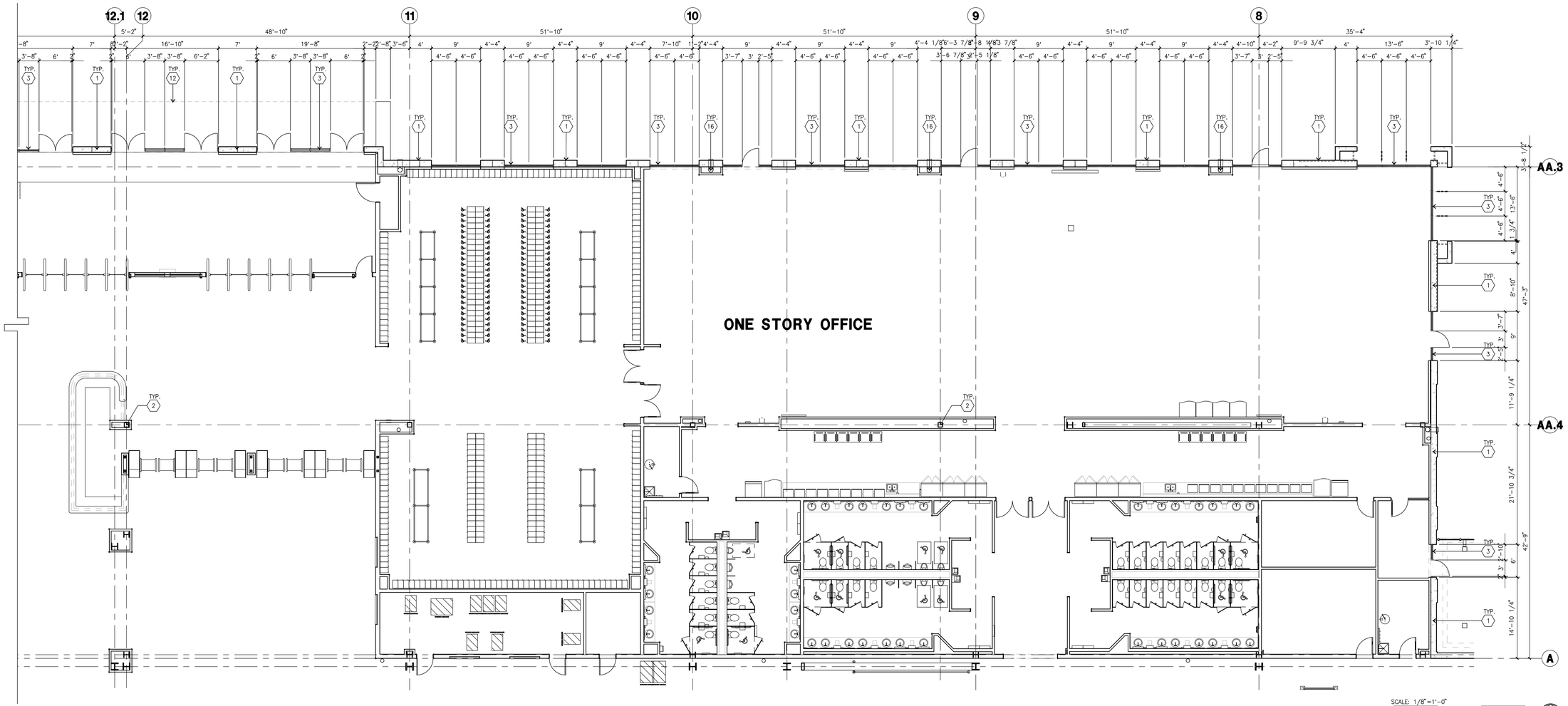
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: ENLARGED

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A2.2



ENLARGED FLOOR PLAN (A)
scale: 1/8"=1'-0"

SCALE: 1/8"=1'-0"
0 8' 16' 24'
TRUE NORTH

KEYNOTES - FLOOR PLAN

1. CONCRETE TILT-UP PANEL AND INSULATED METAL WALL PANEL. SEE ELEVATIONS.
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13. ELECTRICAL ROOM
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STATE OF CALIFORNIA

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Project:

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PHASE 3 G4+5

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Consultants:

CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

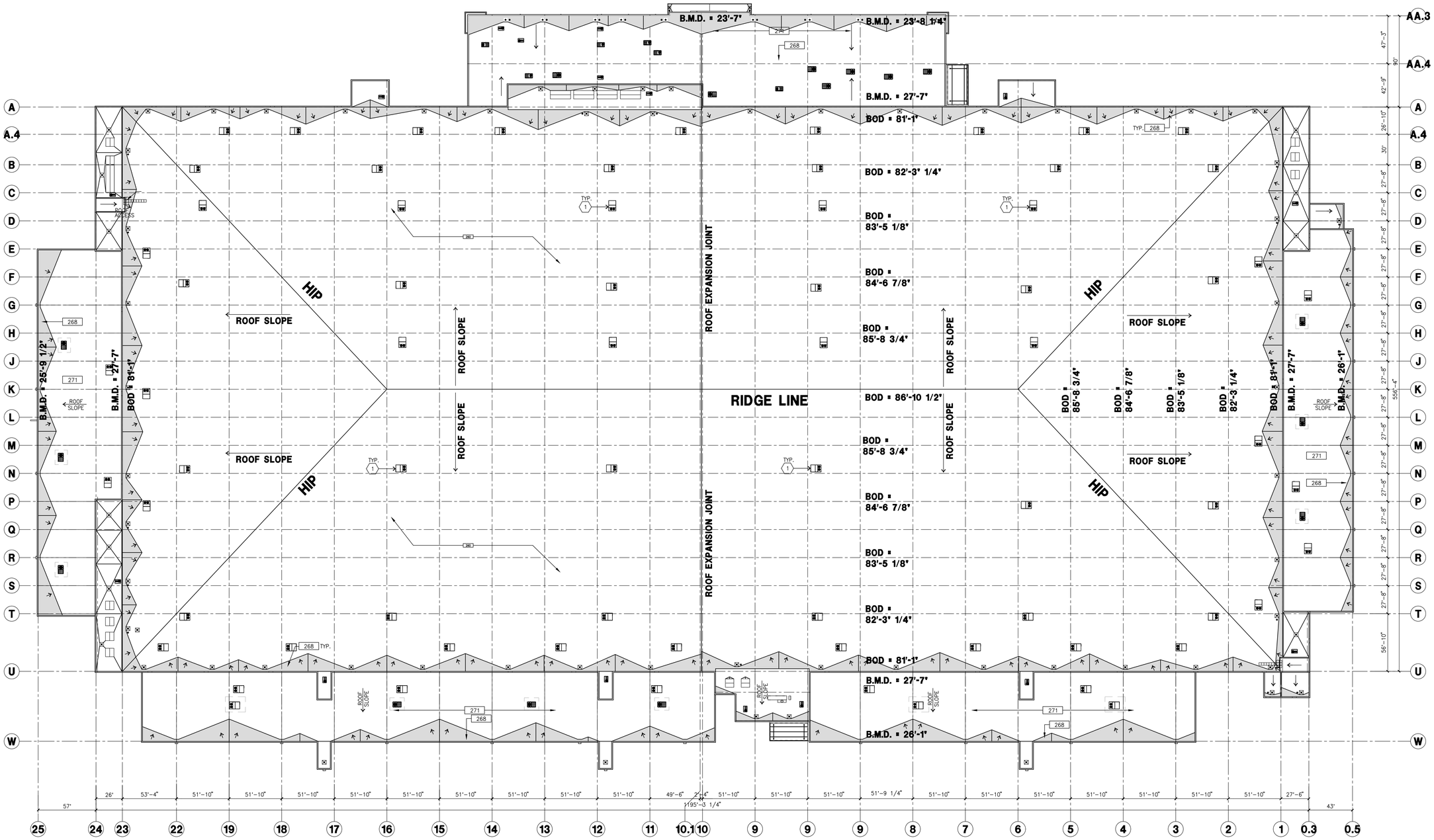
Title: ENLARGED

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A2.3

KEYNOTES	
260	MECHANICALLY ATTACHED, SINGLE PLY ROOFING MEMBRANE OVER 2-LAYERS (R-30) RIGID INSULATION ON METAL DECK
268	GRAY SHADED AREAS INDICATE SLOPE/TAPERED INSULATION FOR POSITIVE DRAINAGE TO ROOF DRAINS
271	MECHANICALLY ATTACHED, EPDM ROOFING OVER 2-LAYERS (R-30) RIGID INSULATION ON METAL DECK
BOD	
B.M.D	



OVERALL ROOF PLAN (1)
scale: 1" = 40'-0"

SCALE: 1" = 40'-0"
0 40' 80' 120'
TRUE NORTH

ROOF PLAN KEYNOTES

(1) MECHANICAL UNITS

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Owner:

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Project:

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PHASE 3 G4+5

Tracy, CA

Consultants:

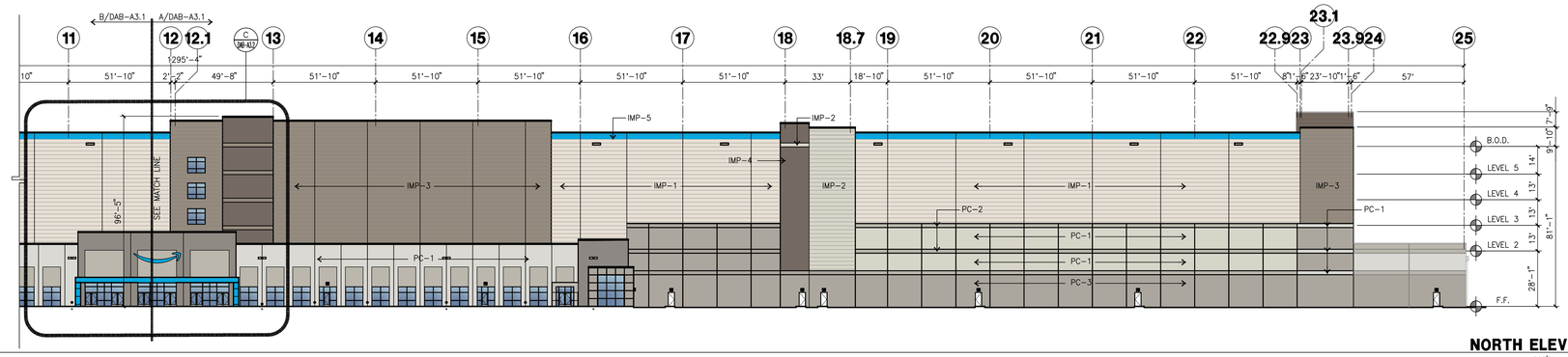
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: OVERALL ROOF PLAN

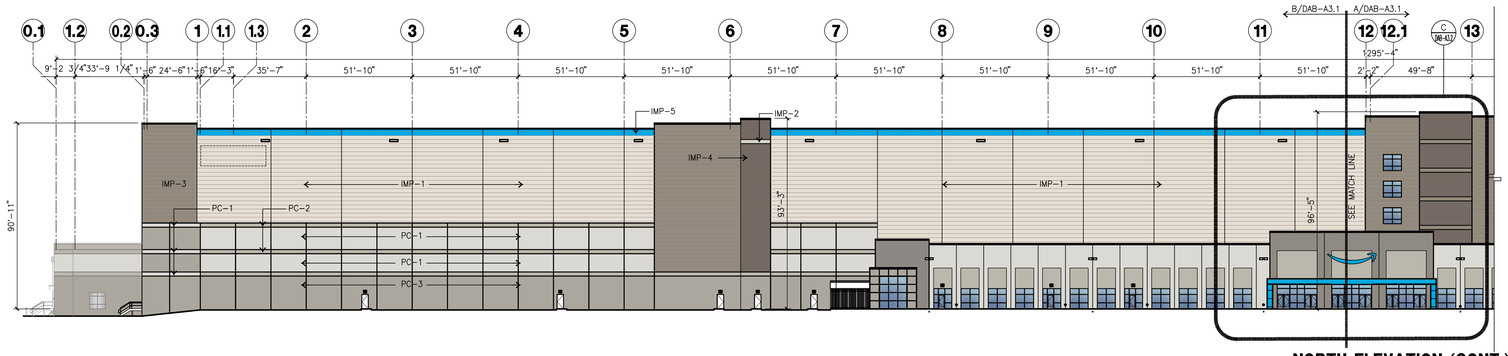
Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

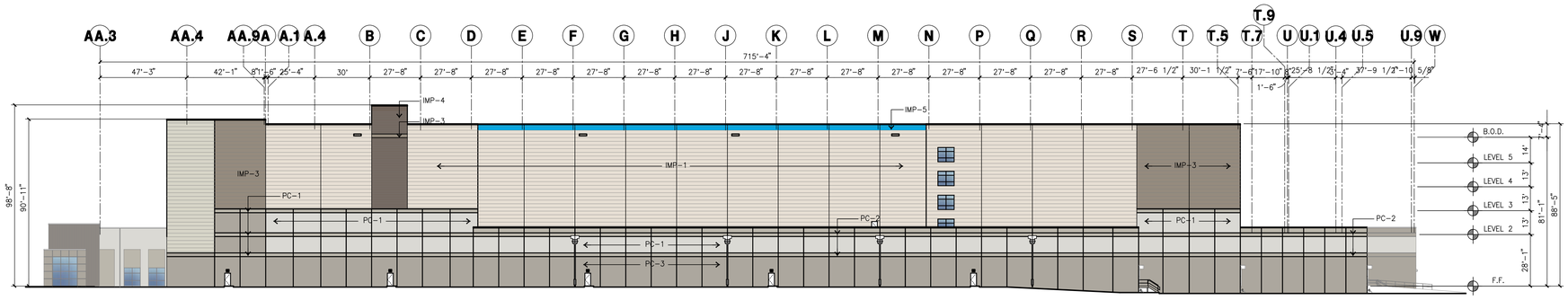
DAB-A2.10



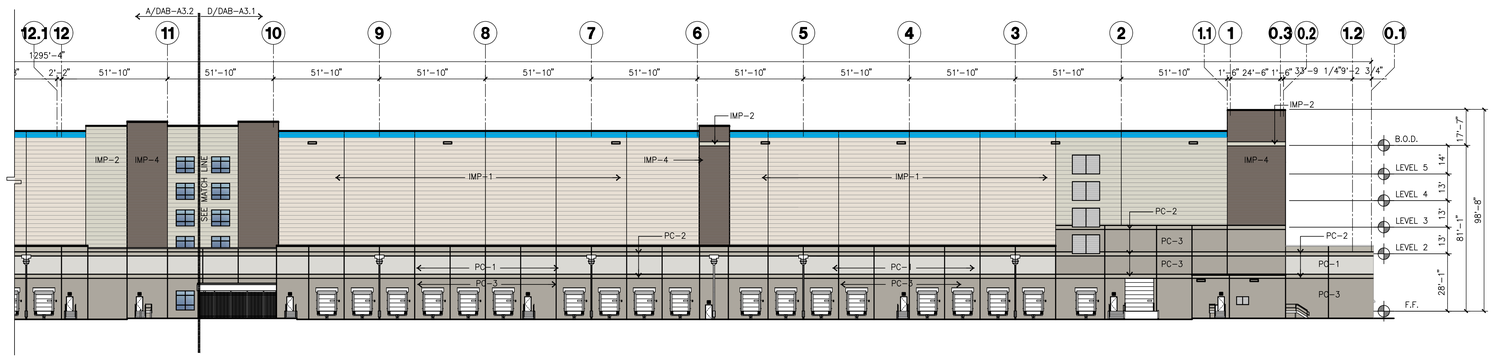
NORTH ELEVATION (A)
scale: 1"=30'-0"



NORTH ELEVATION (CONT.) (B)
scale: 1"=30'-0"



WEST ELEVATION (C)
scale: 1"=30'-0"



SOUTH ELEVATION (D)
scale: 1"=30'-0"

GENERAL NOTES - ELEVATIONS

A. ALL PAINT COLOR CHANGES TO OCCUR AT INSIDE CORNERS UNLESS NOTED OTHERWISE.
B. ALL PAINT FINISHES ARE TO BE FLAT UNLESS NOTED OTHERWISE.
C. T.O.P. EL.= TOP OF PARAPET ELEVATION.
D. F.F. = FINISH FLOOR ELEVATION.
E. STOREFRONT CONSTRUCTION: GLASS, METAL ATTACHMENTS AND LINTELS SHALL BE DESIGNED PER CITY REQUIREMENTS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.
F. CONTRACTOR SHALL FULLY PAINT ONE CONCRETE PANEL W/ SELECTED COLORS. ARCHITECT AND OWNER SHALL APPROVE PRIOR TO PAINTING REMAINDER OF BUILDING.
G. BACK SIDE OF PARAPETS TO HAVE SMOOTH FINISH AND BE PAINTED WITH ELASTOMERIC PAINT.
H. FOR SPANDREL GLAZING, ALLOW SPACE BEHIND SPANDREL TO BREATH.
J. USE ADHESIVE BACK WOOD STRIPS FOR ALL REVEAL FORMS.
K. THE FIRST COAT OF PAINT TO BE ROLLED-ON AND THE SECOND COAT TO BE SPRAYED-ON

GLAZING LEGEND

ALL GLAZING TO BE TEMPERED

GRAY TINTED GLASS

BUILDING FINISH KEY

IMP-1
INSULATED METAL PANEL
FLUROPON - "BONE WHITE"

IMP-2
INSULATED METAL PANEL
FLUROPON - "DRIFT WOOD"

IMP-3
INSULATED METAL PANEL
FLUROPON - "DOVE GRAY"

WAVE IMP-4
INSULATED METAL PANEL-WAVE TEXTURE
FLUROPON - "ZINC GRAY"

IMP-5
INSULATED METAL PANEL
FLUROPON-MATCH PPG TENANT BLUE "PANTONE 2995C"
RGB 169 224

PC-1
PRECAST CONC. PANEL, SW 7646 (FIRST STAR)

PC-2
PRECAST CONC. PANEL, SW 7016 (MINDFUL GRAY)

PC-3
PRECAST CONC. PANEL, SW 7017 (DORIAN GRAY)

PC-4
PRECAST CONC. PANEL, SW 7018 (DOVE TAIL)

PC-5
PRECAST CONC. PANEL, SW 9174 (MOTH WING)

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email: hpa@hparchs.com

LICENSED ARCHITECT
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3-31-21
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Owner:

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Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

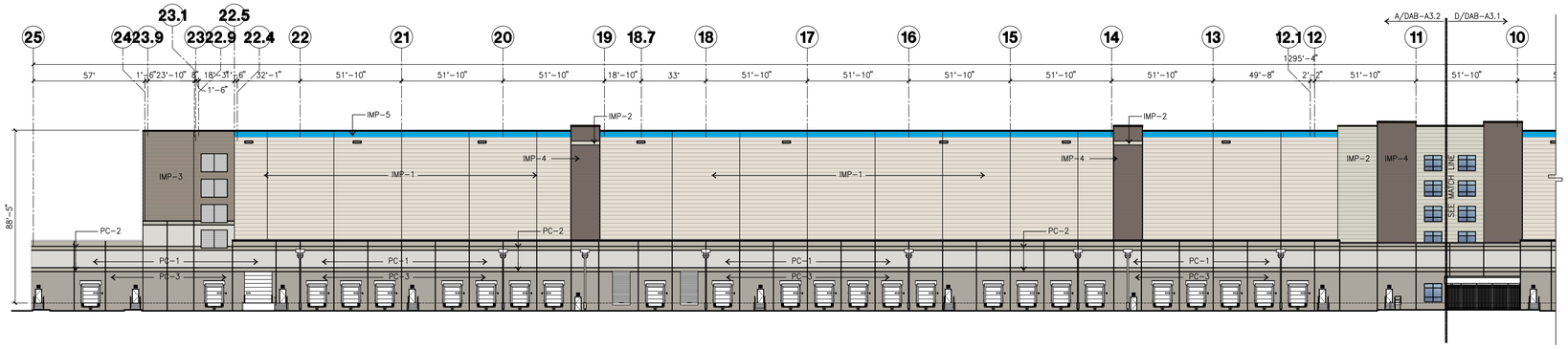
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: ELEVATION

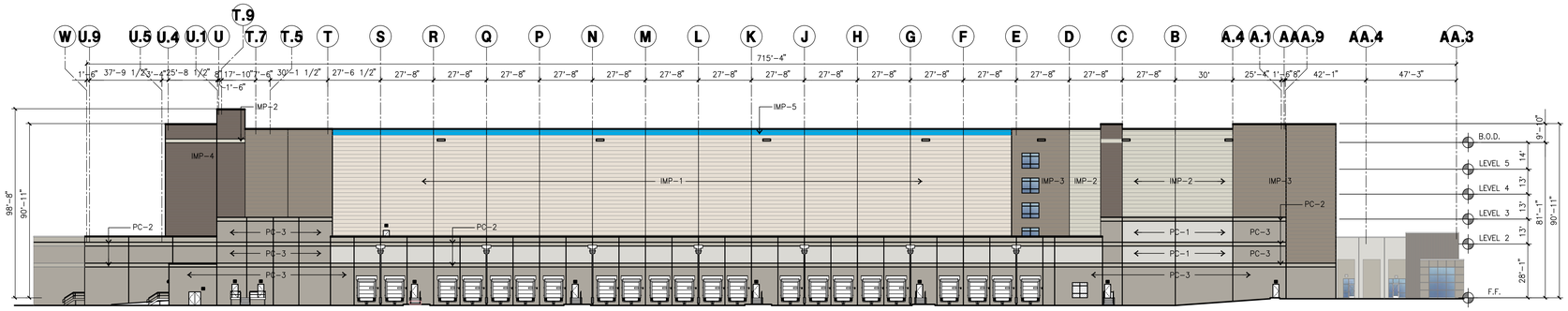
Project Number: 20160
Drawn by: CG
Date: 7/01/20
Revision:

Sheet:

DAB-A3.1



SOUTH ELEVATION (CONT.) A
scale: 1"=30'-0"



EAST ELEVATION B
scale: 1"=30'-0"

ENLARGED NORTH ELEVATION C
scale: 1/8"=1'-0"

GENERAL NOTES - ELEVATIONS

A. ALL PAINT COLOR CHANGES TO OCCUR AT INSIDE CORNERS UNLESS NOTED OTHERWISE.
B. ALL PAINT FINISHES ARE TO BE FLAT UNLESS NOTED OTHERWISE.
C. T.O.P. EL.= TOP OF PARAPET ELEVATION.
D. F.F. = FINISH FLOOR ELEVATION.
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GLAZING LEGEND

ALL GLAZING TO BE TEMPERED

GRAY TINTED GLASS

BUILDING FINISH KEY

IMP-1
INSULATED METAL PANEL
FLUROPON – "BONE WHITE"

IMP-2
INSULATED METAL PANEL
FLUROPON – "DRIFT WOOD"

IMP-3
INSULATED METAL PANEL
FLUROPON – "DOVE GRAY"

WAVE IMP-4
INSULATED METAL PANEL-WAVE TEXTURE
FLUROPON – "ZINC GRAY"

IMP-5
INSULATED METAL PANEL
FLUROPON–MATCH PPG TENANT BLUE "PANTONE 2995C"
RGB 169 224

PC-1
PRECAST CONC. PANEL, SW 7646 (FIRST STAR)

PC-2
PRECAST CONC. PANEL, SW 7016 (MINDFUL GRAY)

PC-3
PRECAST CONC. PANEL, SW 7017 (DORIAN GRAY)

PC-4
PRECAST CONC. PANEL, SW 7018 (DOVE TAIL)

PC-5
PRECAST CONC. PANEL, SW 9174 (MOTH WING)

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Tracy, CA

Consultants:

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PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

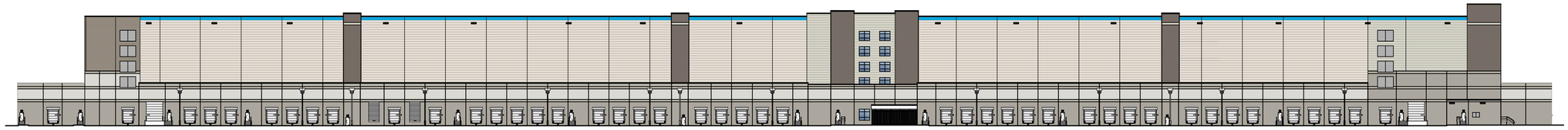
Title: ELEVATION

Project Number: 20160
Drawn by: CG
Date: 7/01/20
Revision:

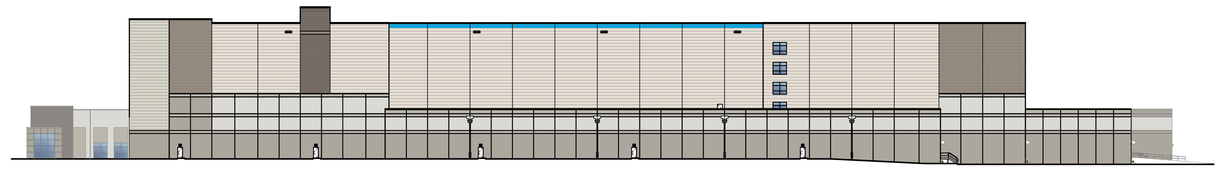
Sheet:

DAB-A3.2

RECEIVED
October 21, 2020
City of Tracy
Development Services

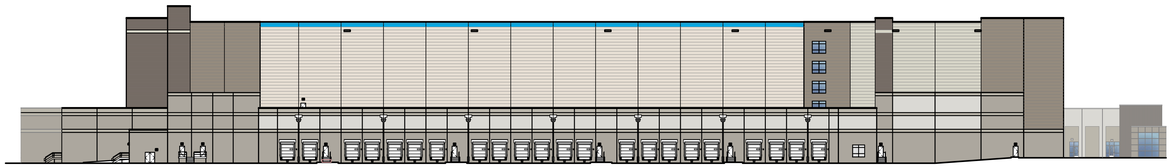


NORTH ELEVATION (A)
scale: 1" = 40'-0"



WEST ELEVATION (B)
scale: 1" = 40'-0"

SOUTH ELEVATION (C)
scale: 1" = 40'-0"



EAST ELEVATION (D)
scale: 1" = 40'-0"

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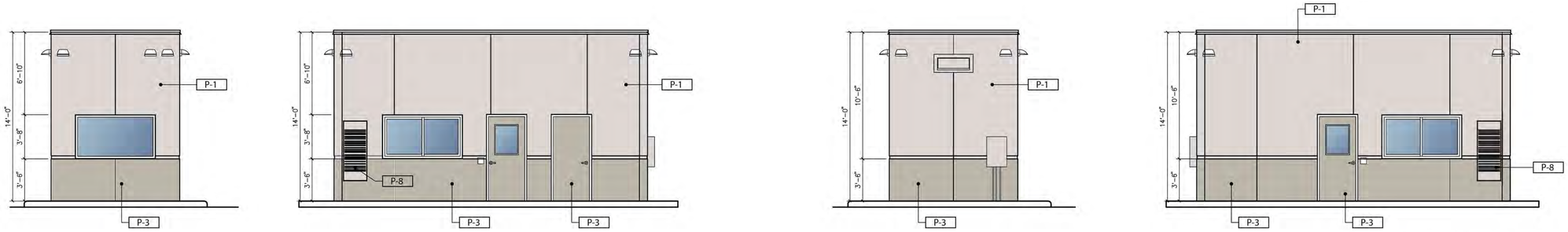
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

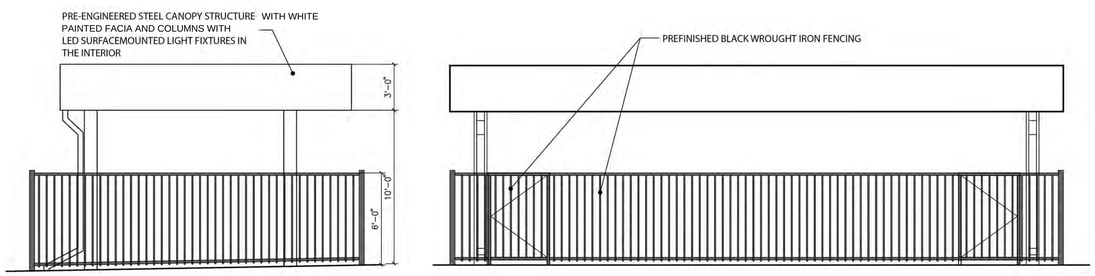
Title: COLORED ELEVATIONS

Project Number: 20160
Drawn by: CG
Date: 7/01/20
Revision:

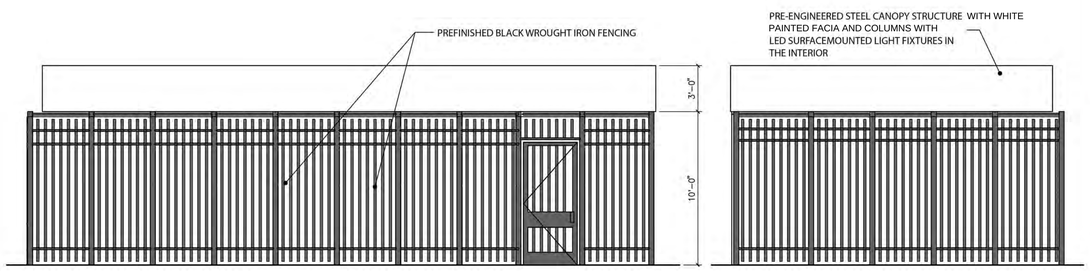
Sheet:
DAB-A3.3



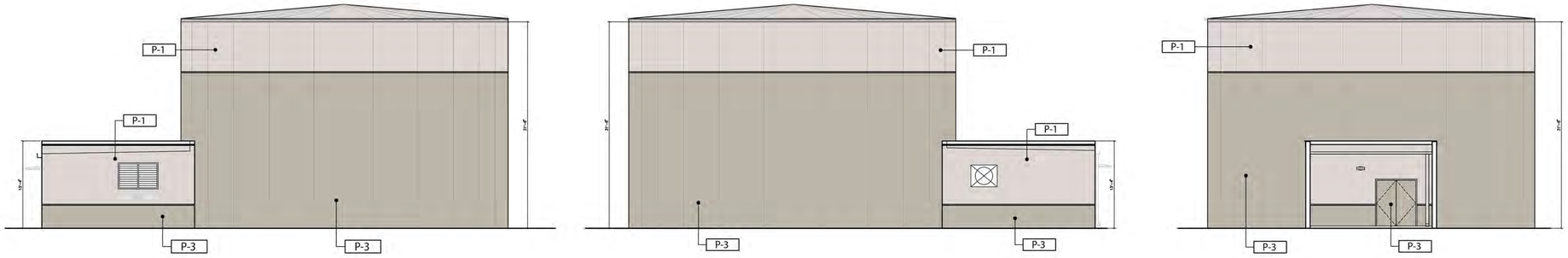
GUARD HOUSE COLORED ELEVATIONS (A)
scale: 1/4"=1'-0"



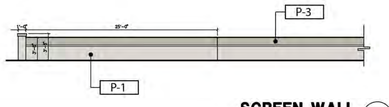
COVERED BIKE SHELTER COLORED ELEVATIONS (C)
scale: 1/4"=1'-0"



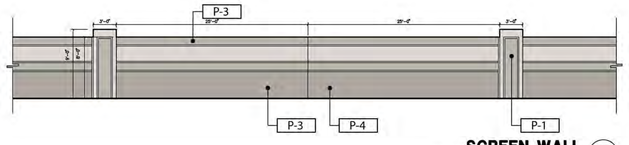
SMOKER 'S SHELTER COLORED ELEVATIONS (G)
scale: 1/4"=1'-0"



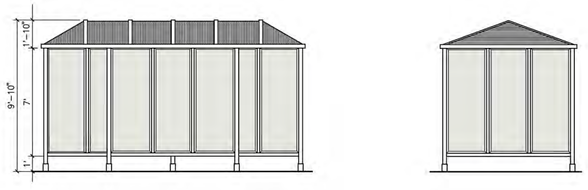
FIRE PUMP HOUSE COLORED ELEVATIONS (D)
scale: 1/8"=1'-0"



SCREEN WALL (F)
scale: 1/8"=1'-0"



SCREEN WALL (E)
scale: 1/8"=1'-0"



HANDI HUT COLORED ELEVATIONS (B)
scale: 1/4"=1'-0"

MODEL #6-3WSPH
ACCOMODATES 12-14

ALUMINUM: 6063-T52
AVAILABLE FINISHES: CLEAR ANODIZED
GLAZING: 1/4" CLEAR TEMPERED GLASS
ROOF PANELS: CLEAR ANODIZED
BENCH/BACKREST: EXTRUDED ALUMINUM

EXTERIOR COLOR LEGEND

P-1	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH COLOR SW #6446 "FIRST STAR" (RGB 218 - 217 - 212)
P-2	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH COLOR SW #7016 "MINDFUL GRAY" (RGB 188 - 183 - 173)
P-3	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH COLOR SW #7017 "DORIAN GRAY" (RGB 172 - 167 - 158)
P-4	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH COLOR SW #7018 "DOVETAIL" (RGB 144 - 138 - 131)
P-5	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH COLOR SW #9174 "MOTH WING" (RGB 160 - 144 - 127)
P-6	TEXTURED ACRYLIC COATING SHERWIN WILLIAMS MATCH PANTONE COLOR #2995C (RGB 0 - 169 - 224) (CMYK 83 - 1 - 0 - 0)
P-8	SHERWIN WILLIAMS SEMI-GLOSS MATCH COLOR "BLACK" (RGB 0 - 0 - 0)

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Consultants:

Title: COLORED ELEVATIONS

Project Number: 20160
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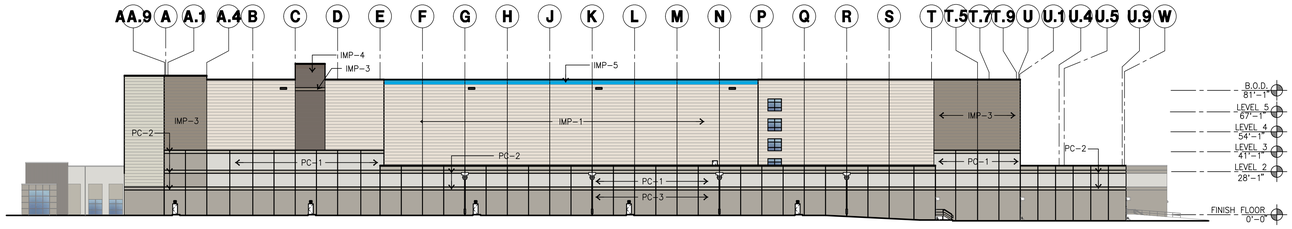
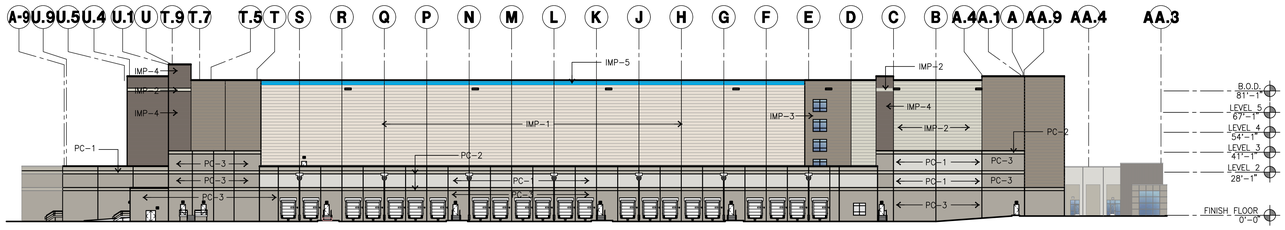
RECEIVED
October 21, 2020
City of Tracy
Development Services



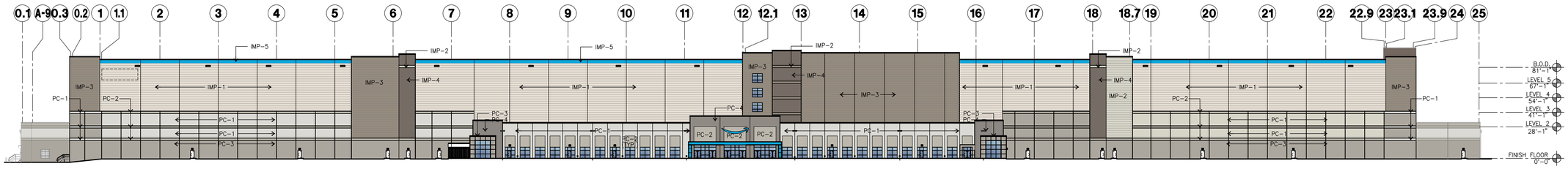
COLOR - OVERALL BUILDING ELEVATION - WEST (A)

scale: 1" = 40'-0"



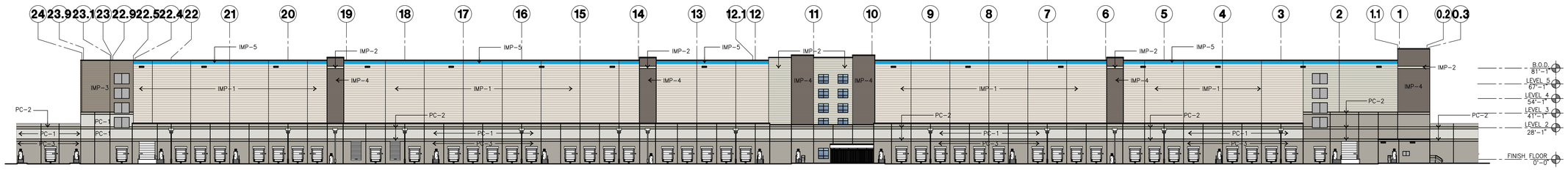
COLOR - OVERALL BUILDING ELEVATION - EAST (B)

scale: 1" = 40'-0"



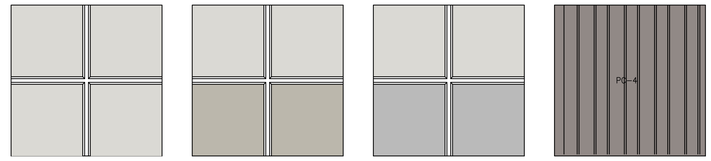
COLOR - OVERALL BUILDING ELEVATION - SOUTH (C)

scale: 1" = 40'-0"



COLOR - OVERALL BUILDING ELEVATION - NORTH (D)

scale: 1" = 40'-0"



1 2 3 4 FORMLINER PATTERN
1.5" WIDE PLANK, RANDOM DEPTH
16021 BY FITZGERALD

BUILDING FINISH KEY

- IMP-1 — INSULATED METAL PANEL, FLUROPON – "BONE WHITE"
- IMP-2 — INSULATED METAL PANEL, FLUROPON – "DRIFT WOOD"
- IMP-3 — INSULATED METAL PANEL, FLUROPON – "DOVE GRAY"
- WAVE IMP-4 — INSULATED METAL PANEL–WAVE TEXTURE, FLUROPON – "ZINC GRAY"
- IMP-5 — INSULATED METAL PANEL, FLUROPON–MATCH PPG TENANT BLUE "PANTONE 2995C" RGB 169 224
- PC-1 — PRECAST CONC. PANEL, SW 7646 (FIRST STAR)
- PC-2 — PRECAST CONC. PANEL, SW 7016 (MINDFUL GRAY)
- PC-3 — PRECAST CONC. PANEL, SW 7017 (DORIAN GRAY)
- PC-4 — PRECAST CONC. PANEL, SW 7018 (DOVE TAIL)
- PC-5 — PRECAST CONC. PANEL, SW 9174 (MOTH WING)

BUILDING ELEMENTS	COLOR	GUARD HOUSE ELEMENTS	COLOR
METAL COPING	PAC-CLAD "SLATE GRAY"	METAL COPING	PAC-CLAD "GRANITE"
METAL DOWNSPOUT AND CONDUCTOR HEADS	PAC-CLAD "SLATE GRAY"	THRU – WALL SCUPPERS	PAC-CLAD "GRANITE"
THRU – WALL SCUPPERS	PAC-CLAD "SLATE GRAY"	METAL GUTTER & DOWNSPOUT	PC-5 "MOTH WING"
HOLLOW METAL DOORS AND FRAMES	COLOR TO MATCH "PC2"		
EXTERIOR METAL RAILINGS, STAIRS AND LANDINGS	GALVANIZED – NO PAINT	**PUMP HOUSE ELEMENTS**	
SMOKER'S CANOPY	BONE WHITE	BUILDING COLOR	PC-1
ENTRY AND RECRUITING COMPOSITE METAL CANOPY	PANTONE 2995C	METAL COPING, GUTTER & DOWNSPOUT	PAC-CLAD "SLATE GRAY"
STOREFRONT & CURTAIN WALL	DARK BRONZE	NON – INSULATED WATER STORAGE TANK	MATCH PC-1
EXTERIOR METAL LOUVERS	PAC-CLAD "SLATE GRAY"	INSULATED WATER STORAGE TANK	SELECTED BY ARCHITECT

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PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: COLOR SCHEME

Project Number: 20160
Drawn by: CG
Date: 7/01/20
Revision:

Sheet:

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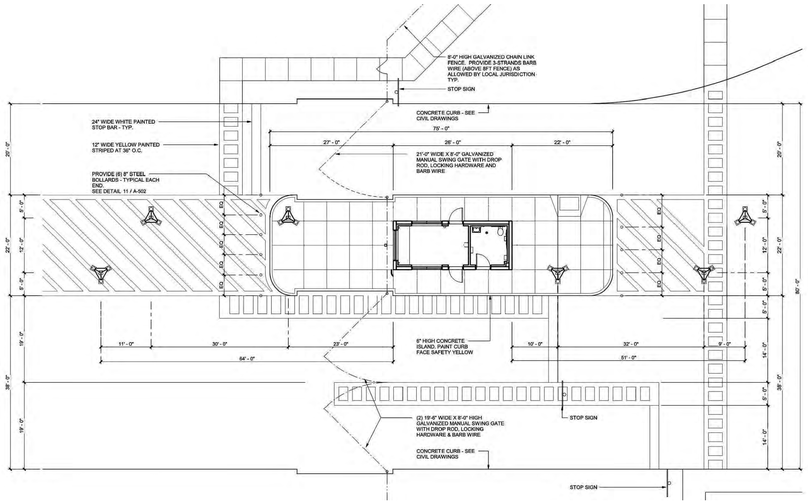
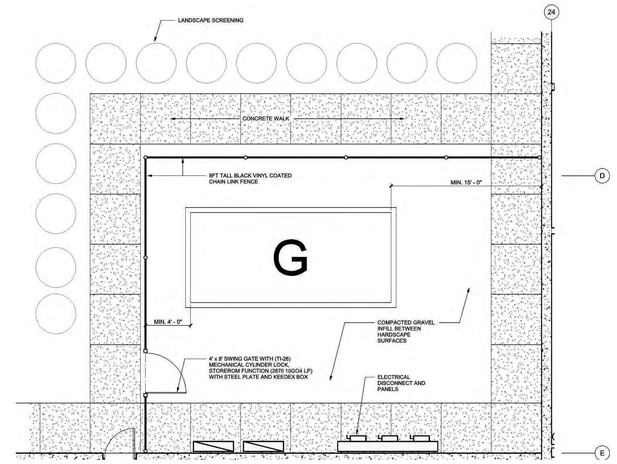
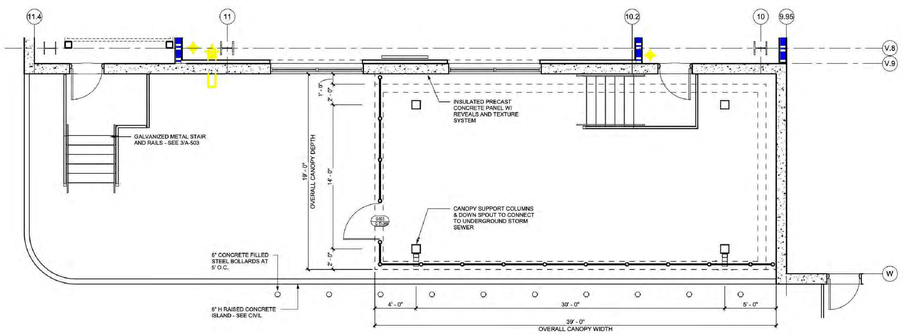


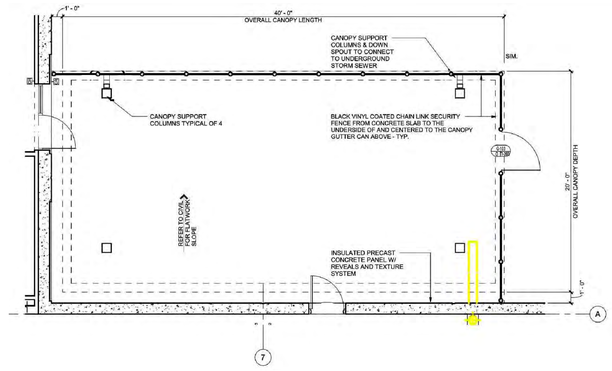
GUARD HOUSE scale: NTS **B**



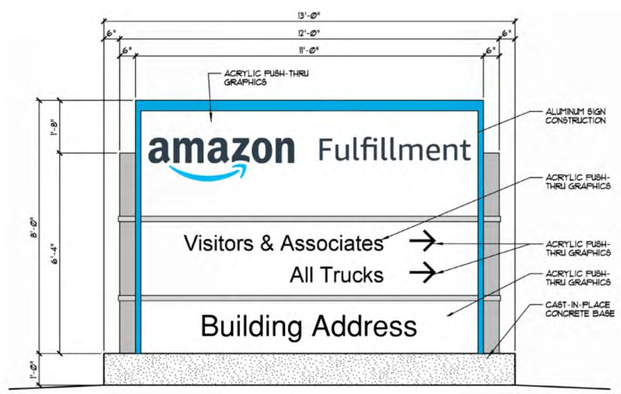
SECURED GENERATION PLAN scale: NTS **J**



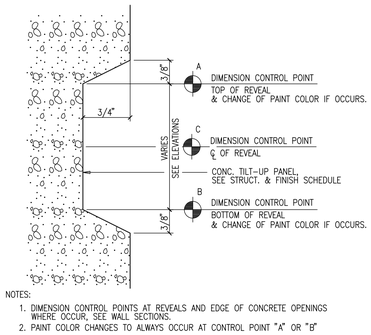
SMOKER'S CANOPY scale: NTS **D**



SMOKER'S CANOPY scale: NTS **C**



TYP. MONUMENT SIGN scale: N.T.S. **F**

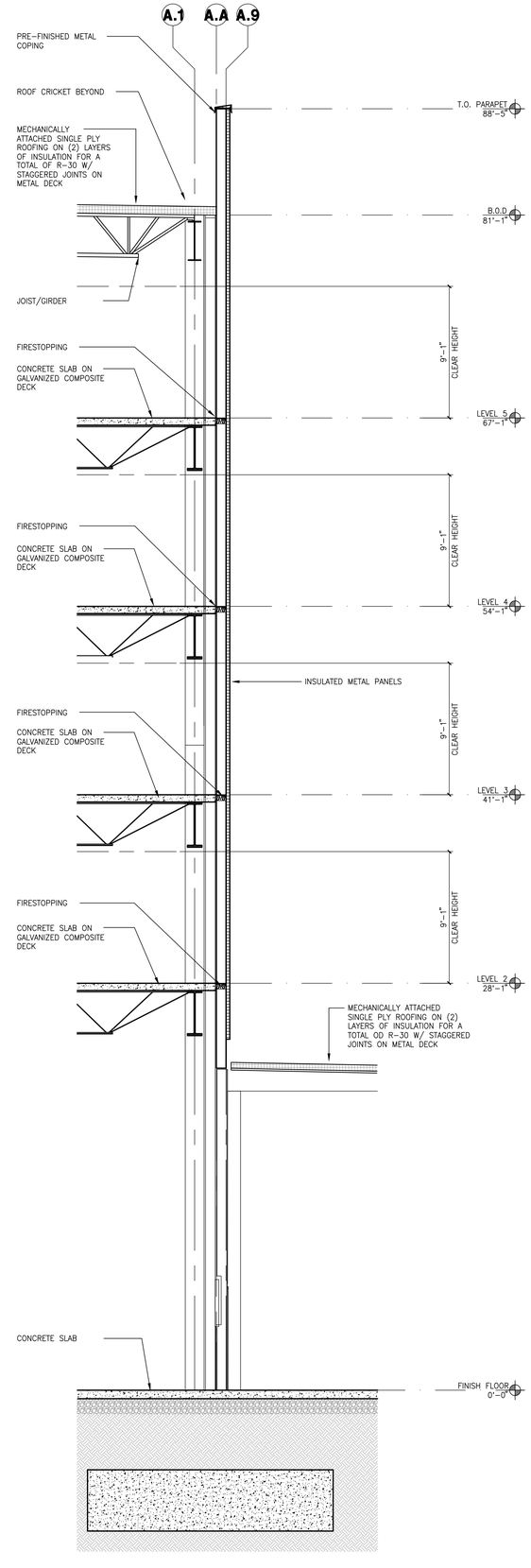


NOTES:
1. DIMENSION CONTROL POINTS AT REVEALS AND EDGE OF CONCRETE OPENINGS WHERE OCCUR, SEE WALL SECTIONS.
2. PAINT COLOR CHANGES TO ALWAYS OCCUR AT CONTROL POINT "A" OR "B"

TYP. CONCRETE REVEAL scale: N.T.S. **E**

MONUMENT SIGN 2 scale: N.T.S. **H**

MONUMENT SIGN 1 scale: N.T.S. **G**



WALL SECTION scale: 1/4" = 1'-0" **A**

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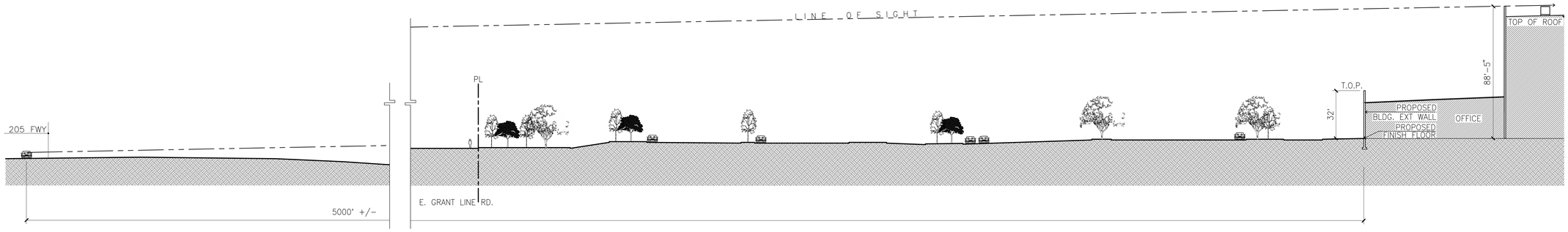
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: SECTION

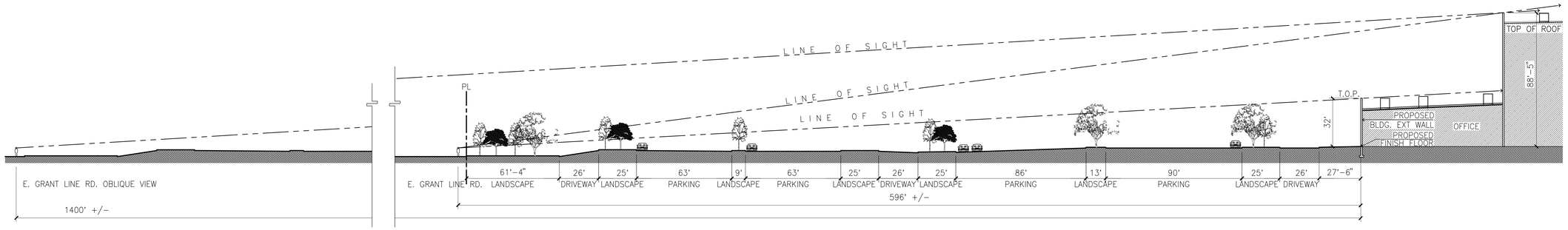
Project Number: 20160
Drawn by: CG
Date: 7/01/20
Revision:

Sheet:

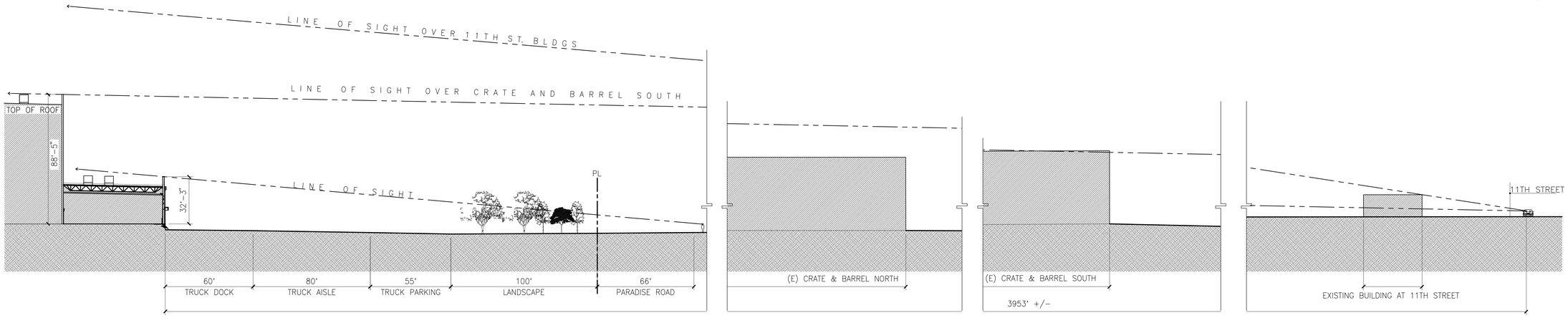
DAB-A4.1



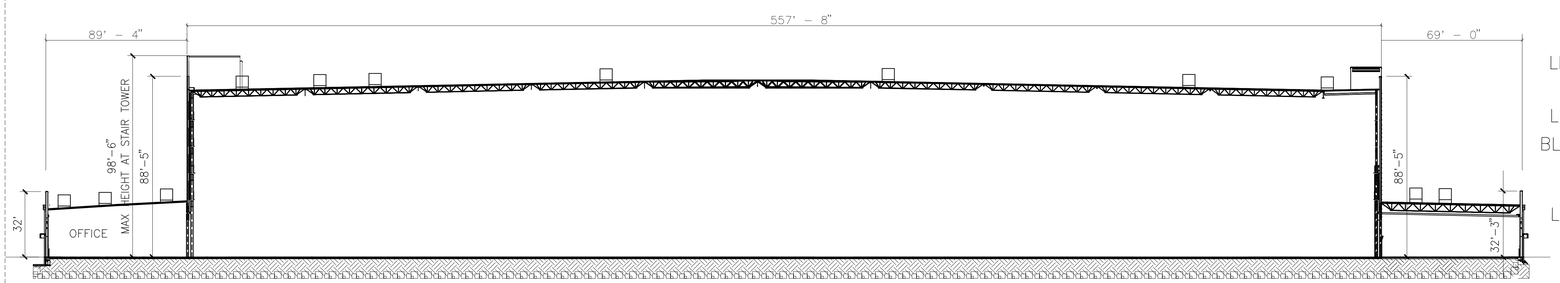
SITE SECTION TO I-205 (A)
scale: 1" = 30'-0"



SITE SECTION TO GRANT LINE ROAD (B)
scale: 1" = 30'-0"

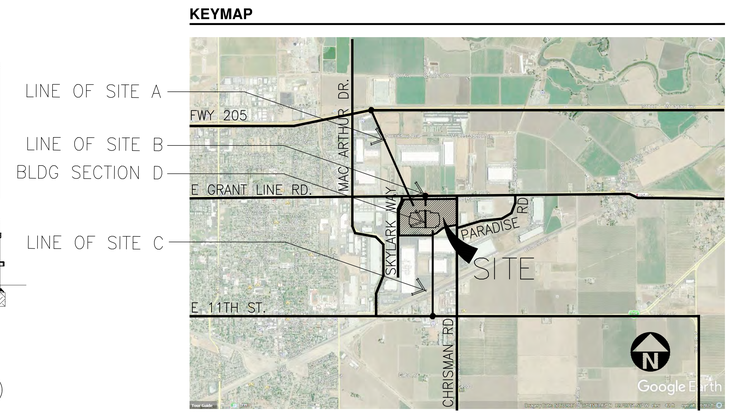


SITE SECTION TO PARADISE AND TO 11TH (C)
scale: 1" = 30'-0"



TYPICAL BUILDING SECTION (D)
scale: 1" = 30'-0"

KEYMAP



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Title: SITE SECTION

Project Number:	20160
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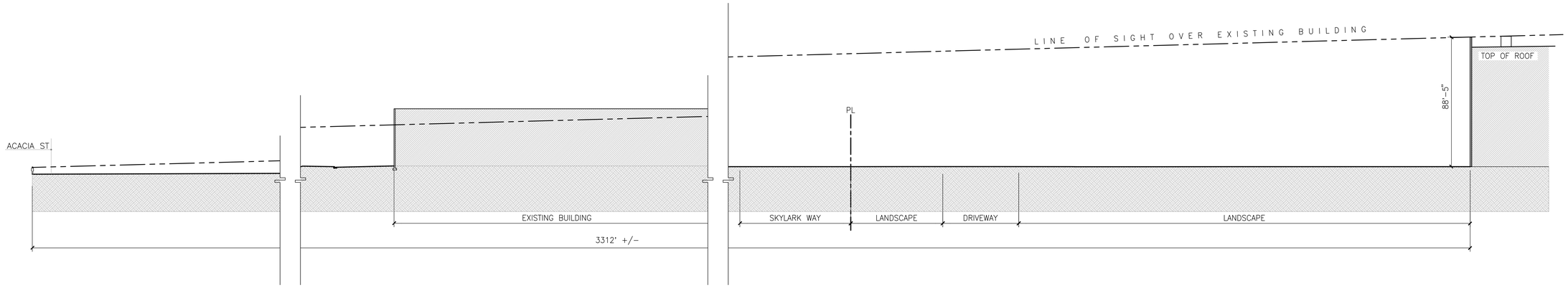
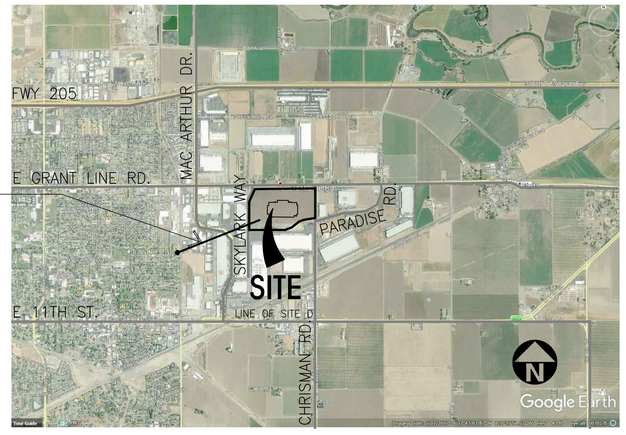


SITE SECTION TO ACACIA ST (E)

scale: 1" = 30'-0"

KEYMAP

LINE OF SITE E



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Title: SITE SECTION

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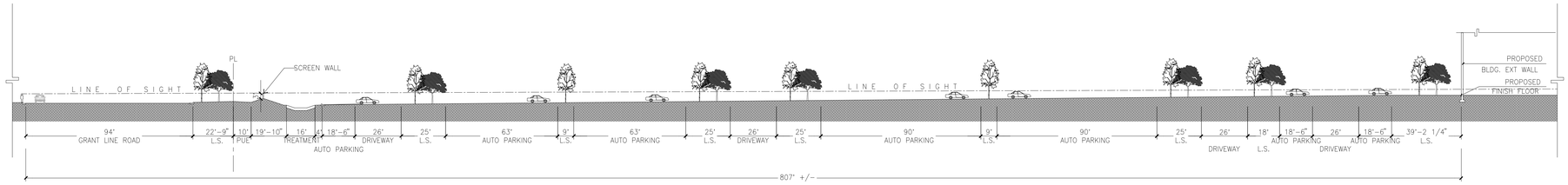
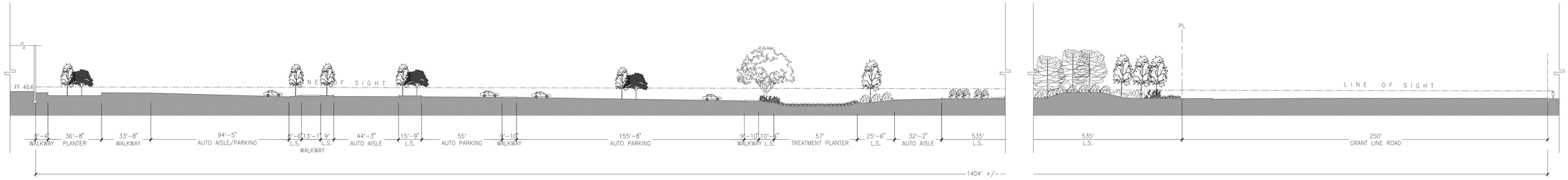


SITE SECTION A (A)
scale: 1" = 30'-0"



SITE SECTION B (B)
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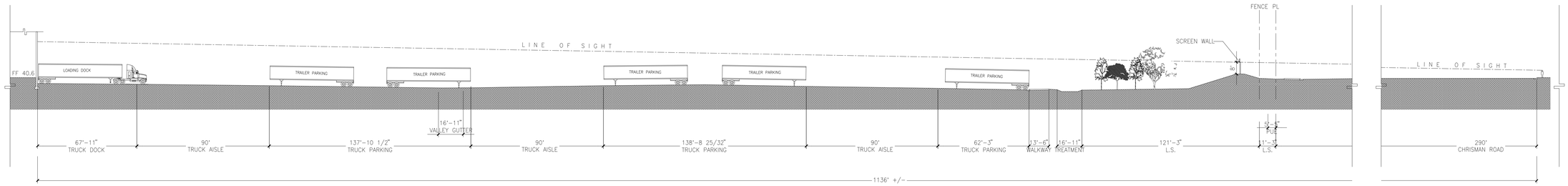
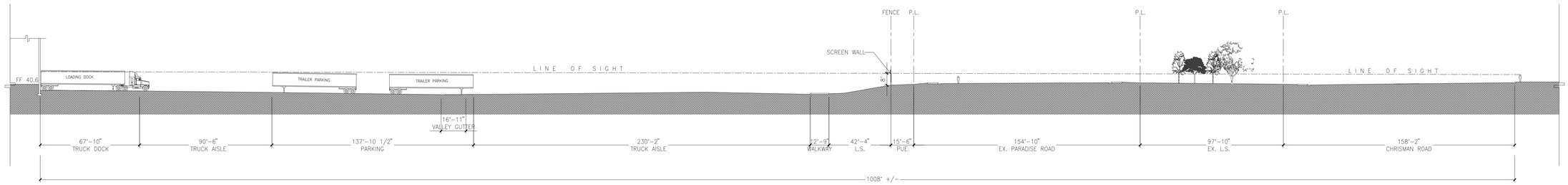
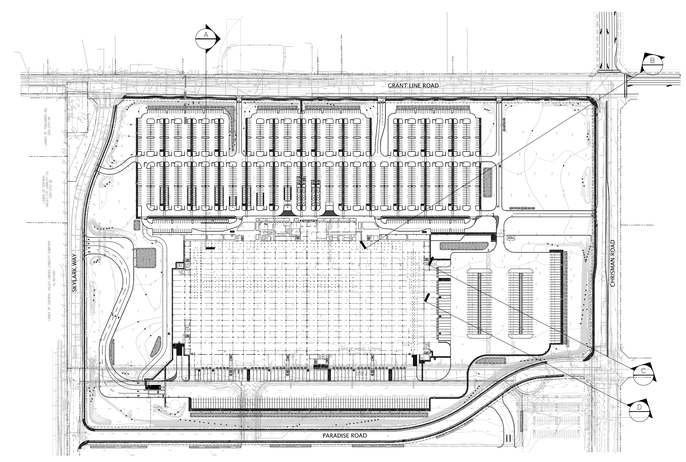


SITE SECTION C (C)
scale: 1" = 30'-0"



SITE SECTION D (D)
scale: 1" = 30'-0"



KEY MAP (E)
scale: 1" = 300'-0"

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Title: SITE SECTION

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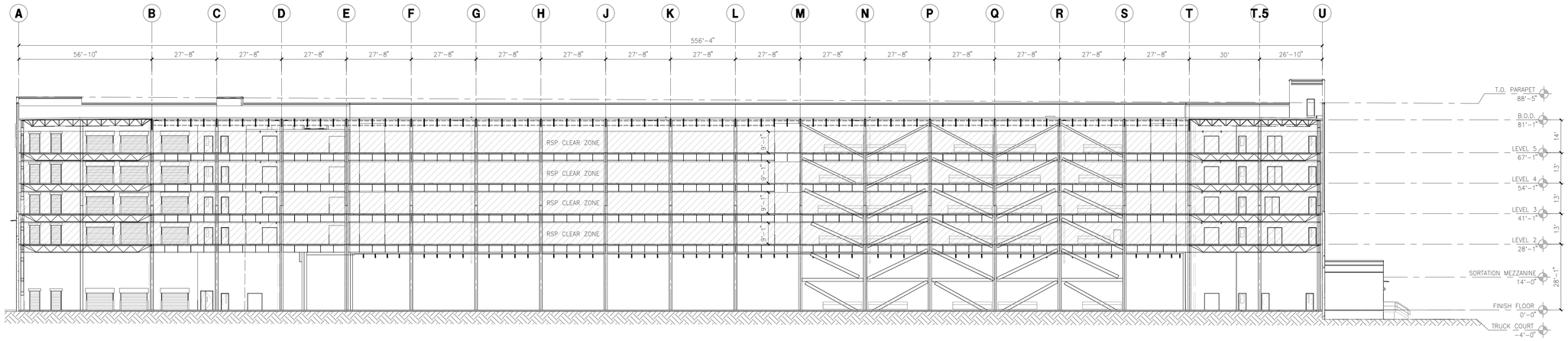
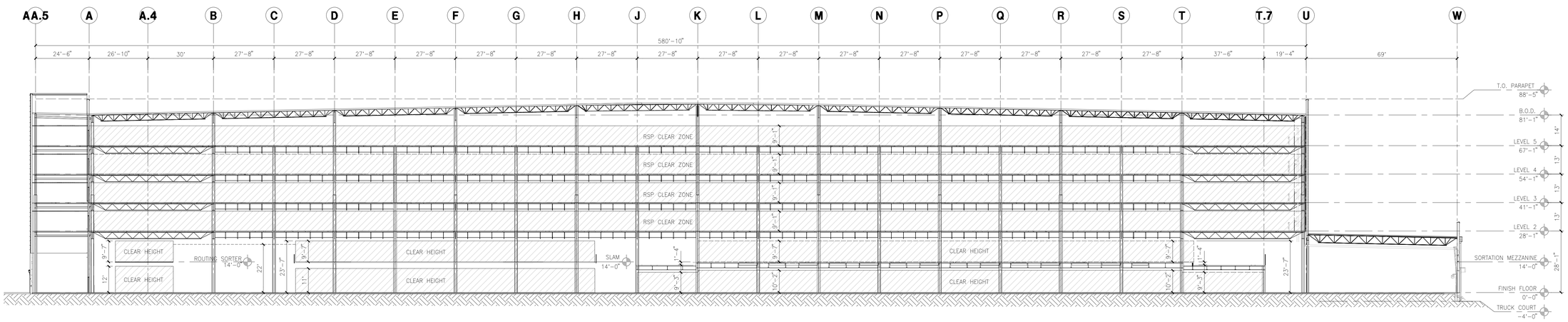
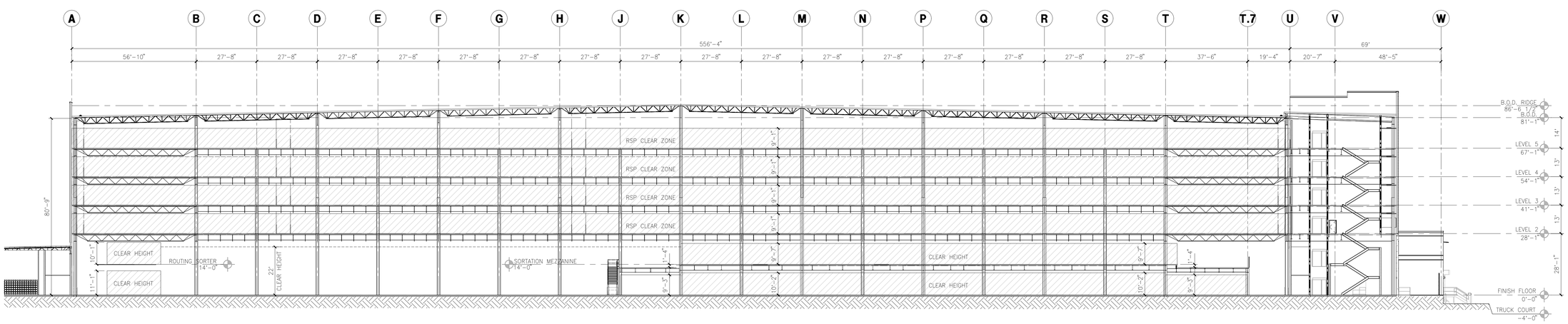


BUILDING SECTION NEAR COLUMN 1 (1)
scale: 1" = 20'-0"



BUILDING SECTION NEAR COLUMN 5 (2)
scale: 1" = 20'-0"



BUILDING SECTION NEAR COLUMN 11 (3)
scale: 1" = 20'-0"

HPA architecture

hpa, inc.
18831 Bardeen Avenue, Suite 100
Irvine, CA
92612
tel: 949•863•1770

email: hpa@hparchs.com

LICENSED ARCHITECT YONG NAM C-29451 3-31-21 RENEWAL DATE STATE OF CALIFORNIA

Owner:

PROLOGIS® Ahead of what's next

3353 Gateway Blvd.
Fremont, CA 94538
tel: (510) 656-1900

Project:

Project Big Bird
Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

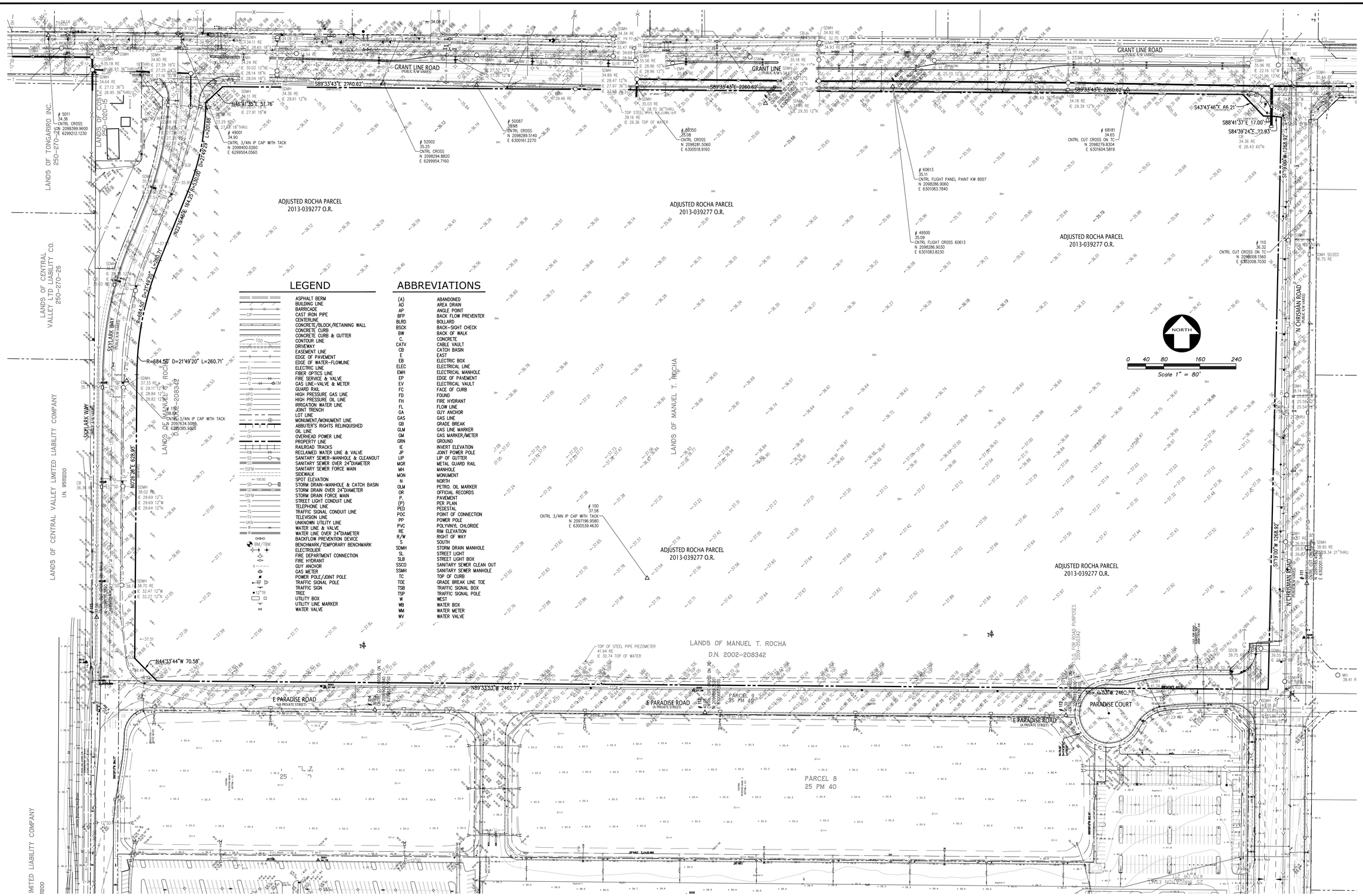
CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title:
BUILDING SECTIONS

Project Number:	20160
Drawn by:	CG
Date:	7/01/20
Revision:	

Sheet:

DAB-A4.5



LEGEND

- ASPHALT BERM
- BUILDING LINE
- BARRICADE
- CAST IRON PIPE
- CENTERLINE
- CONCRETE/BLOCK/RETAINING WALL
- CONCRETE CURB
- CONCRETE CURB & GUTTER
- CONTOUR LINE
- DRIVEWAY
- EASEMENT LINE
- EDGE OF PAVEMENT
- EDGE OF WATER-FLOWLINE
- ELECTRIC LINE
- FIBER OPTICS LINE
- FIRE SERVICE & VALVE
- GAS LINE-VALVE & METER
- GUARD RAIL
- HIGH PRESSURE GAS LINE
- HIGH PRESSURE OIL LINE
- IRRIGATION WATER LINE
- JOINT TRENCH
- LOT LINE
- MONUMENT/MONUMENT LINE
- ABBUTER'S RIGHTS RELINQUISHED
- OIL LINE
- OVERHEAD POWER LINE
- PROPERTY LINE
- RAILROAD TRACKS
- RECLAIMED WATER LINE & VALVE
- SANITARY SEWER-MANHOLE & CLEANOUT
- SANITARY SEWER OVER 24"DIAMETER
- SANITARY SEWER FORCE MAIN
- SIDEWALK
- SPOT ELEVATION
- STORM DRAIN-MANHOLE & CATCH BASIN
- STORM DRAIN OVER 24"DIAMETER
- STORM DRAIN FORCE MAIN
- STREET LIGHT CONDUIT LINE
- TELEPHONE LINE
- TRAFFIC SIGNAL CONDUIT LINE
- TELEVISION LINE
- UNKNOWN UTILITY LINE
- WATER LINE & VALVE
- WATER LINE OVER 24"DIAMETER
- BACKFLOW PREVENTION DEVICE
- BENCHMARK/TEMPORARY BENCHMARK
- ELECTROLIER
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- GUY ANCHOR
- GAS METER
- POWER POLE/JOINT POLE
- TRAFFIC SIGNAL POLE
- TRAFFIC SIGN
- TREE
- UTILITY BOX
- UTILITY LINE MARKER
- WATER VALVE

ABBREVIATIONS

(A)	ABANDONED
AD	AREA DRAIN
AP	ANGLE POINT
BFP	BACK FLOW PREVENTER
BLRD	BOLLARD
BSCK	BACK-SIGHT CHECK
BW	BACK OF WALK
C	CONCRETE
CATV	CABLE VAULT
CB	CATCH BASIN
E	EAST
EB	ELECTRIC BOX
ELEC	ELECTRICAL LINE
EMH	ELECTRICAL MANHOLE
EP	EDGE OF PAVEMENT
EV	ELECTRICAL VAULT
FC	FACE OF CURB
FD	FOUND
FH	FIRE HYDRANT
FL	FLOW LINE
GA	GUY ANCHOR
GAS	GAS LINE
GB	GRADE BREAK
GLM	GAS LINE MARKER
GM	GAS MARKER/METER
GRN	GROUND
IE	INVERT ELEVATION
JP	JOINT POWER POLE
LIP	LIP OF GUTTER
MGR	METAL GUARD RAIL
MH	MANHOLE
MON	MONUMENT
N	NORTH
OLM	PETRO. OIL MARKER
OR	OFFICIAL RECORDS
P	PAVEMENT
(P)	PER PLAN
PED	PEDESTAL
POC	POINT OF CONNECTION
PP	POWER POLE
PVC	POLYVINYL CHLORIDE
RE	RIM ELEVATION
R/W	RIGHT OF WAY
S	SOUTH
SDMH	STORM DRAIN MANHOLE
SL	STREET LIGHT
SLB	STREET LIGHT BOX
SSCO	SANITARY SEWER CLEAN OUT
SSMH	SANITARY SEWER MANHOLE
TC	TOP OF CURB
TOE	GRADE BREAK LINE TOE
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
W	WEST
WB	WATER BOX
WM	WATER METER
WV	WATER VALVE

NOTE: THIS SITE HAS FIBER OPTIC LINES
NOTES
LOCATED ON OR ADJACENT TO IT.

1. THIS PLOT WAS PREPARED FROM INFORMATION FURNISHED IN A PRELIMINARY TITLE REPORT, PREPARED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY, DATED FEBRUARY 15, 2019, NUMBER 09220769. NO LIABILITY IS ASSUMED FOR MATTERS OF RECORD NOT STATED IN SAID PRELIMINARY TITLE REPORT THAT MAY AFFECT THE TITLE LINES, OR EXCEPTIONS, OR EASEMENTS OF THE PROPERTY.

2. ALL DISTANCES AND ELEVATIONS SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF.

3. UTILITY INFORMATION HEREON IS PROGRESS AT THIS TIME. A REQUEST WAS MADE TO THE RESPECTIVE AGENCIES FOR INFORMATION REGARDING THE LOCATION OF THEIR FACILITIES ON THIS SITE. AS OF APRIL 29, 2019, THEY HAD NOT RESPONDED WITH THIS INFORMATION. UNTIL WE RECEIVE THIS INFORMATION AND ARE ABLE TO DELINEATE THESE FACILITIES, ALL PARTIES SHOULD CONSIDER THIS SURVEY AS PRELIMINARY WITH REGARDS TO THE LOCATION OF TELEPHONE FACILITIES. UPON RECEIPT OF THIS INFORMATION KIER & WRIGHT WILL UPDATE THIS SURVEY AND REISSUE IT.

4. BENCHMARK: CITY OF TRACY BENCHMARK NUMBER 2015 PER RECORD OF SURVEY OF THE GEODETIC CONTROL NETWORK, RECORDED JUNE 26, 2007 IN BOOK 36 OF SURVEYS AT PAGE 118. FOUND 2" CITY OF TRACY BENCHMARK DISK STAMPED "2015" 0.9 MILES EAST OF MACARTHUR DRIVE ON THE NORTHERLY CURB OF PESCADERO AVENUE. ELEVATION = 26.83'

5. BASIS OF BEARINGS:
THE BEARING OF NORTH 89° 37' 56" WEST, ALONG THE CENTERLINE OF PESCADARO AVENUE AS SHOWN ON THAT CERTAIN PARCEL MAP RECORDED JULY 11, 2008 IN BOOK 24 OF PARCEL MAPS AT PAGE 195, SAN JOAQUIN COUNTY RECORDS, WAS TAKEN AS THE BASIS OF ALL BEARINGS SHOWN HEREON

6. CORNER RECORD NOTE:
THE OWNER SHALL BE RESPONSIBLE FOR THE PREPARATION AND FILING OF PRE-CONSTRUCTION AND POST-CONSTRUCTION CORNER RECORDS FOR ANY MONUMENTS OR PROPERTY CORNERS SHOWN HEREON THAT MAY BE DESTROYED DURING IMPROVEMENTS TO THE SUBJECT PROPERTY AS DEFINED IN SECTION 8771(B) OF THE PROFESSIONAL LAND SURVEYOR'S ACT.

7. AN INSPECTION OF THE SUBJECT PROPERTY HAS REVEALED THAT THERE ARE TELEPHONE MANHOLES ON OR NEAR THE SUBJECT PROPERTY. A REQUEST WAS MADE OF THE TELEPHONE COMPANY FOR INFORMATION REGARDING THE LOCATION OF THEIR FACILITIES ON THIS SITE. AS OF APRIL 12, 2019, THEY HAD NOT RESPONDED WITH THIS INFORMATION. UNTIL WE RECEIVE THIS INFORMATION AND ARE ABLE TO DELINEATE THESE FACILITIES ALL PARTIES SHOULD CONSIDER THIS SURVEY AS PRELIMINARY WITH REGARDS TO THE LOCATION OF THE TELEPHONE FACILITIES. UPON RECEIPT OF THIS INFORMATION KIER & WRIGHT WILL UPDATE THIS SURVEY AND REISSUE IT.

NO.	REVISION	BY

NO.	REVISION	BY
	PLANNING SUBMITTAL 5/22/2020	
	PLANNING RESUBMITTAL 9/25/2020	
	PLANNING RESUBMITTAL 10/20/2020	

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www.kierwright.com

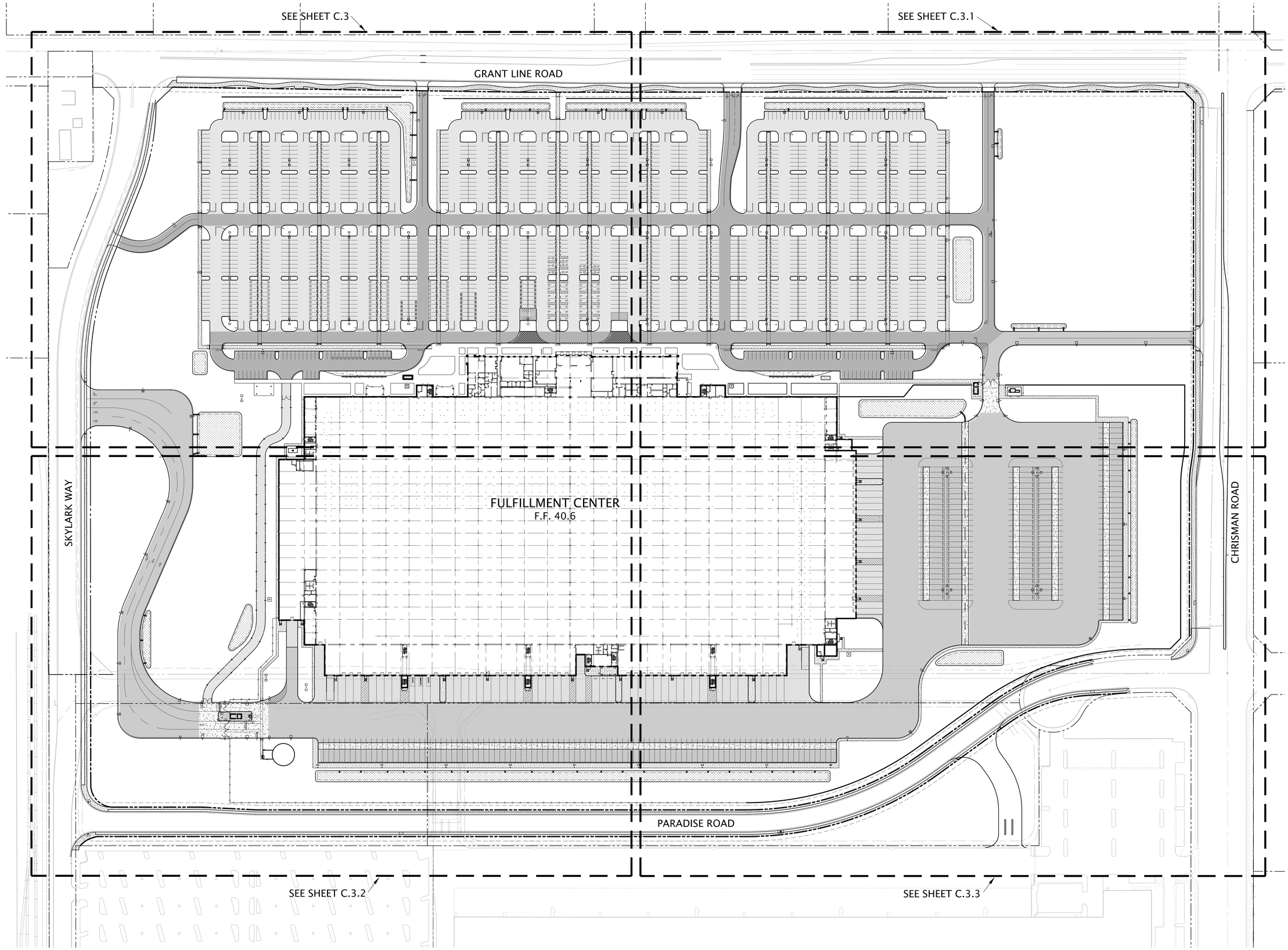
REGISTERED PROFESSIONAL ENGINEER
MICHAEL F. BASSETLOS
No. 71814
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

TOPOGRAPHIC SURVEY
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 80'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.1
OF	9 SHEETS

\\Kierwright.local\Global\Z\2005\A05728-43\DWG\CIVIL\A05728-43-PG.dwg 10-20-20 05:42:09 PM rsalb



NO.	REVISION	BY

NO.	REVISION	BY
1	PLANNING SUBMITTAL 5/22/2020	
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No. 71814
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

OVERALL SITE PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 80'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.2
OF	9 SHEETS

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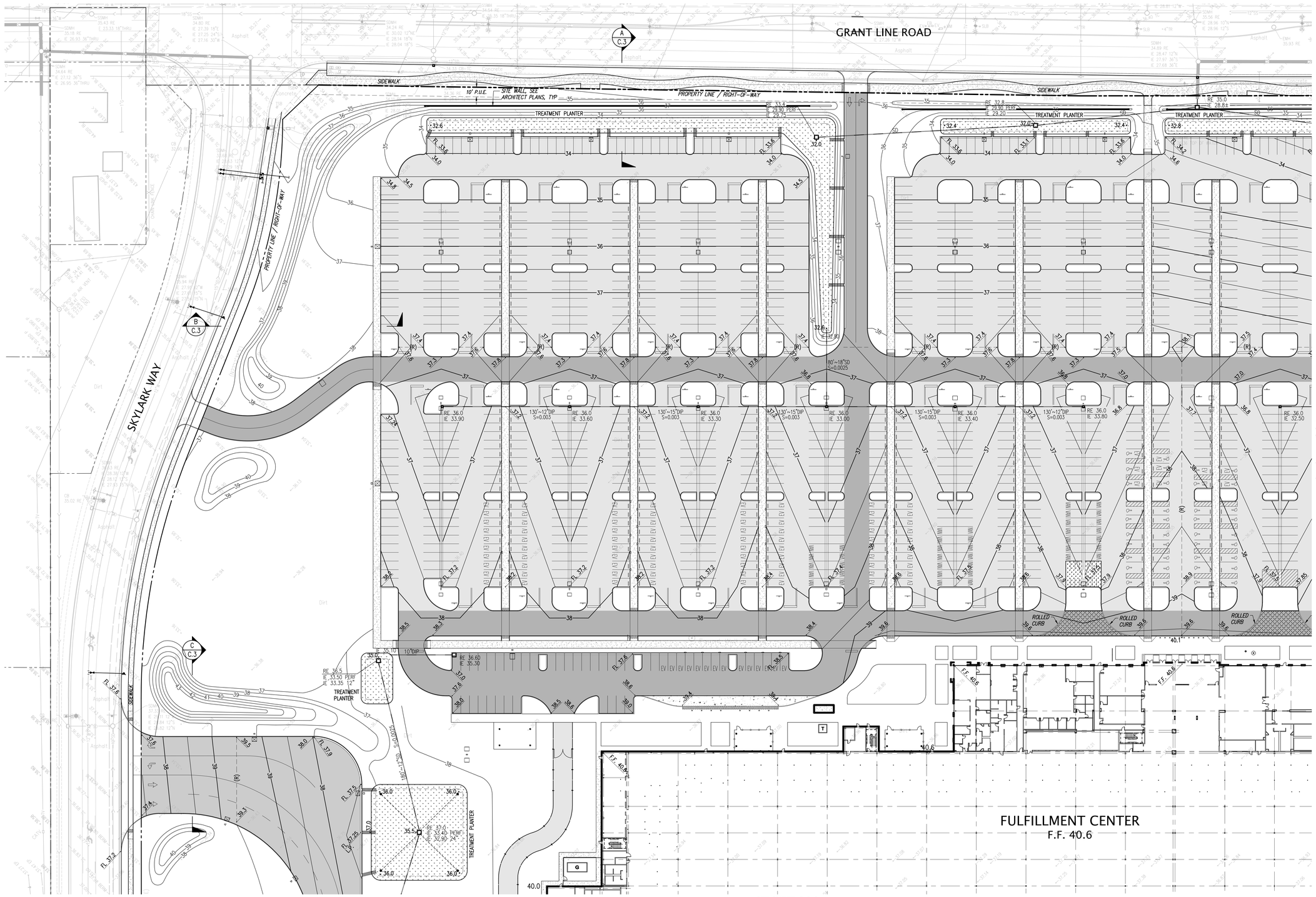
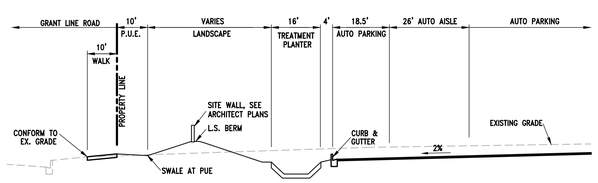
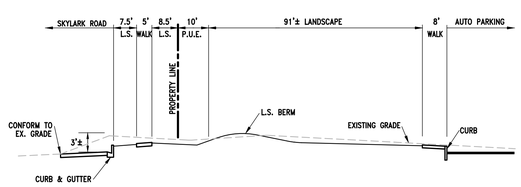




SECTION A-A NORTH SIDE - WESTERLY (A)

N. T. S.



SECTION B-B WEST SIDE - NORTHERLY (B)

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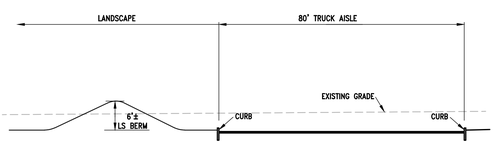

SECTION C-C WEST SIDE - NORTHERLY (C)

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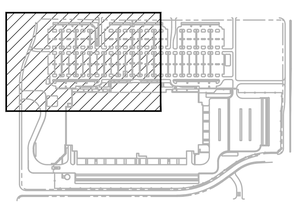

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3	PLANNING RESUBMITTAL 10/20/2020	
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REGISTERED PROFESSIONAL ENGINEER MICHAEL F. BASSETTOS No. 71814 Exp. 12-31-20 CIVIL STATE OF CALIFORNIA

PRELIMINARY GRADING & DRAINAGE PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 40'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.3
OF	9 SHEETS

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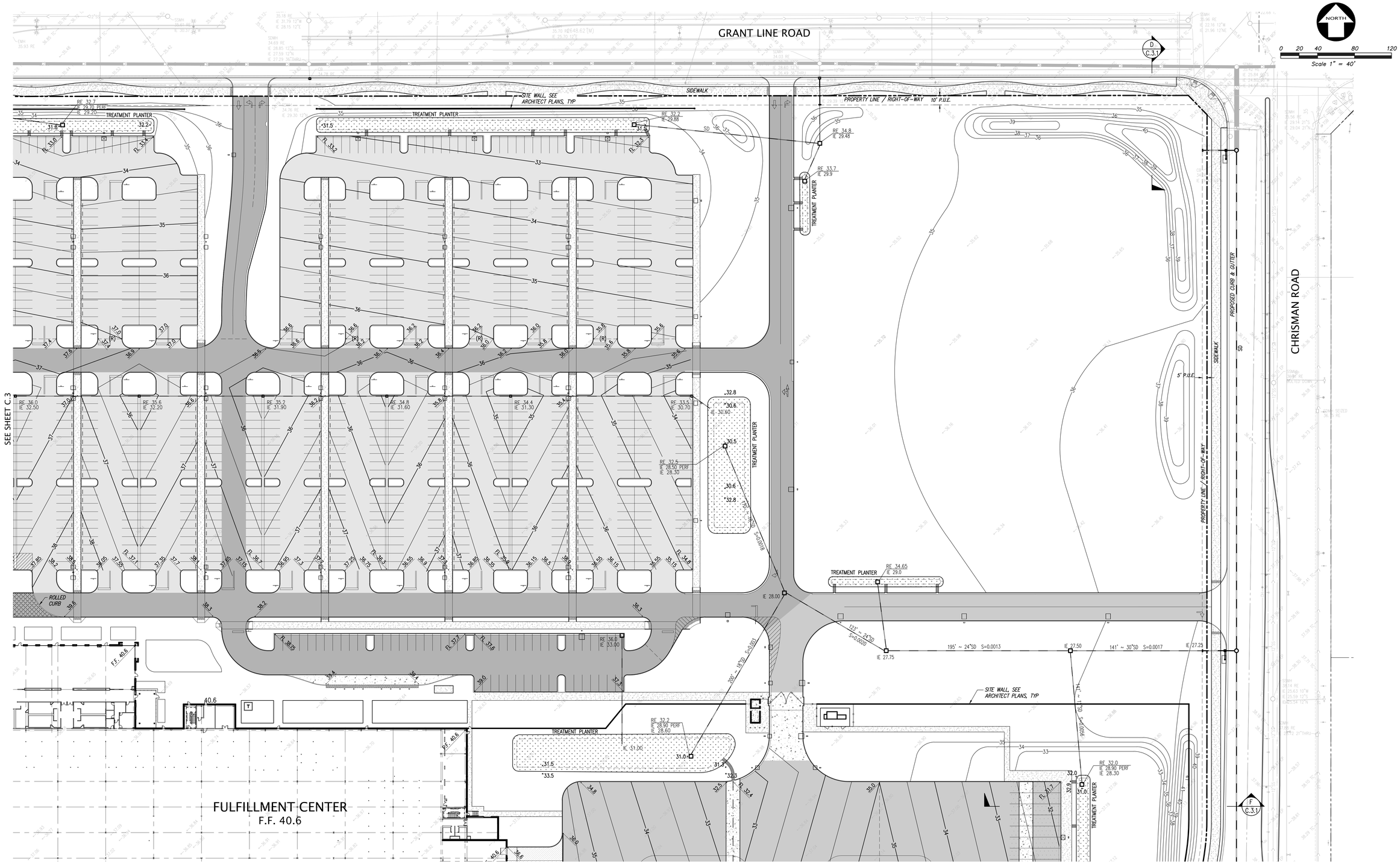

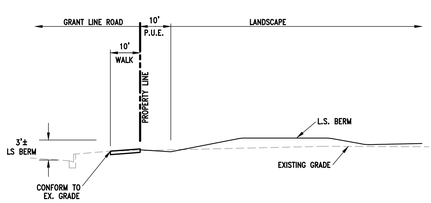

SECTION D-D NORTH SIDE - EASTERLY (D)

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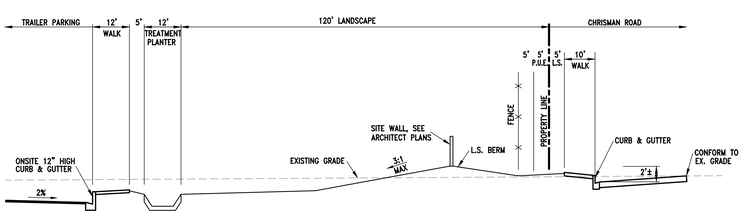

SECTION F-F EAST SIDE - SOUTHERLY (F)

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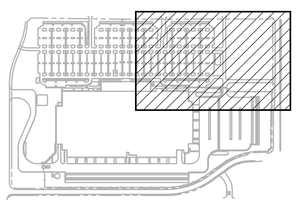

NO.	REVISION	BY

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PRELIMINARY GRADING & DRAINAGE PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 40'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.3.1
OF	9 SHEETS

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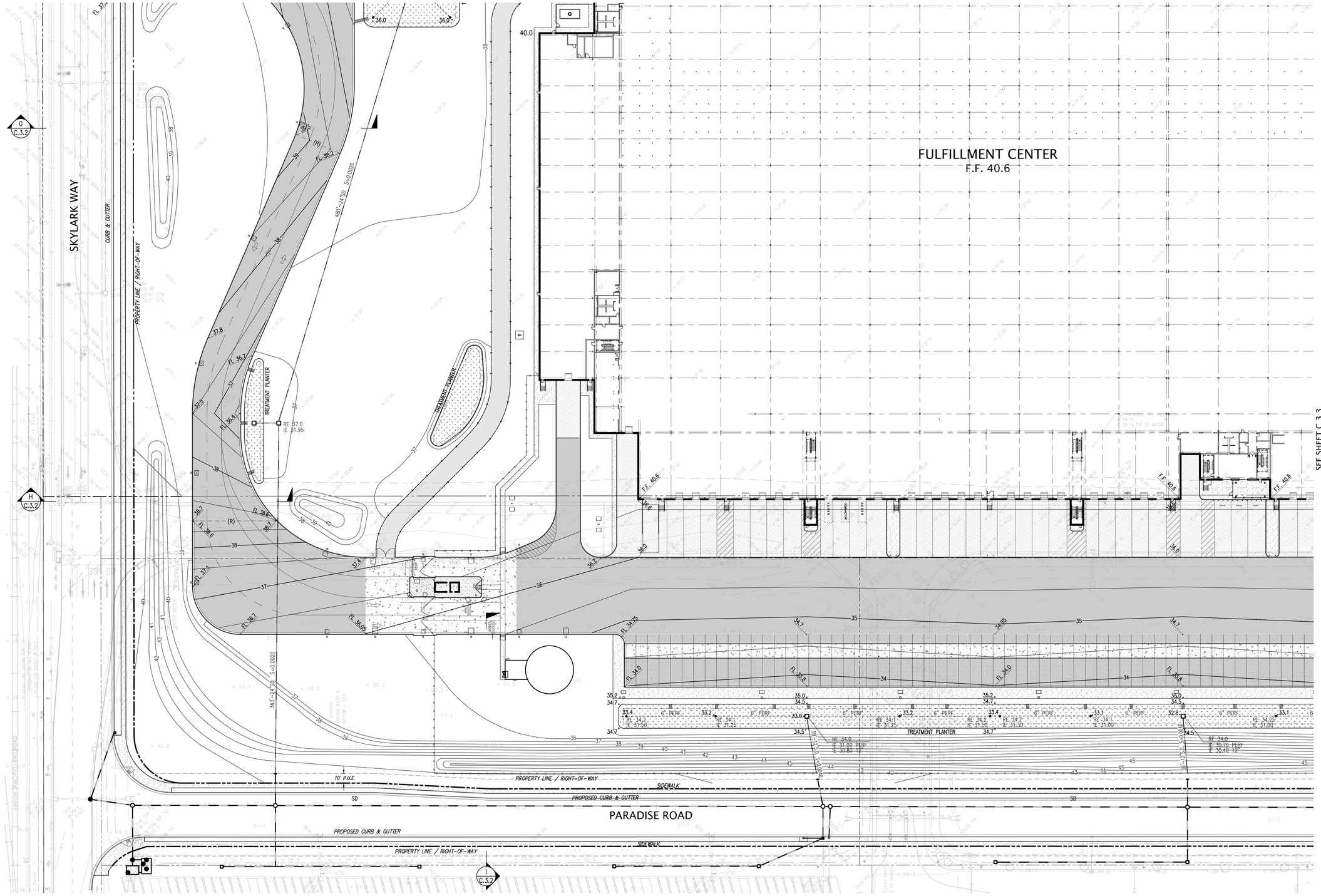
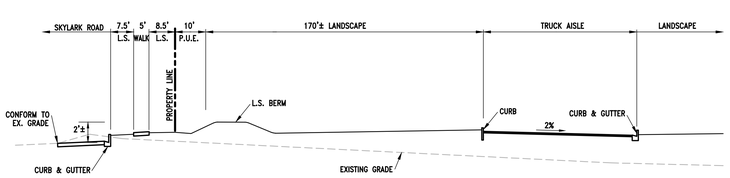
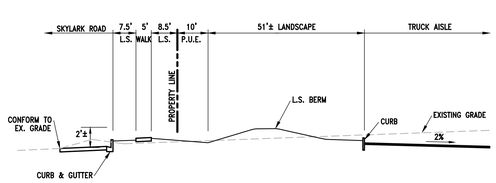
SEE SHEET C.3





SECTION G-G WEST SIDE - NORTHERLY (G)
N. T. S.



SECTION H-H WEST SIDE - SOUTHERLY (H)
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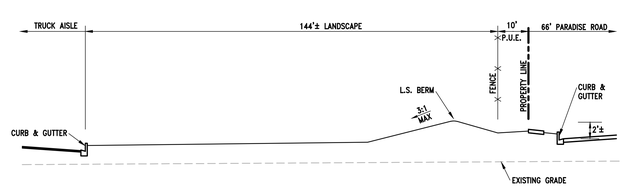
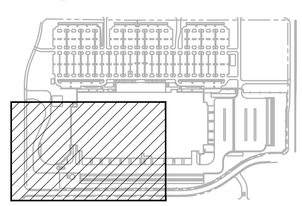


SECTION I-I SOUTH SIDE - WESTERLY (I)
N. T. S.



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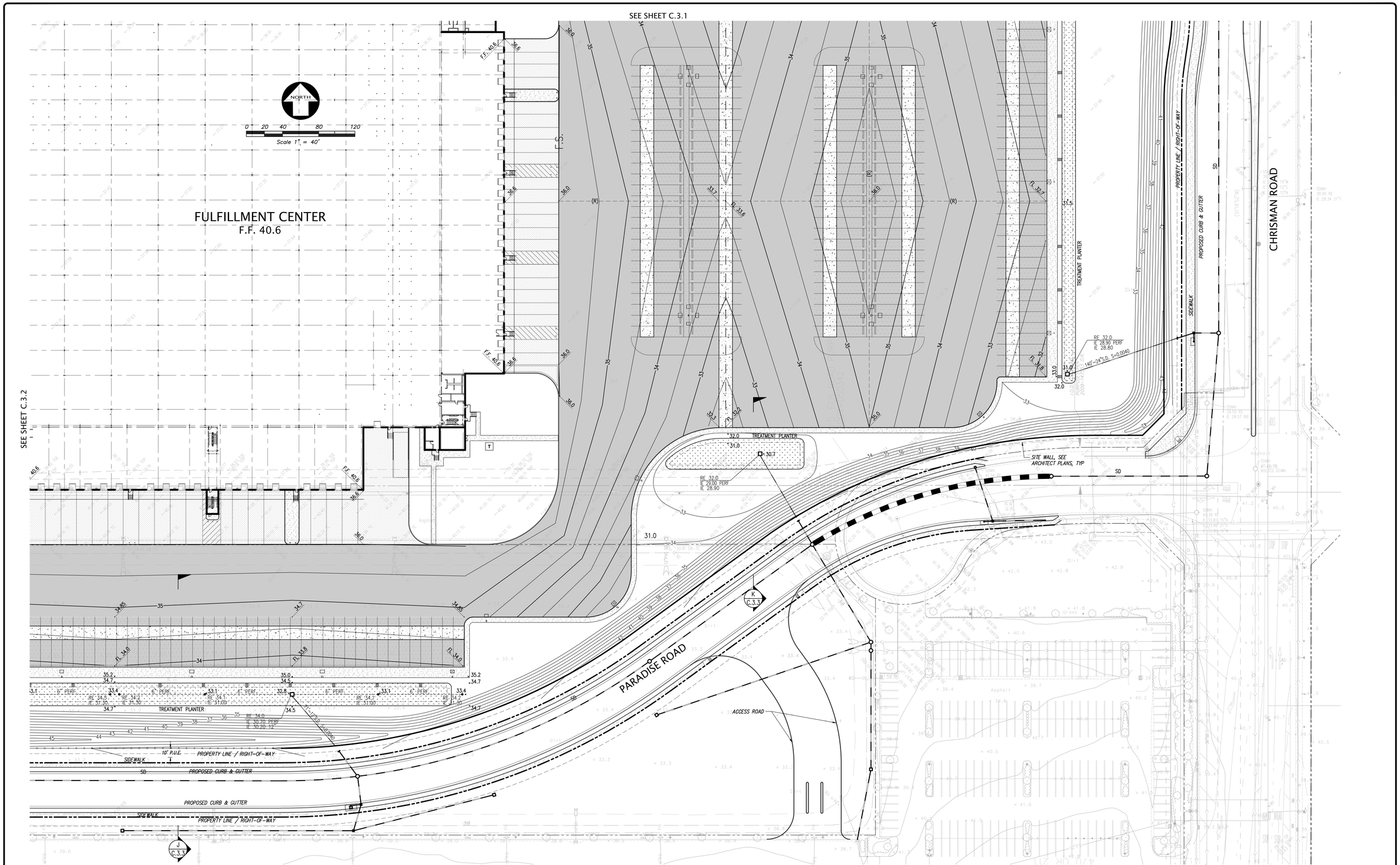
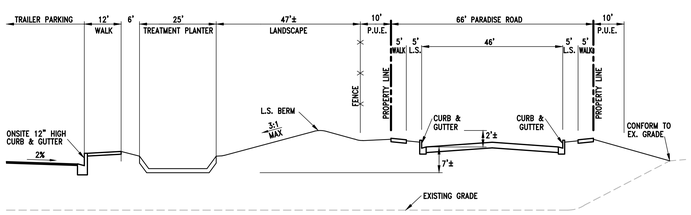
PRELIMINARY GRADING & DRAINAGE PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 40'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.3.2
OF	9 SHEETS

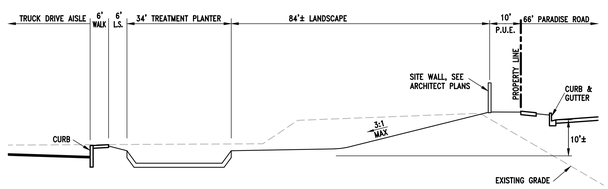




SECTION J-J SOUTH SIDE - EASTERLY

N. T. S.

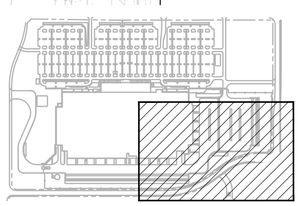
J



SECTION K-K SOUTH SIDE - EASTERLY

N. T. S.

K



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REGISTERED PROFESSIONAL ENGINEER
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No. 71814
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STATE OF CALIFORNIA

PRELIMINARY GRADING & DRAINAGE PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 40'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.3.3
OF	9 SHEETS

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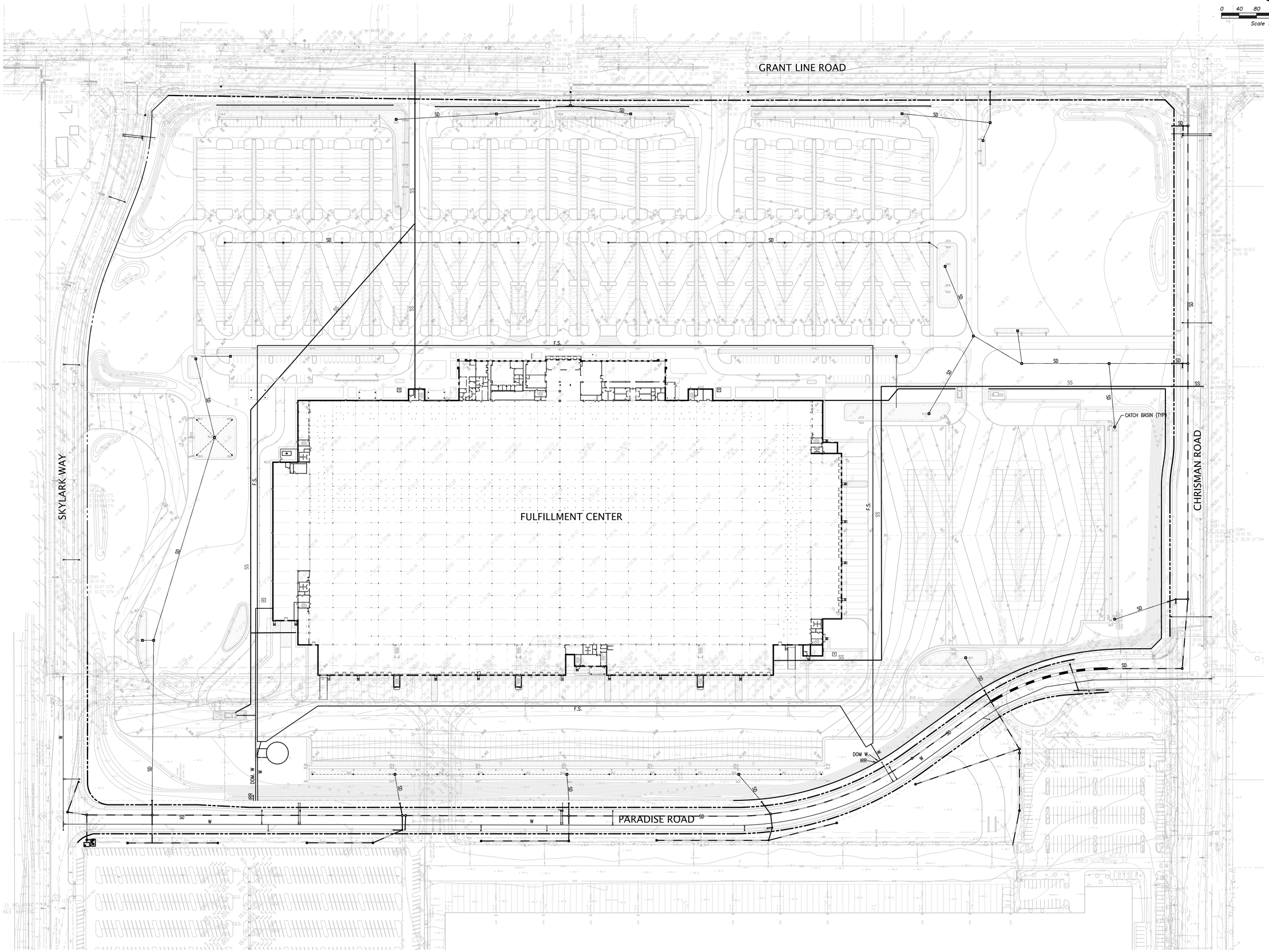

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REGISTERED PROFESSIONAL ENGINEER
MICHAEL F. BASSETTI
No. 71814
Exp. 12-31-21
CIVIL
STATE OF CALIFORNIA

OVERALL PRELIMINARY UTILITY PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 80'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.4
OF	9 SHEETS

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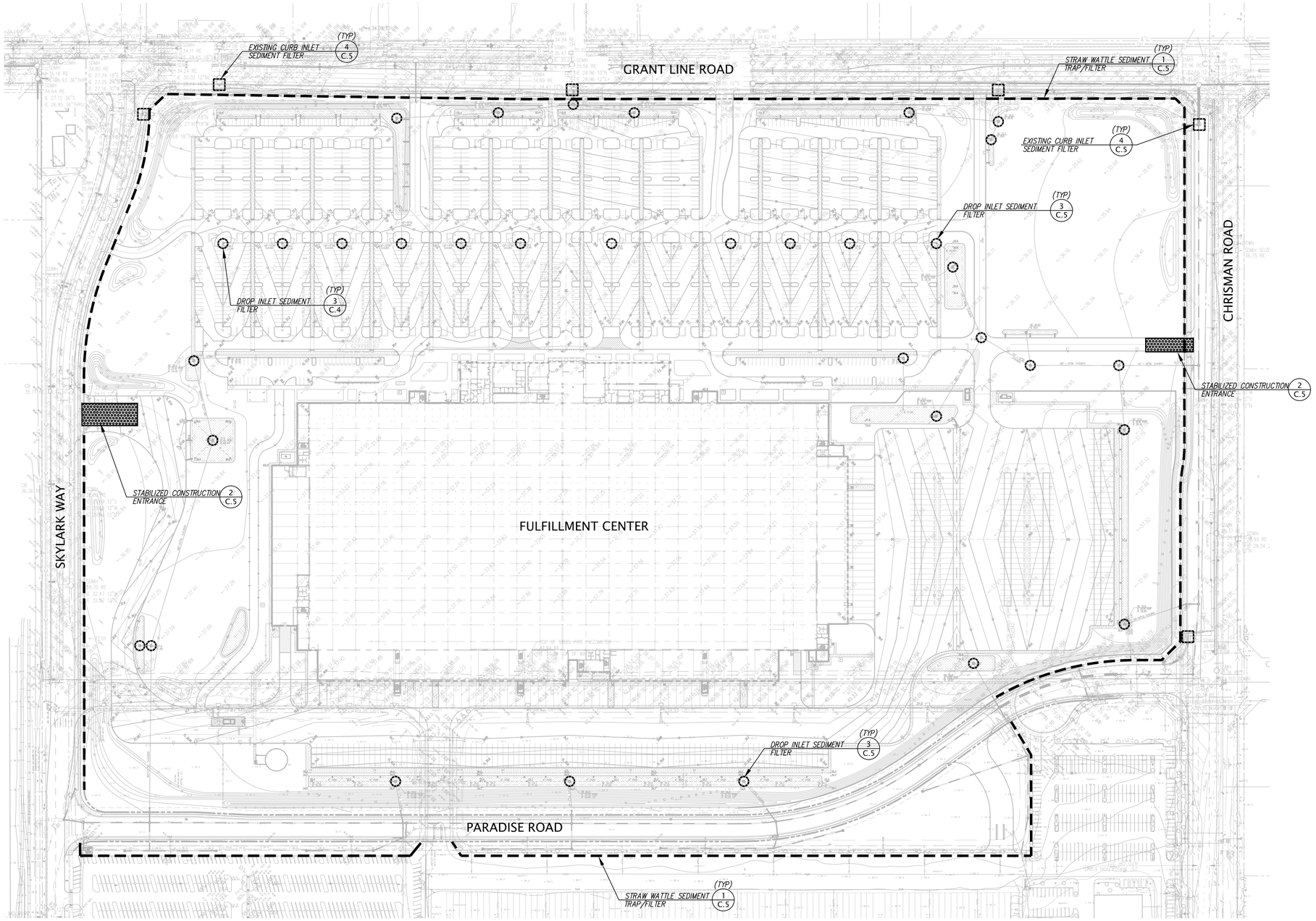


LEGEND

- 1 / C.5 — STRAW WATTLE SEDIMENT
- 2 / C.5 — STABILIZED CONSTRUCTION ENTRANCE
- 3 / C.5 — DROP INLET SEDIMENT FILTER
- 4 / C.5 — EXISTING CURB INLET FILTER

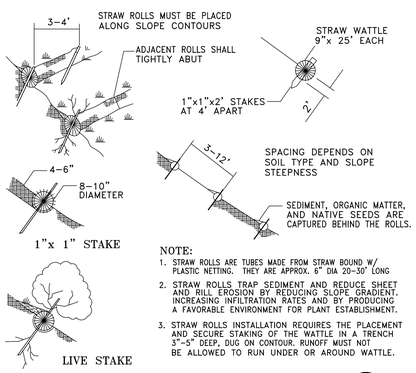
EROSION & SEDIMENT CONTROL MEASURES

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE EFFECTIVE FOR THE DURATION OF CONSTRUCTION.
2. AFTER THE UNDERGROUND STORM DRAIN SYSTEM IS INSTALLED, THE CATCH BASINS WILL BE INSTALLED (AS SOON AS PRACTICAL) AND STRAW BALES WILL BE PLACED AROUND THOSE CATCH BASINS AS SHOWN ON THIS PLAN UNTIL THIS SITE IS PAVED.
3. SHOULD THE ON-SITE STORM DRAINS NOT BE INSTALLED COMPLETELY BY OCTOBER 15, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SEDIMENT BASINS AT THE EXISTING STORM PIPES STUBBED TO THE SITE.
4. PERSON RESPONSIBLE FOR IMPLEMENTATION OF EROSION AND SEDIMENTATION PLAN.

   NAME ----------
   ADDRESS: ----------

   TELEPHONE: ----------

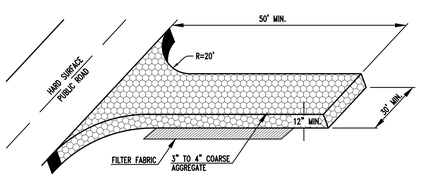
5. THE CONTRACTOR SHALL PLACE DRAIN ROCK AS A GRAVEL ROADWAY (12" MIN. THICK FOR THE FULL WIDTH AND 50 FEET LONG) AT EACH D/W ENTRANCE TO SITE. ANY MUD THAT IS TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED THAT SAME DAY AND AS REQUIRED BY THE CITY OF TRACY.
6. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE QSP.
7. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUN-OFF TO ANY STORM DRAINAGE SYSTEM.
8. THIS PLAN COVERS ONLY THE FIRST WINTER FOLLOWING GRADING. PLANS ARE TO BE RESUBMITTED FOR CITY APPROVAL PRIOR TO THE SEPTEMBER FIRST OF EACH SUBSEQUENT YEAR UNTIL THE SITE IMPROVEMENTS ARE ACCEPTED BY THE CITY.
9. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY DURING THE RAINY SEASON.
10. SEDIMENT BASINS SHALL BE CLEANED OUT WHENEVER SEDIMENT REACHES THE SEDIMENT CLEANOUT LEVEL INDICATED ON THE PLANS.
11. BORROW AREAS AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES TO THE SATISFACTION OF THE CITY ENGINEER.
12. ALL CUT AND FILL SLOPES ARE TO BE PROTECTED TO PREVENT OVERBANK FLOW.
13. INLETS WHICH ARE NOT USED IN CONJUNCTION WITH STRAW BALES OR SEDIMENT BASINS SHOULD BE COVERED, OR OTHERWISE ADJUSTED TO PREVENT INFLOW, UNLESS THE AREA DRAINED IS UNDISTURBED OR STABILIZED.
14. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO ANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF THE ENGINEER.
15. DETAILS FOR THE CONSTRUCTION OF FACILITIES ARE SHOWN ON THESE PLANS.
16. THE EROSION CONTROL PLAN SHEET C.3.1 IS INTENDED TO BE USED FOR EROSION CONTROL ONLY. OTHER INFORMATION SHOWN ON C.4 MAY NOT BE THE MOST CURRENT. SEE SHEET C.2 FOR OTHER INFORMATION.
17. MASS GRADED AREAS SHALL HAVE A SOIL BINDER APPLIED UPON COMPLETION OF GRADING AS SPECIFIED IN THE SWPPP.
18. A SWPPP WILL BE PREPARED SPECIFICALLY FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING SWPPP INCLUDING QSP SERVICES.
19. CONTRACTOR SHALL HYDROSEED ALL DISTURBED AREAS NOT RECEIVING FINAL LANDSCAPING.



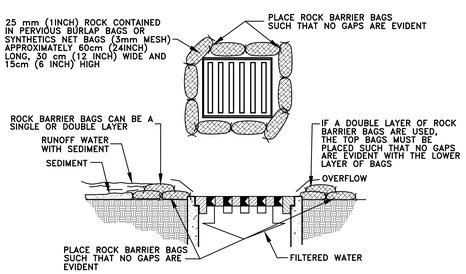
NOTE:

1. STRAW ROLLS ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NETTING. THEY ARE APPROX. 6" DIA 20-30' LONG
2. STRAW ROLLS TRAP SEDIMENT AND REDUCE SHEET AND RILL EROSION BY REDUCING SLOPE GRADIENT, INCREASING INFILTRATION RATES AND BY PRODUCING A FAVORABLE ENVIRONMENT FOR PLANT ESTABLISHMENT.
3. STRAW ROLLS INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE WATTLE IN A TRENCH 3"-5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND WATTLE.

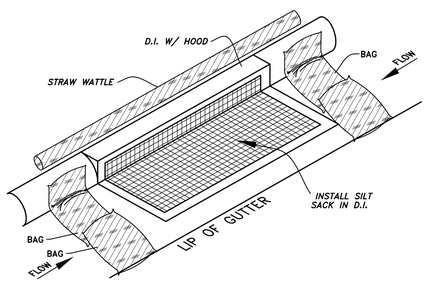
STRAW WATTLE INSTALLATION DETAIL (1)
N. T. S.



STABILIZED CONSTRUCTION ENTRANCE DETAIL (2)
N. T. S.



DROP INLET SEDIMENT FILTER UTILIZING ROCK BARRIER BAGS (3)
N. T. S.



EXISTING CURB INLET FILTER DETAIL (4)
N. T. S.

NO.	REVISION	BY

NO.	REVISION	BY
1	PLANNING SUBMITTAL 8/27/2020	
2	PLANNING RESUBMITTAL 9/25/2020	
3	PLANNING RESUBMITTAL 10/20/2020	

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REGISTERED PROFESSIONAL ENGINEER MICHAEL F. BASSETTI No. 71814 Exp. 12-31-21 CIVIL STATE OF CALIFORNIA

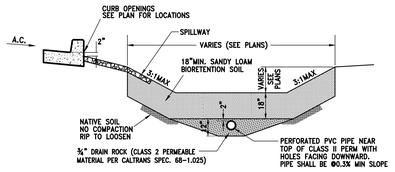
EROSION CONTROL PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 100'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.5
OF	9 SHEETS

STORMWATER TREATMENT PLANTER SIZING CALCULATIONS

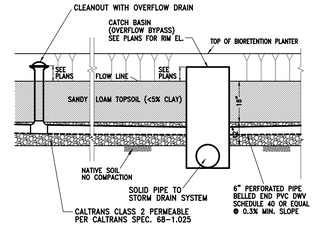
DRAINAGE AREA	TOTAL TRIBUTARY AREA (AC)	IMPERVIOUS AREA		PERVIOUS AREA		IMPERVIOUSNESS RATIO "I"	STORMWATER RUNOFF COEF. "C"	UNIT STORMWATER VOL. "P_0"	SQDV (CF) REQUIRED	SQDV (CF) PROVIDED
		ROOF (AC)	AC/CONC (AC)	LANDSCAPE (AC)	PLANTER (AC)					
1	18.0	5.353	6.660	4.31	0.674	0.72	0.52	0.33	21,845	25,000
2	2.00	0.000	0.804	1.15	0.050	0.40	0.28	0.18	1,321	1,500
3	8.66	5.010	1.188	2.23	0.228	0.72	0.51	0.33	10,365	10,500
4	1.06	0.000	0.936	0.09	0.034	0.88	0.71	0.45	1,760	2,000
5	11.44	0.000	7.160	4.03	0.250	0.63	0.43	0.28	11,547	12,000
6	1.74	0.000	1.122	0.55	0.072	0.65	0.45	0.29	1,821	2,000
7	2.25	0.000	1.460	0.69	0.099	0.65	0.45	0.29	2,371	2,500
8	3.52	0.000	2.110	1.28	0.132	0.60	0.41	0.26	3,381	3,500
9	6.75	0.000	5.850	0.81	0.090	0.87	0.68	0.44	10,848	11,000
10	9.91	4.898	3.311	1.31	0.188	0.85	0.66	0.43	15,365	15,500
11	5.11	1.212	2.651	1.14	0.108	0.76	0.55	0.36	6,609	7,000
12A	2.23	0.000	1.097	1.08	0.055	0.49	0.33	0.22	1,752	2,000
12B	3.38	0.000	1.423	1.89	0.071	0.42	0.29	0.19	2,318	2,500
13	0.42	0.000	0.360	0.00	0.060	0.86	0.67	0.43	662	800
14	3.57	1.411	0.394	1.70	0.066	0.51	0.34	0.22	2,879	3,000
15	0.25	0.000	0.220	0.00	0.300	0.88	0.70	0.45	413	490
16	5.38	0.000	0.000	5.38	0.000	SELF-TREATING				
TOTAL	85.67	18.88	36.95	27.63	2.48				95,258	101,290



NOTES:
1. PLANTER SHALL BE GRADED TO DRAIN TOWARD OUTLET AT A MINIMUM SLOPE OF 0.3%
2. ALL PERFORATED PIPES SHALL HAVE TWO 5/8" DIA. HOLES AT 8" MAX. SPACING.
3. BIO-RETENTION SOIL SHALL BE PER APPENDIX B OF C.3 GUIDEBOOK.
4. BIORETENTION SOIL SHALL ACHIEVE A LONG-TERM INFILTRATION RATE OF AT MIN. 5"/HR
5. COBBLES SHALL BE PLACED AT ALL CURB CUTS AND DOWNSPOUT LOCATIONS.

TYPICAL SECTION
STORM WATER TREATMENT PLANTER

N. T. S.



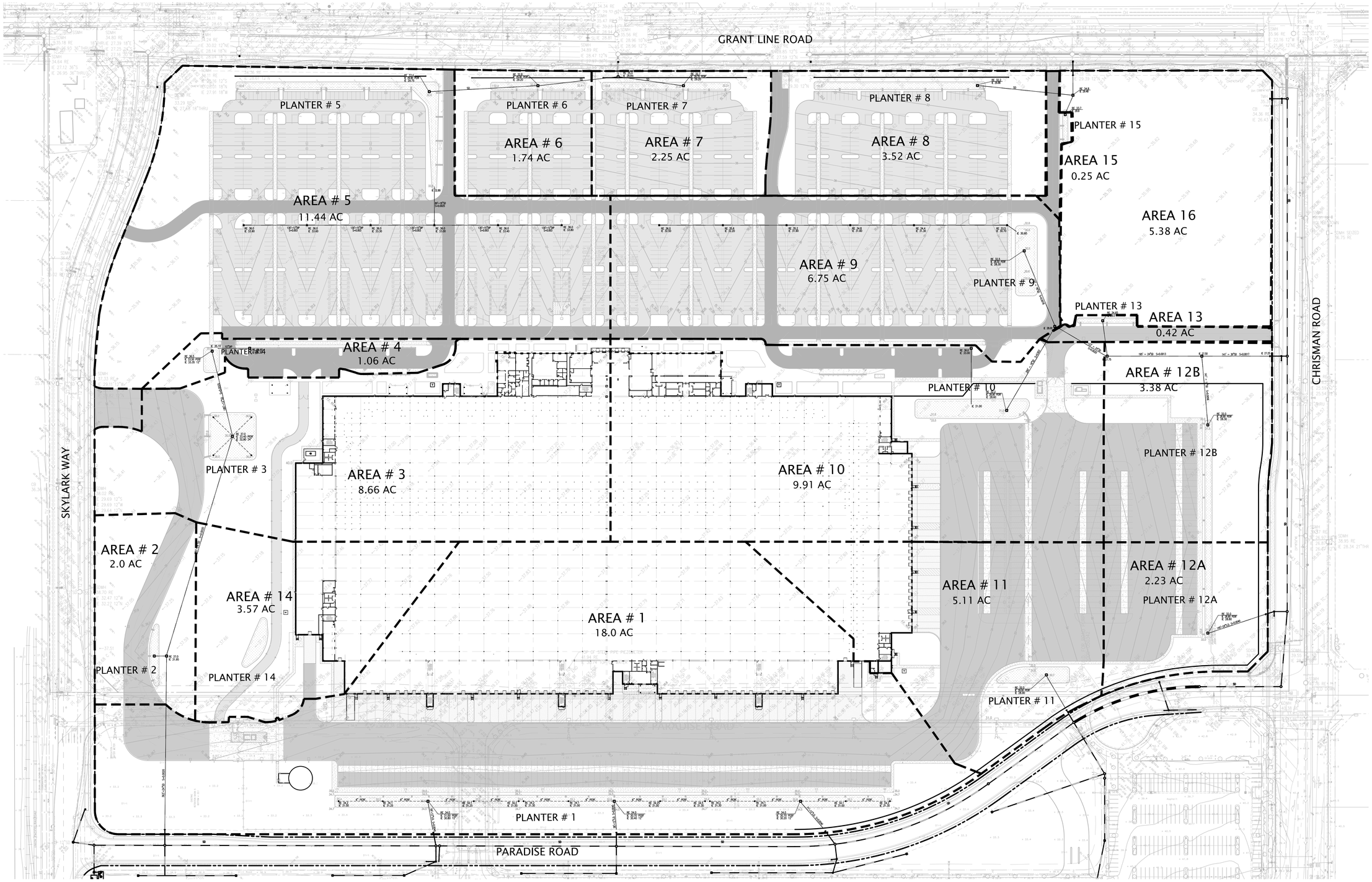
STORMWATER TREATMENT PLANTER - TYPICAL SECTION

N. T. S.

NORTH

0 40 80 160 240

Scale 1" = 80'



NO.	REVISION	BY
1	PLANNING SUBMITTAL 5/22/2020	
2	PLANNING RESUBMITTAL 9/25/2020	
3	PLANNING RESUBMITTAL 10/20/2020	

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Phone: (925) 245-8788
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REGISTERED PROFESSIONAL ENGINEER MICHAEL F. BASSETTI No. 71814 Exp. 12-31-21 CIVIL STATE OF CALIFORNIA

PRELIMINARY STORMWATER QUALITY CONTROL PLAN
NEI PHASE 3
PROJECT BIG BIRD

TRACY CALIFORNIA

DATE	07/31/2020
SCALE	1" = 80'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.6
OF	9 SHEETS

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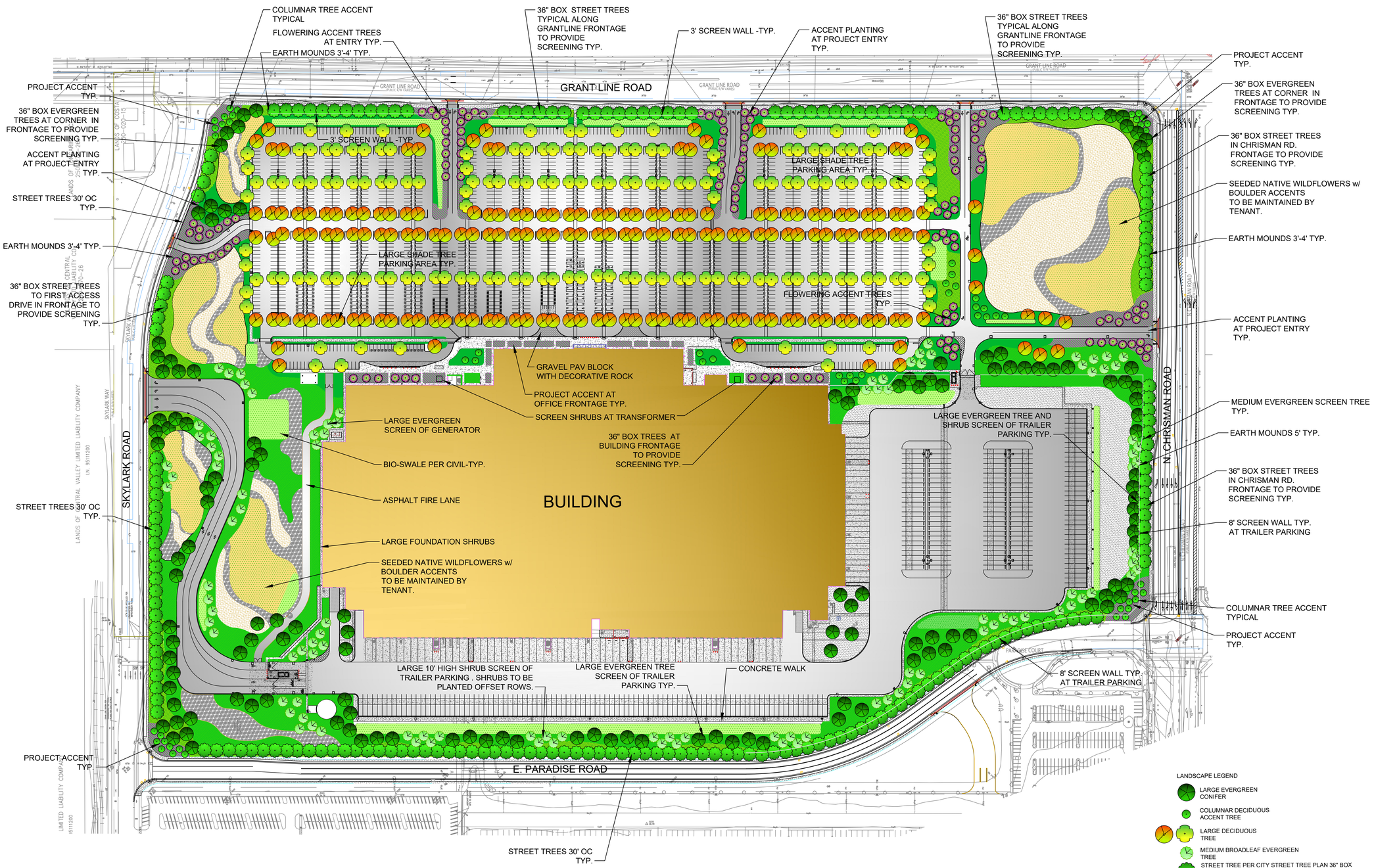

LANDSCAPE CALCULATIONS :

TOTAL SITE AREA: 86 AC
TOTAL PARKING AREA = 774,318 S.F.
PARKING AREA INCLUDES THE FOLLOWING:
1. PAVEMENT INCLUDING ISLANDS, STALLS, AISLES AND ACCESS DRIVES
2. ADJACENT BUILDING FRONTAGE LANDSCAPE AREA INC. WALKS
PARKING AREA LANDSCAPE REQUIRED = 77,431 S.F. (10% OF PARKING AREA)
PARKING AREA LANDSCAPE PROVIDED = 144,048 S.F. (18%)
NO. OF STANDARD PARKING SPACES = 1,867
TREES REQUIRED = 187 (1/10 SPACES)
TREES PROVIDED = 334
REQUIRED PARKING AREA SHADE = 309,727 S.F. (MIN. 40% OF PARKING AREA)
PARKING AREA SHADE PROVIDED AT MATURITY = 335,552 (43%)
200 TREES @ 100% 40' DIAMETER (1257 S.F.) = 251,400 S.F.
134 TREES @ 50% 40' DIAMETER (628 S.F.) = 84,152 S.F.
MINIMUM STREETSCAPE LANDSCAPE REQUIRED:
SKYLARK WAY - 15' (PROVIDED)
GRANTLINE ROAD - 15' (PROVIDED)
N CHRISMAN ROAD - 15' (PROVIDED)
FRONTAGE AREA. = 117,330 S.F. MIN TREE REQUIREMENT 1/400S.F.
TREES REQUIRED = 293
TREES PROVIDED = 359
THE LANDSCAPE PLAN MEETS THE REQUIREMENTS OF THE NORTHEAST INDUSTRIAL DEVELOPMENT PLAN

PRELIMINARY LANDSCAPE PLAN

SCALE: 1" = 100'

REFER TO PRELIMINARY PLANT LIST SHEET LC1.2

LANDSCAPE LEGEND

- LARGE EVERGREEN CONIFER
- COLUMNAR DECIDUOUS ACCENT TREE
- LARGE DECIDUOUS TREE
- MEDIUM BROADLEAF EVERGREEN TREE
- STREET TREE PER CITY STREET TREE PLAN 36" BOX TO BE INSTALLED ON GRANT LINE AND ON SIDE STREETS TO THE FIRST ACCESS DRIVE EITHER SIDE.
- FLOWERING ACCENT TREE
- LOW TO MEDIUM SHRUBS FLOWERING w/ ACCENT PERENNIALS & GRASSES
- LOW PLANTING 1'- 4' TALL
- PROJECT ACCENT PLANTING FLOWERING SHRUBS & GROUND-COVERS, PERENNIAL ACCENT
- SCREEN PLANTING TALL SCREEN SHRUBS 8' +
- SEEDED PER NATIVE BIO-RETENTION GRASSES HYDROSEED MIX
- ROCK MULCH IN TRUCK TRAILER ACCESS AREA
- SEEDED WILDFLOWER MIX BOULDER ACCENTS
- DECOMPOSED GRANITE ACCENT
- LARGE ROCK MULCH ACCENT

LICENSED LANDSCAPE ARCHITECT
BARBARA M. HATCH
12-31-21
Renewal Date
10-21-20
Date
STATE OF CALIFORNIA

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GreenDesign
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p: 775 829 1364
email: bhatch00@charter.net

Owner:

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Ahead of what's next

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tel: (510) 656-1900

Project:

Prologis
Tracy-NEI
PHASE 3 G4+5

Tracy, CA

Consultants:

CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	

Title:

PRELIMINARY LANDSCAPE PLAN

Project Number:	20160
Drawn by:	BH
Date:	7/01/20

Revision:

REVISED 7-31-20
REVISED 9-29-20
REVISED 10-21-20

Sheet:

LC1.1

PRELIMINARYPLANT LIST

"N" CA NATIVE	BOTANICAL NAME	COMMON NAME	SIZE	WATER REGIME /ZONE	MATURE HABIT
	LARGE DECIDUOUS PARKING LOT TREE				
N	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	24" BOX	L	60' X 30'
	PISTACHIA SINENSIS	CHINESE PISTACHE	24" BOX or 36" BOX	L	50' X 40'
	ULMUS 'FRONTIER'	FRONTIER ELM	24" BOX or 36" BOX	M	50' X 60'
	QUERCUS ILEX	HOLLY OAK	24" BOX or 36" BOX	VL	40' X 40'
	COLUMNAR DECIDUOUS TREE (ACCENTS)				
	QUERCUS 'CRIMSON SPIRE'	COLUMNAR OAK	24" BOX.	M	40' X 15'
	MEDIUM EVERGREEN TREE				
	OLEA 'SWAN HILL'	FRUITLESS OLIVE	24" BOX.	L	20' X 20'
	LAURUS N. 'SARATOGA'	SWEET BAY	24" BOX	L	25' X 20'
	LARGE EVERGREEN TREE				
	CEDRUS DEODARA	DEODAR CEDAR	24" BOX. or 36" BOX	L	40' X 40'
	QUERCUS WISLIZENII	INTERIOR LIVE OAK	24" BOX	VL	50' X 50'
	FLOWERING TREE				
	LAGERSTROMIA INDICA	CRAPE MYRTLE	15 GAL OR 36" BOX.	L	15' X 10'
	EVERGREEN SCREENING SHRUBS				
	DODOAEA VISCOSA	HOPSEED	5 GAL.	L	10' X 10'
	NERIUM SPP.	OLEANDER	5 GAL.	L	VARIES
	ARCTOSTAPHYLOS SPECIES	MANZANITA	5 GAL.	L	VARIES
	CEANOTHUS 'RAY HARTMAN'	CA. LILAC	5 GAL.	L	8' X 8'
N	CEANOTHUS SPP.	CEANOTHUS	5 GAL.	L	VARIES
	SHRUBS				
	LANTANA M. 'GOLD RUSH'	GOLD RUSH LANTANA	5 GAL.	L	2' X 4'
N	RHAMNUS CALIFORNICA	COFFEE BERRY	5 GAL.	L	1.5' X 3'
	NERIUM OLEANDER 'PETITE PINK'	PETITE PINK OLEANDER	5 GAL.	L	5' X 5'
	PHORMIUM SPP.	NEW ZEALAND FLAX	5 GAL.	L	VARIES
	PEROVSKIA	RUSSIAN SAGE	1 GAL.	L	3' X 3'
	ESCALLONIA 'NEWPORT'	ESCALLONIA	5 GAL.	L	3' X 3'
	ROSA MEIGALOPIO	RED DRIFT ROSE ROSE	2 GAL.	M	3' X 3'
	ARBUTUS U 'ELFIN KING"	DW. STRAWBERRY TREE	5 GAL.	L	5' X 5'
	SALVIA GREGGI' FURMAN'S RED'	SALVIA	1 GAL.	L	4' X 4'
	WESTRINGA 'MORNING LIGHT"	ROCK ROSE	5 GAL.	L	1.5' X 4'
	OLEA 'LITTLE OLLIE'	DW. OLIVE	5GAL	L	7'X5'
	GROUNDCOVER				
	LANTANA	LANTANA	1 GAL.	L	2' X 4'
	ROSMARINUS OFFICINALIS	HUNTINGTON BLUE ROSEMARY	1 GAL.	L	1.5' X 3'
	LAVENDULA SPP.	LAVENDER	1 GAL.	L	6" X 8"
N	CEANOTHUS SPP.	HORZ. CARMEL CEANOTHUS	1 GAL.	L	3' X 10'
	COTONEASTER D. 'LOWFAST"	BEARBERRY COTONEASTER	1 GAL	L	1' X 6'
	PERENNIALS				
	DIETES 'ORANGE DROP'	FORT NIGHT LILY	1 GAL	L	3' X 3'
	TULBAGHIA V. SILVERLACE'	SOCIETY GARLIC	1 GAL	M	1' X 1'
	GRASSES				
N	MUHLENBERGIA RIGENS	DEER GRASS	1 GAL.	L	4' X 4'
N	MUHLENBERGIA LINDHEIMER	LINDHEIMER'S MUHLY GRASS	1 GAL.	L	2' X 2'
	PENNISETUM SETACEUM 'RUBRUM'	PINK FOUNTAIN GRASS	5 GAL.	L	3' X 2'

LEGEND

NOT SHOWN — COMBINATION OF MULCHES TO BE UTILIZED IN FINAL DESIGN

3" MINIMUM DEPTH OF DECOMPOSED GRANITE

3" MINIMUM DEPTH OF 1" MINUS MOCHA ROCK

3" MINIMUM BARK MULCH-ALL PLANTERS NOT DESIGNATED FOR ROCK, D.G.

NOT SHOWN — 2'-4' DIA. FRACTURED ROCK BOULDERS. BOULDER COLOR AND TEXTURE TO BLEND WITH ROCK MULCH.

3" MINIMUM DEPTH OF 1" FRACTURED GRAY ROCK (TRAILER PARKING AREA)

WATER EFFICIENT LANDSCAPE REQUIREMENTS

AUTOMATIC CONTROLLER W/ ET DATA. REPEAT CYCLING
IRRIGATION ZONES PER PLANT WATER REQUIREMENTS
RAIN SENSOR TO BE SPECIFIED
SOIL AMENDMENTS TO BE INCORPORATED
PLANTER SURFACE AREAS TO BE MULCHED
WATER USAGE TO MEET STATE WATER EFFICIENT LANDSCAPE STANDARD

PRELIMINARY LANDSCAPE PLAN

LICENSED LANDSCAPE ARCHITECT
BARBARA M. HATCH
No. 2511
Exp. Date
12-31-21
Renewal Date
10-21-20
STATE OF CALIFORNIA

HPA architecture

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tel: 949•863•1770

email: hpa@hparchs.com

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email: bhatch00@charter.net

Owner:

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Project:

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MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIRE PROTECTION	HARRINGTON
SOILS ENGINEER	

Title: PRELIMINARY LANDSCAPE PLAN BUILDINGS 3 & 4

Project Number: 20160
Drawn by: BH
Date: 7/01/20
Revision:

Sheet:

LC1.2

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October 21, 2020
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Development Services

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09.30.2020

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Job No. 20160

PERSPECTIVE - 3

09.30.2020

Attachment C

ENVIRONMENTAL CHECKLIST

FOR THE

BIG BIRD INDUSTRIAL PROJECT

October 2020

Prepared for:

City of Tracy
Development Services Department
Planning Division
333 Civic Center Plaza
Tracy, CA 95376

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 949-3231

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

ENVIRONMENTAL CHECKLIST

FOR THE

BIG BIRD INDUSTRIAL PROJECT

October 2020

Prepared for:

City of Tracy
Development Services Department
Planning Division
333 Civic Center Plaza
Tracy, CA 95376

Prepared by:

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 949-3231

INTRODUCTION

The City of Tracy adopted the Northeast Industrial Concept Development Plan for an area comprised of approximately 870 gross acres in the northeastern portion of the city on May 8, 1996 (Resolution Number 96-146) and, pursuant to the California Environmental Quality Act (CEQA), certified an Environmental Impact Report (EIR) (SCH # 95102050) for the Northeast Industrial Concept Development Plan (Resolution Number 96-144).

On August 7, 2012, the Northeast Industrial Concept Development Plan was repealed and replaced by the adoption of the Northeast Industrial Specific Plan (Ordinance 1174). The Northeast Industrial Specific Plan was determined to be consistent with the EIR prepared for the Northeast Industrial Concept Development Plan in 1996 (SCH #95102050) (the "NEISP EIR") and no further environmental analysis was found necessary to be prepared.

Since certification of the NEISP EIR and subsequent adoption of the Northeast Industrial Specific Plan that supersedes the Northeast Industrial Concept Development Plan, the project applicant for the Big Bird Industrial Project (project) has submitted plans to develop four parcels within the Northeast Industrial area. The proposed project's consistency with the Northeast Industrial Specific Plan and a comparison of the potential impacts associated with the proposed project compared to the Northeast Industrial Concept Development Plan Draft EIR analysis, are addressed in this document.

Section 15168(c)(2) of CEQA's implementing regulations (the "CEQA Guidelines"), which governs the use of subsequent activities covered under a previously-certified program EIR, states: "If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required."

As demonstrated in the following analysis, the Northeast Industrial Concept Development Plan Draft EIR continues to serve as the appropriate document addressing the environmental impacts of development within the NEISP area, including the project, pursuant to CEQA. Specifically, the following analysis shows that development of the proposed project would not result in any new significant environmental effects that were not identified and addressed by the NEISP EIR and no new mitigation measures would be required. As such, no new environmental document is required for the proposed project. This document provides the supporting evidence for this conclusion by the City of Tracy.

PROJECT OVERVIEW

PROJECT LOCATION

The project site consists of approximately 86.0 acres located at the southwest corner of Grant Line Road and Chrisman Road in the northeast quadrant of the City of Tracy. The project site is located on Assessor Parcel Numbers (APNs) 250-020-93, 250-020-95, 250-020-81, and 250-020-80. The project's location is shown in Figure 1.

PROJECT DESCRIPTION

The proposed project would include development of a multi-story warehouse facility which covers 823,522 square feet (SF) on the ground floor. Above the ground floor, four additional elevated building levels would be included. These elevated building levels would include a combination of occupied areas, and non-occupied areas consisting of robotic storage platforms.

Internally, the facility would include a ground-floor office (55,808 SF), ground-floor warehouse space (767,714 SF), and four elevated robotics-occupied sortation floors (133,024 SF per floor of occupied area per floor and 532,446 SF of non-occupied robotic storage platforms per floor), for a total occupied building totaling 1,355,618 SF and a non-occupied robotics area of 2,129,784 SF. The overall building height is proposed to be 98-feet, 8-inches at the tallest point.

Due to the proposed building height, the applicant is requesting a NEISP amendment to change the maximum building height from 60 feet to 125 feet for buildings located at the project location. No other changes to the NEISP are proposed with the project application.

The project would also include site access, parking, and circulation improvements. Six access points to the site would be provided: one along Chrisman Road, two along Skylark Way, and three along E. Grant Line Road. As part of the project, the private road located along the southern site boundary would be demolished and a new alignment of Paradise Road would be constructed. Once redeveloped, Paradise Road would be dedicated to the City as a public road. The project would also include development of 234 trailer parking spaces, 1,867 auto parking spaces, and 12 motorcycle parking spaces.

Storm drainage treatment facilities would be located throughout the site. Utility lines (water, sewer, and storm drain) located along the adjacent roadways would be extended into the site to serve the project. Construction of the project is expected to take approximately 16 months total, with project completion estimated for February 2022. The proposed site plan is shown on Figure 2.

EXISTING SITE USES

The project site is currently vacant and undeveloped. No structures are located on-site. The site was previously used for agricultural uses but is no longer irrigated or harvested. Figure 3 shows an aerial view of the project site.

SURROUNDING LAND USES

The project site is located in an area predominately containing industrial and agricultural uses. The surrounding area adjacent to the project site includes industrial and warehouse uses to the northwest, northeast, south, west, and east of the project site. Approximately six agricultural residences and two industrial warehouses are located north of the project site. The project site and the surrounding uses are designated Industrial by the City's General Plan.

GENERAL PLAN AND ZONING DESIGNATIONS

The Tracy General Plan land use designation for the project site is Industrial (consistent with the proposed project) and the site is within the NEISP area. Specific uses allowed in the Industrial

land use designation category range from flex/office space to manufacturing to warehousing and distribution. According to the City's General Plan, Industrial parcels should have a maximum floor-area-ratio (FAR) of 0.5. The proposed project's anticipated FAR would be approximately 0.36. This FAR was calculated based on the total occupied area of the proposed building. Industrial uses are located to provide proper truck access, buffering from incompatible uses and proximity with rail corridors and transit links. Figure 4 displays the General Plan land use designation for the project site and surrounding area.

The project site is zoned NEISP. The NEISP addresses 870 acres in the northeast corner of the City. Anticipated land uses include a mixture of manufacturing, warehousing, and distribution uses including rail-dependent industries and "flex-tech" light industrial. Figure 4 also displays the zoning designation for the project site and surrounding area.

REQUESTED ENTITLEMENTS AND OTHER APPROVALS

The City of Tracy is the Lead Agency for the proposed project, pursuant to the State Guidelines for Implementation of CEQA (Guidelines Section 15050).

If the proposed project is approved by the City of Tracy, this document will be used to take the following actions:

- Determine the appropriate form of CEQA compliance for the project.
- Support the approval of the NESIP amendment to change the maximum building height from 60 feet to 125 feet at the project site location.
- Support the approval of a Development Review Permit.
- Support the approval of grading and building permits.

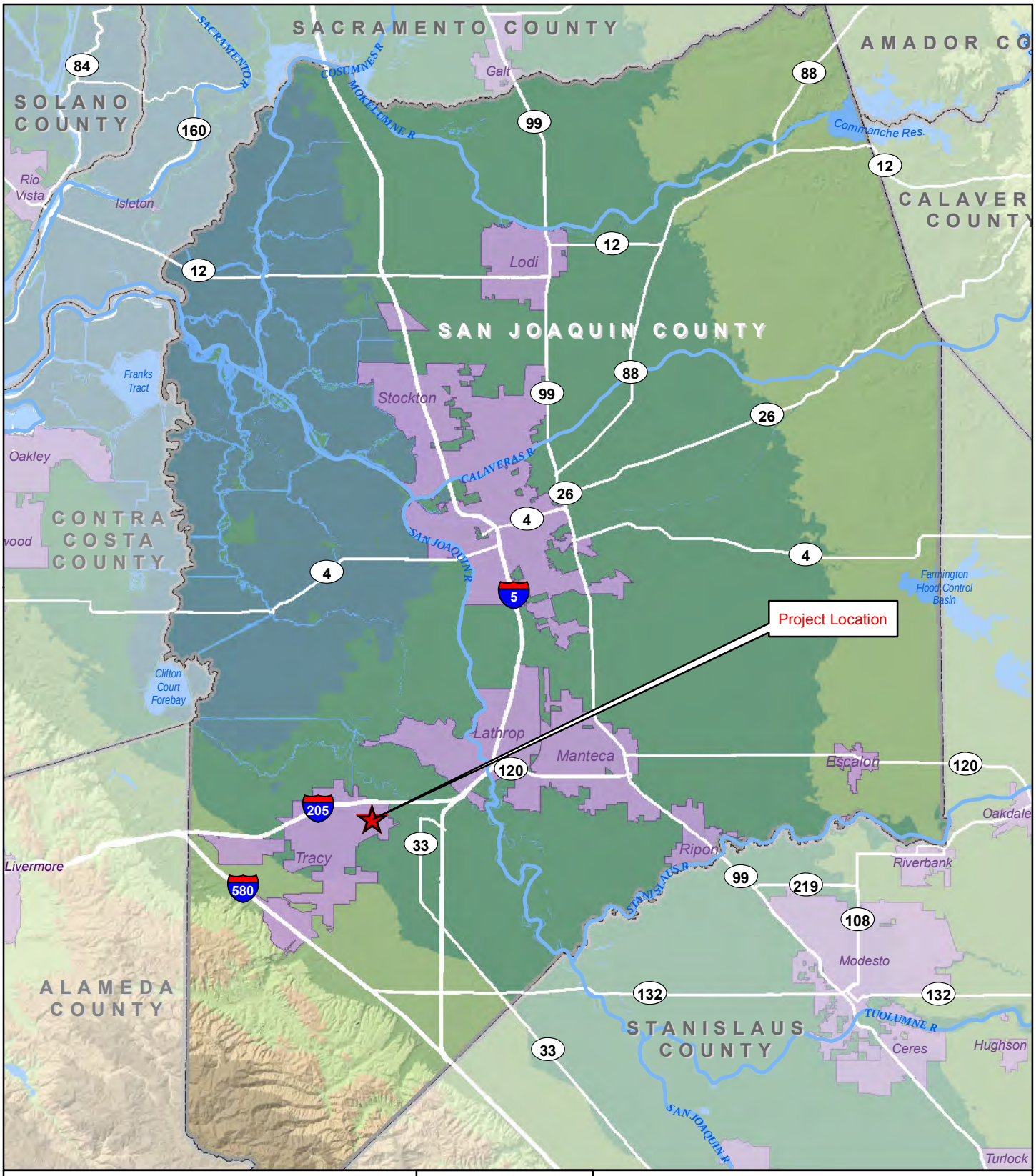
The following agencies may be required to issue permits or approve certain aspects of the proposed project, and may rely on this document for such actions:

- Central Valley Regional Water Quality Control Board (CVRWQCB) - Storm Water Pollution Prevention Plan (SWPPP) approval prior to construction activities.
- San Joaquin Valley Air Pollution Control District (SJVAPCD) - Approval of construction-related air quality permits.
- San Joaquin Council of Governments (SJCOG) - Review of project application to determine consistency with the San Joaquin County Multi-Species Habitat, Conservation, and Open Space Plan (SJMSCP).

PROJECT-SPECIFIC ENVIRONMENTAL REVIEW

The attached Environmental Checklist includes a discussion and analysis of any peculiar or site-specific environmental impacts associated with construction and operation of the proposed project. The Environmental Checklist identifies the applicable mitigation measures from the Northeast Industrial Concept Development Plan EIR and applicable City of Tracy development standards and policies that would apply to the proposed project during both the construction and operational phases. This Environmental Checklist explains how the application of these relevant

mitigation measures and uniformly applied standards and policies would ensure that no peculiar or site-specific environmental impacts would occur.



LEGEND

- Project Location
- County Boundary
- City Area

Sources: CalAtlas; California County GIS Departments.
Map date: September 2, 2020.

N

0 2½ 5
Miles

BIG BIRD INDUSTRIAL
CITY OF TRACY

Figure 1. Regional Location Map

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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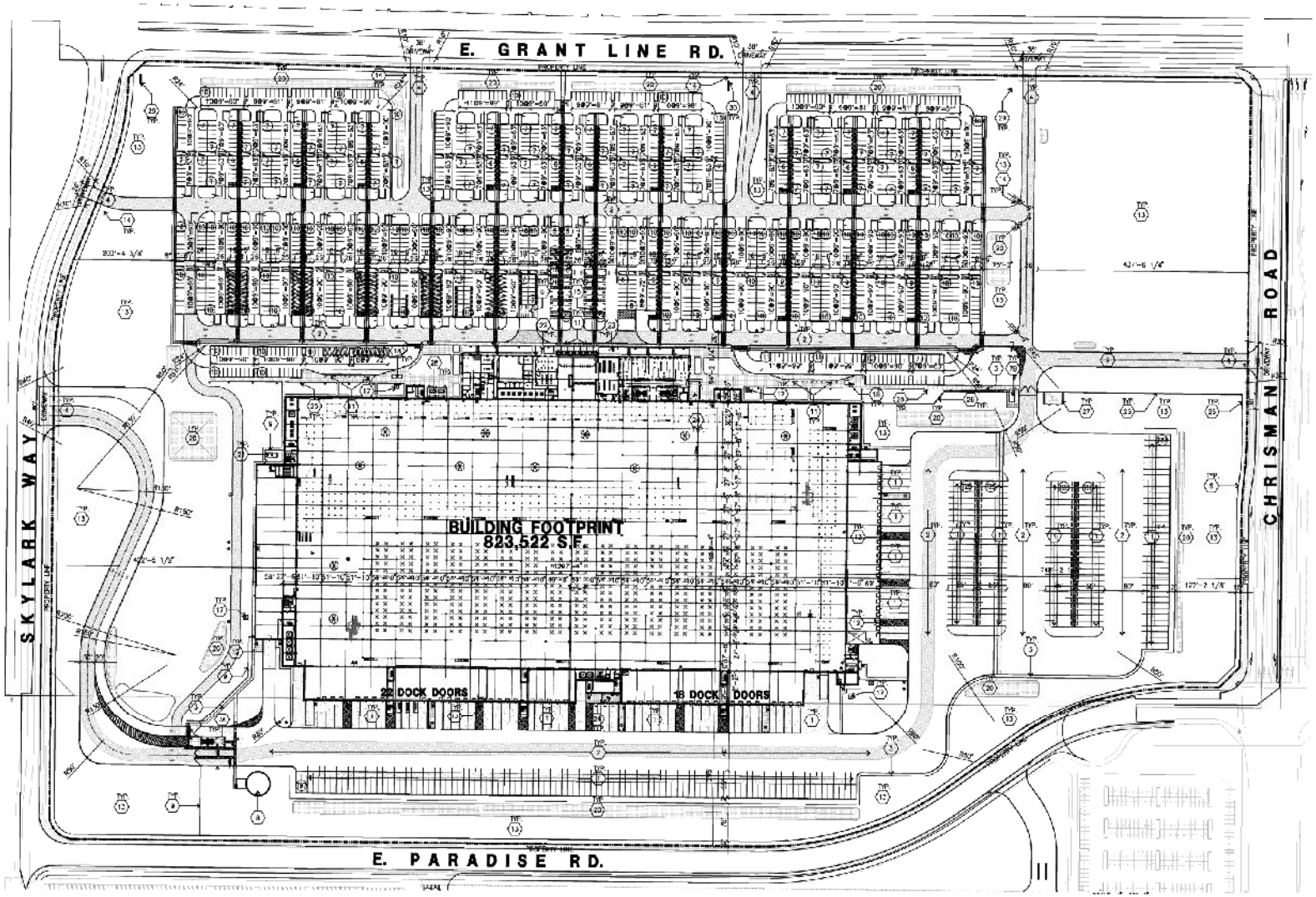

N

0 125 250
Feet

BIG BIRD INDUSTRIAL
CITY OF TRACY

Figure 2. Site Plan

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

Data sources: HPA Architecture. Map date: September 2, 2020.

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LEGEND

Project Big Bird Boundary

0 250 500
Feet

Data sources: San Joaquin County; ArcGIS Online World Imagery Map Service. Map date: September 2, 2020. Revised October 13, 2020.

PROJECT BIG BIRD
TRACY, CALIFORNIA

Figure 3. Aerial View of Project

De Novo Planning Group
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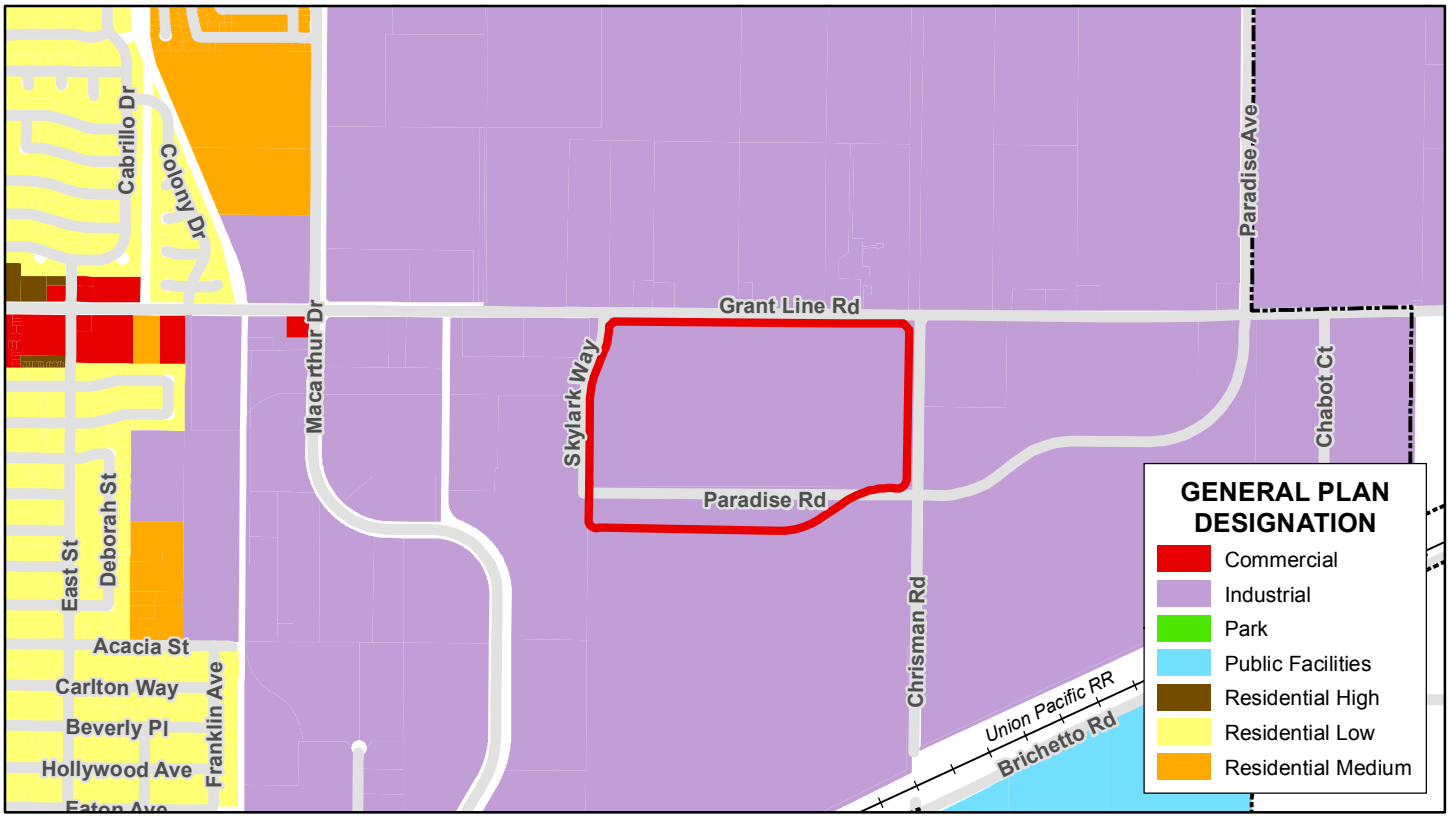

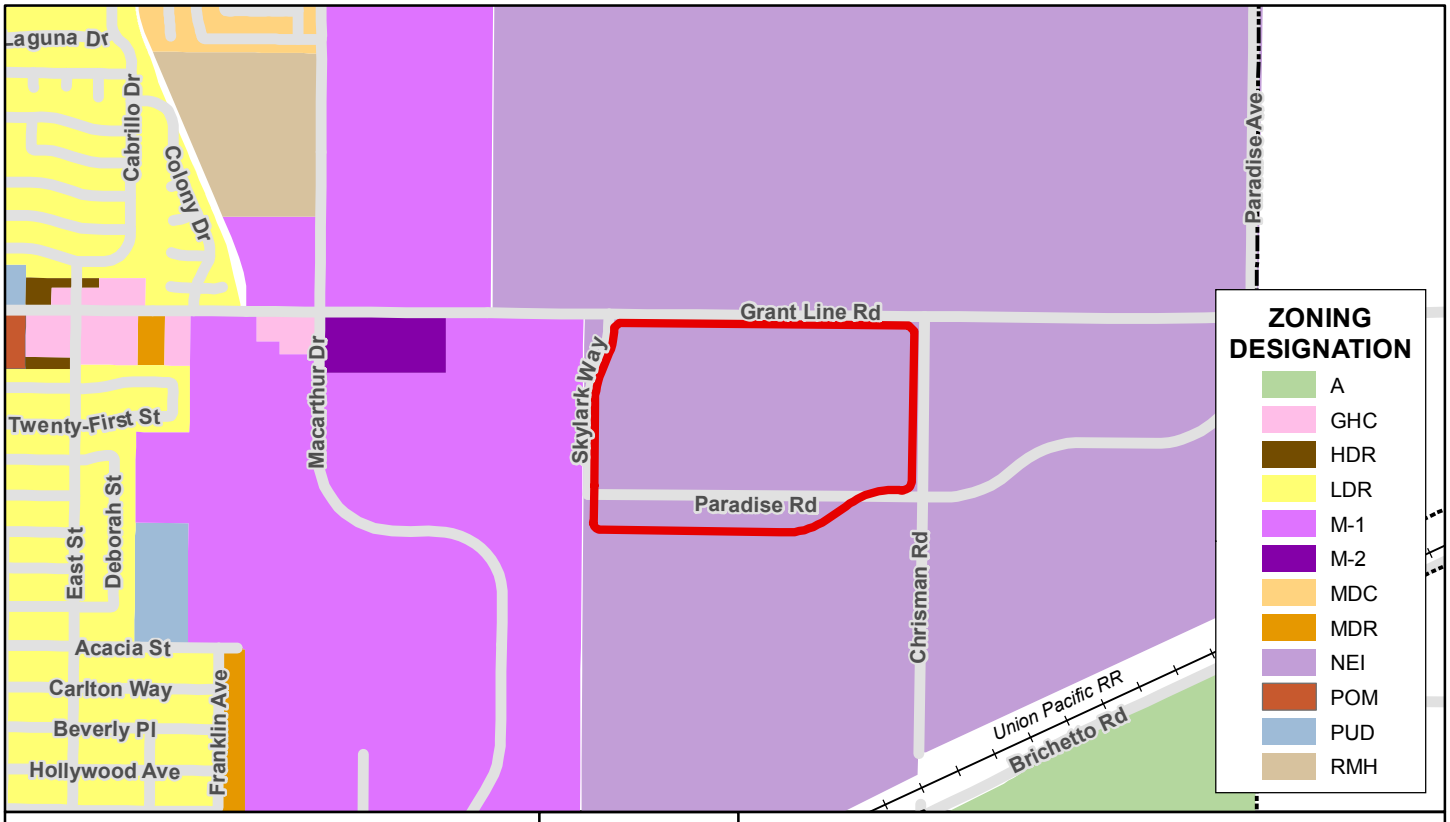

LEGEND

Project Big Bird Boundary

Tracy City Limits

Data sources: San Joaquin County; City of Tracy.
Map date: September 2, 2020. Revised October 13, 2020.

N

0 500 1,000
Feet

PROJECT BIG BIRD
TRACY, CALIFORNIA

Figure 4.General Plan and Zoning Designations

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A Land Use Planning, Design, and Environmental Firm

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ENVIRONMENTAL EVALUATION

This section evaluates the potential environmental effects of the proposed Project using a modified form of the environmental checklist from Appendix G of the State CEQA Guidelines. The definitions of the response column headings include:

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant after the implementation of feasible mitigation measures. The impact may warrant additional analysis within a Subsequent or Supplemental EIR or the Impact would be within the scope of analysis in the NEISP EIR and require no additional analysis to identify additional mitigation measures.

B. "Less than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measure has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." Mitigation measures from the NEISP EIR will be cross-referenced when applicable.

C. "Less Than Significant Impact" applies where the project creates no significant impacts, only Less than Significant Impacts. These impacts are within the scope of Less Than Significant Impacts identified and evaluated within the NEISP EIR and below thresholds considered significant.

D. "No Impact" applies where the project does not create an impact in that category.

E. "Reviewed Under Previous Document" indicates the impact created by the proposed Project would be the same as that identified in the NEISP EIR for the corresponding threshold. Where this finding is made, both are so noted herein and the corresponding boxes are checked in the Environmental Checklist.

This analysis has been prepared to evaluate the proposed Big Bird Industrial Project for consistency with the previously certified NEISP EIR (SCH #95102050). Relevant mitigation measures from the previously certified NEISP EIR have been incorporated into the document, as applicable. It is the intent of this document to apply the adopted mitigation measures, as listed in the Mitigation Monitoring and Reporting Program.

I. LAND USE -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Substantially alter or conflict with the existing or planned use of an area?					*X*
b) Substantially disrupt or divide the physical arrangement of an established community?					*X*
c) Substantially interfere with agricultural production?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) -- Would the Project substantially alter or conflict with the existing or planned use of an area?

The Project site is a vacant, 86-acre site located within the Northeast Industrial Specific Plan (NEISP). The NEISP was created to facilitate the buildout of high-quality industrial and commercial area located in the northeast area of Tracy, consisting of 789.9 acres for industrial development and 45.5 acres for commercial development. Since adoption of the NEISP, the NEISP Area has been built out with commercial, industrial, and business park industrial uses. The proposed Project site is currently surrounded by several large, multi-story industrial/warehouse style buildings to the northwest, northeast, south, west, and east. In addition, approximately six agricultural residences and two industrial warehouses are located north of the project site. Implementation of the proposed Project would provide for additional industrial development on a project site that is designated for Industrial land uses in the General Plan and bordered by similar industrial developments.

The NEISP EIR found that buildout of the industrial development proposed by the NEISP was consistent with the 1993 Tracy Urban Management Plan/General Plan (UMP) and would result in a less than significant impact relating to altering or conflicting with the planned use for the area. Because the proposed Project would include development of industrial uses consistent with the NEISP, the proposed Project's impact relative altering or conflicting with the existing or planned use of an area would be similar to those identified in the NEISP EIR. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. The proposed Project's impact on altering or conflicting with existing or planned uses of an area remains less than significant for industrial uses consistent with the effects of implementation of the NEISP. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Threshold (b) -- Would the Project substantially disrupt or divide the physical arrangement of an established community?

The proposed Project involves the conversion of a vacant, undeveloped site into an industrial development, consisting of a multi-story warehouse and associated parking facilities. Impacts in the NEISP EIR found that the specific plan area does not contain an established community; therefore, development of the NEISP would not disrupt or divide the physical arrangement of an established community. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant under the proposed Project. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (c) -- Would the Project substantially interfere with agricultural production?

The Project site was previously utilized for agricultural production; however, currently, the project site is not irrigated and is vacant and undeveloped. The proposed Project is identified for urban land uses in the NEISP and General Plan, and the Project is consistent with the uses established by both plans. Impacts related to interference with agricultural production were considered less than significant in the previously certified NEISP EIR. The NEISP EIR noted that the conversion of agricultural land in this area was acknowledged by the UMP EIR and recognized as necessary by the adoption of the Statement of Overriding Considerations (Resolution No. 93-226) for the direct impacts to farmland resulting from adoption of the UMP and UMP EIR. Additionally, the City's Right-to-Farm ordinance was designed to protect the existing agricultural operations and reduce impacts to associated with urban and agricultural interference. Moreover, the NEISP Design Guidelines requires development applications to provide information demonstrating provisions of adequate buffers between proposed development and adjacent existing dairy uses.

No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant under the proposed Project. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to land use across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations

contained in the NEISP EIR. Thus, while the proposed Project involves the conversion of vacant agricultural land to an industrial land use, so long as the proposed Project abides by the NEISP guidelines, no cumulatively considerable impacts related to land use would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

II. PUBLIC HEALTH AND SAFETY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Result in a significant exposure of people to potential health hazards?					*X*
b) Involve the use, production, or disposal of hazardous materials?					*X*
c) Result in a significant interference of an emergency plan?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) -- Would the project result in a significant exposure of people to potential health hazards?

The proposed Project involves the conversion of land previously used for agricultural production, and in proximity to existing agricultural production, to a multi-story industrial warehouse. The proposed Project is located on a site that is entirely within the original project area of the previously certified NEISP EIR, and the NEISP EIR specifically assumed that the proposed Project site would be fully developed with industrial uses. In other words, no land will be disturbed or otherwise be impacted by the proposed Project that the NEISP EIR did not already assume would occur as a result of buildout of the specific plan area. Additionally, the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to exposure of people to potential health hazards would be similar to that identified in the previously certified NEISP EIR.

As noted in the NEISP EIR, a substantial portion of the specific plan area was (and, in some areas, still is) in agricultural production. The NEISP EIR found that past agricultural practices on-site may have included the use or storage of chemicals that may still be present today. Additionally, the extent of agricultural-related residue remaining on properties in the NEISP area is unknown. For these reasons, impacts related to exposure of people to potential health hazards were considered potentially significant in the previously certified NEISP EIR. The NEISP EIR imposed the following mitigation measure relative to this topic (which was imposed by the UMP EIR):

> ***Mitigation Measure PHS-1:*** *Project applicants will be required to comply with the San Joaquin County Hazardous Waste Plan. The plan mitigates the potential impacts of known hazardous waste sites on new development [This is Mitigation Measure M 53.1 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure PHS-2:*** *Project applicants shall be required to prepare an environmental assessment for all subdivisions where surface or subsurface contamination may be a concern. The assessment shall include but not be limited to:*

- *Identification of potential sources of contamination caused by past or current land uses; and*
- *Evaluation of non-point sources of hazardous materials, including agricultural chemical residues, fuel storage tanks, septic systems, or chemical storage areas. [This is Mitigation Measure M 53.3 of the UMP EIR in the NEISP EIR].*

Following the implementation of the foregoing mitigation measure, the NEISP EIR concluded that the impacts of the development of the specific plan area would be less than significant relative to this topic. Because the impact of the proposed Project relative to exposure of people to potential health hazards would be similar to that identified in the previously certified NEISP EIR, the proposed Project would be required to impose the same mitigation measure set forth above, as applicable. Therefore, all impacts from the proposed Project will also be less than significant after mitigation. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Threshold (b) -- Would the project involve the use, production, or disposal of hazardous materials?

The proposed Project includes development of a multi-story warehouse facility in an area of the City that currently contains predominantly industrial and agricultural uses. The proposed industrial land use does not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as household cleaners, paint, etc. The operational phase of the proposed Project does not pose a significant hazard to the public or the environment. The Project would be required to comply with applicable federal, state, and local statutes and regulations, including the use restrictions and hazardous waste requirements included in the NEISP.

Impacts related to the use, production, or disposal of hazardous materials were found to be less than significant in the previously certified NEISP EIR. Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact relative to the use, production, or disposal of hazardous materials would be similar to those identified in the NEISP EIR. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant under the proposed Project. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (c) -- Would the project result in a significant interference of an emergency plan?

The proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Project involves the development of industrial land uses within an urbanized environment and would not interfere with any emergency response or evacuation plans. Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact would be similar to those identified in the NEISP EIR. Impacts related to interference with an emergency plan were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant under the proposed Project. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR

Cumulative Impacts

Through implementation of mitigation measures, impacts related to public health and safety across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, while the proposed Project involves the construction of an industrial warehouse on a vacant site, so long as the proposed Project abides by the NEISP guidelines, no cumulatively considerable impacts related to public health and safety would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

III. GEOLOGY -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Result in the exposure of people or property to seismic or other geologic hazards?					*X*
b) Require or restrict access to significant mineral resources?					*X*
c) Result in significant disruptions, displacements, compaction, and over-covering of the soil?					*X*
d) Result in the creation of unstable conditions, require changes in geological substructures, or changes to unique physical features?					*X*
e) Result in significant changes to sedimentation, deposition, or erosion?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) -- Would the project result in the exposure of people or property to seismic or other geologic hazards?

Ground Shaking

Ground shaking is a geological hazard directly related to earthquake activity. The project site is located in an area of moderate to high seismicity. However, no known active faults cross the project site, and the site is not located within an Alquist-Priolo Earthquake Fault Zone. Nevertheless, relatively large earthquakes have historically occurred in the Bay Area and along the margins of the Central Valley. Many earthquakes of low magnitude occur every year in California. The nearest earthquake fault zoned as active by the State of California Geological Survey is the Greenville Fault, located approximately 17 miles to the west of the site.

Other active faults capable of producing significant ground shaking at the site include the Calaveras, 26 miles southwest; the Hayward fault, 28 miles west; the Ortigalita fault, 31 miles southwest; and the San Andreas Fault, 49 miles southwest of the site. Any one of these faults could generate an earthquake capable of causing strong ground shaking at the subject site. Earthquakes of Moment Magnitude (Mw) 7 and larger have historically occurred in the region and numerous small magnitude earthquakes occur every year. A ground shaking event of this magnitude could potentially place people and property at risk; therefore, the previously certified NEISP EIR considered this to be a potentially significant impact.

Liquefication

Liquefaction normally occurs when sites underlain by saturated, loose to medium dense, granular soils are subjected to relatively high ground shaking. During an earthquake, ground shaking may cause certain types of soil deposits to lose shear strength, resulting in ground settlement, oscillation, loss of bearing capacity, landsliding, and the buoyant rise of buried structures. The majority of liquefaction hazards are associated with sandy soils, some silty soils of low plasticity, and some gravelly soils. Cohesive soils are generally not considered to be susceptible to liquefaction. In general, liquefaction hazards are most severe within the upper 50 feet of the surface, except where slope faces or deep foundations are present. Soils that underlay the project site consist of predominantly clay soil particle sizes. Clay-type soils are generally not subject to liquefaction.

According to the previously certified NEISP EIR, the Project site is located in an area identified with a low to moderate liquefication potential; therefore, this is considered a potentially significant impact.

Seismic Settlement

Where the groundwater table is deep, seismic settlement may occur instead of liquefication. Seismic settlement is the compaction or densification of sub-soils as a result of seismically induced ground shaking. Loose sandy and/or silty soils are typically most susceptible to this phenomenon. The previously certified NEISP EIR noted that there is relatively no danger of seismic settlement within Tracy, except within the ephemeral stream channels near Interstate 580 (I-580).

Conclusion

The NEISP EIR identified a number of potentially significant impacts that buildout of the NEISP would have relating to geologic hazards, including impacts relating to ground shaking and liquefaction. Accordingly, the NEISP EIR imposed the following mitigation measures, most of which were also imposed by the UMP EIR:

> ***Mitigation Measure GEO-1:*** *Prior to issuance of an occupancy permit, the applicant shall design all structures according to the Uniform Building Code, Seismic Zone 3 [This is Mitigation Measure M 44.2 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure GEO-****2: Any site grading plans shall be received by a registered engineer specializing in geotechnical assessments, to ensure that the soils can support the load [This is Mitigation Measure M 49.2 of the UMP EIR in the NEISP EIR].*

Following the imposition of the foregoing mitigation measures and relevant goals, policies, and actions of the UMP, the NEISP EIR concluded that buildout of the NEISP area would result in less than significant impacts related to geologic hazards. Because the proposed Project would include development of an industrial use consistent with the NEISP, the proposed Project's impact relative to the exposure of people or property to seismic or other geologic hazards would be similar to those identified in the NEISP EIR. Impacts related to geological hazards were found to be less than significant through implementation of mitigation measures and project consistency

with General Plan goals, policies, and actions; therefore, the impact would remain less than significant for the proposed Project through implementation of mitigation measures identified above, as applicable, and consistency with the goals, policies, and actions of the General Plan.

Additionally, state Building Codes and other applicable regulatory requirements that the Project must comply with have been strengthened to be more protective against earthquakes and other seismic activity since the time the NEISP EIR was certified in 1996, which indicate that impacts related to geology will actually be reduced when compared to the impacts of the NEISP EIR.

Thus, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the previously certified NEISP EIR.

Threshold (b) -- Would the project require or restrict access to significant mineral resources?

As described in the Tracy General Plan EIR, the main mineral resources found in San Joaquin County, and the Tracy Planning Area, are sand and gravel (aggregate), which are primarily used for construction materials like asphalt and concrete. According to the California Geological Survey (CGS) evaluation of the quality and quantity of these resources, the most marketable aggregate materials in San Joaquin County are found in three main areas:

- In the Corral Hollow alluvial fan deposits south of Tracy
- Along the channel and floodplain deposits of the Mokelumne River
- Along the San Joaquin River near Lathrop

The proposed Project site is not located in any of the aforementioned areas. Impacts relative to mineral resources were found to be less than significant in the previously certified NEISP EIR. Because the proposed Project would include development of an industrial use consistent with the NEISP, the proposed Project's impact relative to mineral resources would be similar to those identified in the NEISP EIR. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (c) -- Would the project result in significant disruptions, displacements, compaction, and over-covering of the soil?

The proposed Project involves the construction of a multi-story industrial warehouse, parking lot, and associated infrastructure on a site that is entirely within the NEISP area originally analyzed in the previously certified NEISP EIR. The NEISP EIR specifically assumed that the site would be developed with industrial uses and the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP. Therefore, the

impact relative to significant changes disruptions, displacements, compaction, and over-covering of the soil would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR found that buildout of the specific plan area would result in the disruption, displacement, compaction, and over-covering of soils necessary for the construction of the multi-story warehouse and associated infrastructure, resulting in a potentially significant impact. Accordingly, the NEISP EIR imposed the following mitigation measures relevant to this impact, which were also imposed by the UMP EIR:

***Mitigation Measure GEO**-2: See above*

Mitigation Measure HYD-1: See Section VI (Hydrology and Water Quality)

Impacts related to disruptions, displacements, compaction, and over-covering of the soil were found to be less than significant with implementation of the above mitigation measures. Because the proposed Project's impact relative to this topic would be similar to those identified in the previously certified NEISP EIR, the mitigation measures identified above would also be imposed on the proposed Project, as applicable. Therefore, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the previously certified NEISP EIR

Threshold (d) -- Would the project in the creation of unstable conditions, require changes in geological substructures, or changes to unique physical features?

The Project site is relatively flat and vacant land previously used for agriculture. Development of the Project site will not require extensive grading or excavation. Therefore, the Project will not substantially cut or fill slopes, create unstable earth conditions, change the geological structure of the site, or alter any unique physical features. However, according to the NEISP EIR, the specific plan area lies within a region of moderate to high expansive soils. The majority of the Project site has soils with moderate expansive potential. A small portion of the Project site along the southern boundary has soils with high to very high expansive potential[1]. Structures placed on expansive soils are subject to the effects of shrink/swell, where water absorbed into the clay components may result in damages to substructures, foundations and roadways as foundations rise each wet season and fall each dry season. The previously certified NEISP EIR concluded that buildout of the specific plan area may result in the placement of structures on expansive soils, which would be a potentially significant impact. Accordingly, the NEISP EIR imposed the following mitigation measure, which was also imposed by the UMP EIR:

***Mitigation Measure GEO-1:** See above*

***Mitigation Measure GEO**-2: See above*

[1] U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS). Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

> ***Mitigation Measure GEO-3:*** *Prior to approval of a tentative map, the applicant shall retain a qualified geologist to conduct soil samples throughout the project area to identify expansive soils and those areas shall be identified on a map for the Tracy Public Works Department [This is Mitigation Measure M 49.1 of the UMP EIR in the NEISP EIR].*

Following the implementation of the above mitigation measure and relevant goals, policies, and actions of the UMP, the NEISP EIR concluded that buildout of the NEISP area would result in less than significant impacts relative to this topic. Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact relative to the creation of unstable conditions would be similar to those identified in the NEISP EIR. Therefore, the mitigation identified in the NEISP EIR relevant to this topic would be required as part of the proposed Project, as applicable. Additionally, state Building Codes and other applicable regulatory requirements that the Project must comply with have been strengthened to be more protective against earthquakes and other seismic activity since the time the NEISP EIR was certified in 1996, which indicate that impacts related to geology will actually be reduced when compared to the impacts of the NEISP EIR.

For the reasons stated above, impacts relative to this topic are less than significant. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the land use types, densities, and intensities within the NEISP and EIR. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (e) -- Would the project result in significant changes to sedimentation, deposition, or erosion?

During the construction preparation process, exposed surfaces could be susceptible to erosion from wind and water. Effects from erosion include impacts on water quality and air quality. Exposed soils that are not properly contained or capped increase the potential for increased airborne dust and increased discharge of sediment and other pollutants into nearby stormwater drainage facilities. Risks associated with erosive surface soils can be reduced by using appropriate controls during construction and properly re-vegetating exposed areas. Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact relative to sedimentation, deposition, or erosion would be similar to those identified in the NEISP EIR.

The previously certified NEISP EIR found impacts relative to this topic to be potentially significant due to exposed earth surfaces during construction being susceptible to both wind and water erosion creating problems associated with drainage, water quality, and air quality. Accordingly, the NEISP EIR imposed the following mitigation measure, which was also imposed by the UMP EIR:

> ***Mitigation Measure GEO-4:*** *Prior to approval of final facilities design, the City Public Works Department shall review plans for drainage and storm water runoff control*

systems and their component facilities to ensure that these systems are non-erosive in design. [This is Mitigation Measure of the UMP EIR M 10.1 in the NEISP EIR].

Mitigation Measure GEO-5: *Upon completion of construction, applicants for subsequent projects shall revegetate all exposed soil surfaces within 30 days, or as otherwise approved by the City Department of Public Works, to minimize the potential topsoil erosion and maximize aesthetic appeal. Reasonable alternatives to revegetation may be employed, especially during peak high temperatures periods, provided the same goals are accomplished and subject to the approval by City of Public Works [This is Mitigation Measure M 10.2 of the UMP EIR in the NEISP EIR].*

Mitigation Measure GEO-6: *Projects under review shall be required to submit temporary erosion control plans for construction activities [This is Mitigation Measure M 10.3 of the UMP EIR in the NEISP EIR].*

The NEISP EIR concludes that after mitigation, impacts would less than significant. Because the proposed Project's impact relative to this topic would be similar to those identified in the previously certified NEISP EIR, the mitigation measures identified above would also be imposed on the proposed Project, as applicable. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP with the implementation of the above mitigation measures; therefore, impacts would remain less than significant with the implementation of the above mitigation measures, as applicable. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to geology and soils across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, while the proposed Project would include the development of a multi-story industrial warehouse on a vacant site, so long as the proposed Project abides by the NEISP guidelines, no cumulatively considerable impacts related to geology would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

IV. BIOTIC RESOURCES -- Would the project:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***	***Reviewed Under Previous Document***
a) Result in significant change to the habitat, diversity or number of plant species, including unique, rare, or endangered plants?					*X*
b) Result in a significant change to the habitat, diversity or number of animal species, including unique, rare, or endangered animals?					*X*

EXISTING SETTING

The following describes the existing setting of the San Joaquin County region noting the special-status species known to occur within the region.

Special-Status Plant Species. Numerous special-status plant species are known to occur in the region. Many of these special status plant species require specialized habitats such as serpentine soils, rocky outcrops, slopes, vernal pools, marshes, swamps, riparian habitat, alkali soils, and chaparral, which are not present on the project site. The project site is located in an area that was likely valley grassland prior to human settlement, and there are several plant species that are found in valley and foothills grasslands areas. These species include large-flowered fiddleneck, bent-flowered fiddleneck, big-balsamroot, big tarplant, round-leaved filaree, Lemmon's jewelflower, and showy golden madia. Human settlement has involved a high frequency of ground disturbance associated with the historical farming activities in the region, including the project site.

Special-Status Invertebrates. Special-status invertebrates that occur within the region include: longhorn fairy shrimp, vernal pool fairy shrimp, and midvalley fairy shrimp, which requires vernal pools and swale areas within grasslands; and the valley elderberry longhorn beetle, which is an insect that is only associated with blue elderberry plants, oftentimes in riparian areas and sometimes on land in the vicinity of riparian areas.

Special-Status Reptiles and Amphibians. Special-status reptiles and amphibians that occur within the region include: the western pond turtle, which requires aquatic environments located along ponds, marshes, rivers, and ditches; the California tiger salamander, which is found is grassland habitats where there are nearby seasonal wetlands for breeding; the silvery legless lizard, which is found in sandy or loose loamy soils under sparse vegetation with high moisture content; San Joaquin whipsnake, which requires open, dry habitats with little or no tree cover with mammal burrows for refuge; the Alameda whipsnake, which is restricted to valley-foothill hardwood habitat on south-facing slopes; the California horned lizard, which occurs in a variety of habitats including, woodland, forest, riparian, and annual grasslands, usually in open sandy

areas; the foothill yellow-legged frog, which occurs in partly shaded and shallow streams with rocky soils; the California red legged frog, which occurs in stream pools and ponds with riparian or emergent marsh vegetation; and the western spadefoot toad, which requires grassland habitats associated with vernal pools.

Special-Status Bird Species. Special-status birds that occur within the region include: tricolored blackbird, Swainson's hawk, northern harrier, and bald eagle, which are associated with streams, rivers, lakes, wetlands, marshes, and other wet environments; loggerhead shrike, and burrowing owl, which lives in open areas, usually grasslands, with scattered trees and brush; and raptors that are present in varying habitats throughout the region.

> **Swainson's Hawk.** The Swainson's hawk is threatened in California and is protected by the California Department of Fish and Wildlife (CDFW) and the Migratory Bird Treaty Act (MBTA). Additionally, Swainson's hawk foraging habitat is protected by the CDFW. Swainson's hawks forage in open grasslands and agricultural fields and commonly nest in solitary trees and riparian areas in close proximity to foraging habitat. The foraging range for Swainson's hawk is ten miles from its nesting location. The project site contains suitable foraging habitat for Swainson's hawk, but does not contain suitable nesting habitat.
>
> **Burrowing Owl.** Burrowing owls are a California Species of Special Concern and are protected by the CDFW and the MBTA. Burrowing owls forage in open grasslands and shrublands and typically nest in old ground squirrel burrows. The project site contains suitable, but not high-quality habitat for burrowing owls.

RESPONSES TO CHECKLIST QUESTIONS

Potential impacts to biological resources for the proposed Project are based primarily on data contained within the previously certified EIR prepared for the NEISP, and the General Plan and General Plan EIR.

Threshold (a) -- Would the project result in significant change to the habitat, diversity or number of plant species, including unique, rare, or endangered plants?

The 86-acre Project site is currently vacant and appears disked. The majority of the Project site was previously utilized for alfalfa production involving a high frequency of ground disturbance resulting in the destruction of suitable on-site habitat for unique, rare, or endangered plant species. As shown on Figure 8 of the previously certified NEISP EIR, the NEISP area was largely used for agricultural production with nearly 600 acres for alfalfa and 187 acres for winter-growing oat and barley stands. On nearly all of the agriculture land in the NEISP area, native grass, forb, shrub and tree species were replaced with agricultural plant varieties and introduced weed.

The previously certified NEISP EIR found that the specific plan area is composed entirely of crop fields, farmsteads, and several ranchettes that are not likely to support any unique, rare, or endangered plant species; therefore, development of the NEISP would not result in impacts to plant species. The proposed Project is consistent with the land use designations, land use

intensity, and building density identified in the NEISP; thus, the impact relative to plant species would be similar to that identified in the NEISP EIR. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (b) -- Would the project result in a significant change to the habitat, diversity or number of animal species, including unique, rare, or endangered animals?

As described above, the 86-acre Project site was previously utilized for alfalfa production involving a high frequency of ground disturbance. The proposed Project involves the construction of a multi-story industrial warehouse in a highly urbanized area of Tracy currently built out with similarly scaled warehouses. The proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to animal species would be similar to that identified in the previously certified NEISP EIR.

The previously certified NEISP EIR found that buildout of the specific plan area would result in a loss of fallow and productive agricultural land that may serve a forage habitat for certain animal species; therefore, development of the NEISP would result in potentially significant impacts to a number of special-status animal species, including, the San Joaquin kit fox, Swainson's hawk, and Burrowing Owl. The San Joaquin kit fox is known to den and forage in the southeastern portion of the City in the moderately hilly grassland; however, the San Joaquin kit fox is known to explore outside of its home range for new foraging areas. Thus, there is a remote possibility that a kit fox, while moving outside its home range, could enter the site during construction and risk injury and death. With respect to Swainson's hawks, because of the numerous documented occurrences within ten miles of the project site and the site's suitable foraging habitat for Swainson's hawk, development of the proposed Project could impact Swainson's hawk. With respect to burrowing owls, impacts are considered unlikely, due to the presence of urban development surrounding the site to the east, west, and south. However, the land to the north of the project site contains agricultural land which offers moderate foraging and roosting habitat for wintering or breeding owls.

Accordingly, the NEISP EIR imposed the following mitigation measures to reduce potentially significant impacts to the San Joaquin kit fox, Swainson's hawk, and Burrowing Owl:

> ***Mitigation Measure BIO-1:*** *If Burrowing Owls are found to inhabit a proposed project site, the project applicant shall identify Project-related potential impacts to Burrowing Owls and consult with the CDFG to determine currently accepted avoidance or mitigation criteria. The resulting mitigation plan shall be incorporated, as directed by CDFG, into the development process [This is Mitigation Measure M 21.8 of the UMP EIR in the NEISP EIR].*

Mitigation Measure BIO-2: *The City of Tracy shall attempt to formalize the agreement with San Joaquin County and all of its incorporated cities to fully participate in the development and implementation of the San Joaquin County Swainson's hawk conservation plan. Until such time as the plan is implemented, or in the event the plan is implemented, or the City of Tracy does not participate in the plan, impacts to Swainson's hawk and Swainson's hawk habitat shall be mitigated in consultation with CDFG. Current draft mitigation guidelines for the species are reprinted for informational purposes in technical appendix "N" [This is Mitigation Measure M 21.9 of the UMP EIR in the NEISP EIR].*

Mitigation Measure BIO-3: *The Tracy Community Development Department shall authorize a kit fox pre-construction survey prior to the issuance of grading permits. The survey shall be paid by the Project applicant and involve walking the site at approximately 30-100 foot wide increments searching for potential kit fox den sites. A qualified biologist shall conduct the site survey. If kit fox den sites are discovered, the City shall contact the US Fish and Wildlife Service in consideration of UMP EIR mitigation measures for kit fox [This is Mitigation Measure M 4.4-1 in the NEISP EIR].*

Mitigation Measure BIO-4: *The Project applicant shall make a good faith attempt to implement the following construction practices to minimize the potential for injury or death of a kit fox during construction [This is Mitigation Measure M 4.4-2 in the NEISP EIR].*

- *Limit construction vehicle speeds to 15 mph.*
- *Provide covers or include ramps for all Project-related excavated steep-walled holes or trenches at the end of each day.*
- *Cover the ends of Project-related stored pipes at the end of each work day.*
- *Remove all Project-related food waste at the end of each work day.*

Mitigation Measure BIO-5: *Prior to approval of a Final Map, the Project applicant will either provide a mitigation fee appropriate and consistent with the I-205 Specific Plan, develop a Habitat Management Plan for the Swainson's hawk in consultation with the CDFG, or enter a county-wide HCP, if available [This is Mitigation Measure M 4.4-3 in the NEISP EIR].*

Mitigation Measure BIO-6 *The Tracy Community Development Department shall authorize a Burrowing Owls pre-construction survey prior to the issuance of grading permits. The survey shall be paid by the Project applicant and conducted by a qualified ornithologist. If no owls are located during these surveys, no additional action is warranted. However, if breeding owls are located on or adjacent to the site, then an ornithologist shall determine the extent of a construction buffer zone around the active nesting Burrowing Owl. No construction activities shall proceed which would disturb breeding owls. The CDFG shall also be immediately contacted to determine if any additional mitigation measures are necessary. [This is Mitigation Measure M 4.4-3 in the NEISP EIR].*

The previously certified NEISP EIR determined that through implementation of the above mitigation measures impacts to special-status animal species would be reduced to less than significant. Because the proposed Project's impact relative to animal species would be similar to that identified in the previously certified NEISP EIR, mitigation identified in the NEISP EIR would be required, as applicable, to reduce impacts to animal species to a less than significant level consistent with the findings of the EIR.

Additionally, the project site is located within the jurisdiction of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan ("Plan" or "SJMSCP"), which was adopted in November 2001 approximately 5 years after the adoption of the NEISP EIR. The key purpose of the SJMSCP is to "provide a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses, while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish and wildlife species, especially those that are currently listed, or may be listed in the future, under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); providing and maintaining multiple use Open Spaces which contribute to the quality of life of the residents of San Joaquin County; and, accommodating a growing population while minimizing costs to project proponents and society at large."

The project site is located in the Category C/Pay Zone B. The Category C/Pay Zone B includes parcels containing habitat types classified as Agricultural Habitat Lands which are not otherwise exempt. Applicants pay mitigation fees on a per-acre basis, as established by the JPA, according to the measures needed to mitigate impacts to the various habitat and biological resources. The Project applicant would be required to seek coverage under the SJMSCP and would be subject to the Category C/Pay Zone B fees in order to mitigate for any habitat impacts. Coverage involves compensation for habitat impacts on covered species through payment of development fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. In addition, coverage includes incidental take avoidance and minimization measures for species that could be affected as a result of the proposed project. Participation in the SJMSCP and payment of the SJMSCP coverage fee is required, as shown in Mitigation Measure BIO-5 above.

Therefore, consistency with the mitigation measures identified in the NEISP EIR, as well as the SJMSCP, would ensure that impacts relative to this topic are less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

The proposed Project is consistent with the land use and zoning designations contained in the NEISP. Impacts related to biological resources across the NEISP Area were considered cumulatively significant and unavoidable in the previously certified NEISP EIR. Specifically, the NEISP EIR found that the buildout of the specific plan has the potential to eliminate foraging habitat for the Swainson's hawk. Mitigation previously discussed in this section would be

implemented by the proposed Project that would reduce the severity of significant and unavoidable cumulative effects. For example, the Project will be required to pay the SJMSCP coverage fee to compensation for habitat impacts on covered species through payment of development fees for conversion of lands that may provide habitat for covered special status species. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed. No further evaluation is required.

V. CULTURAL RESOURCES -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Require the alteration or the destruction of a prehistoric or historic archaeological site, historic building, structure, or object?					*X*
b) Require a physical change which will affect unique ethnic cultural values or restrict religious or sacred uses?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) -- Would the project require the alteration or the destruction of a prehistoric or historic archaeological site, historic building, structure, or object?

The 86-acre Project site is currently vacant and appears disked. The majority of the Project site was previously utilized for alfalfa production involving a high frequency of ground disturbance. The proposed Project involves the construction of a multi-story industrial warehouse in a highly urbanized area of Tracy currently built out with similarly scaled warehouses. The proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to destruction of a prehistoric or historic resource would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR does not identify the proposed Project site as having prehistoric period, or cultural resources. Additionally, there are no known unique cultural, historical, paleontological or archeological resources known to occur on, or within the immediate vicinity of the project site. However, the previously certified NEISP EIR found that the potential still exists for the discovery of buried deposits or features of an archaeological past. Therefore, the NEISP EIR found this to be a potentially significant impact, which would be mitigated to less than significant through implementation of the following mitigation measures:

> ***Mitigation Measure CUL-1:*** *On-site preservation of the resource is the preferred alternative. Preserving a cultural deposit maintains the artifacts in context and essentially "banks" the sites for future, at which time more sophisticated research methods and tools may be available. Additionally, preservation of a cultural deposit may prevent inadvertent discovery of, or damage to, human burials. Preservation can be accomplished through a number of means such as capping or covering the site with a layer of soil, fencing the site area, and/or incorporation of the resource into a greenbelt or park area. [This is Mitigation Measure M 24.2 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure CUL-2:*** *If preservation of the resource is not feasible, additional studies, such as archival research or scientific, controlled excavation of prehistoric cultural resources may be required. The Native American community should be notified of any proposed excavation of prehistoric cultural resources as there is a high*

probability that burial sites may occur in the TPA [This is Mitigation Measure M 24.3 of the UMP EIR in the NEISP EIR].

Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact relative to the destruction of a prehistoric or historic archaeological sites would be similar to those identified in the NEISP EIR. Therefore, the mitigation identified in the NEISP EIR relevant to this topic would be required as part of the proposed Project, as applicable. The proposed Project would also be required to implement relevant General Plan policies and actions relevant to this topic. Consistency with the General Plan and mitigation measures identified in the NEISP EIR would ensure that impacts relative to this topic are less than significant, consistent with the finding of the previously certified EIR for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed; therefore, no additional environmental review is required.

Threshold (b) -- Would the project require a physical change which will affect unique ethnic cultural values or restrict religious or sacred uses?

The proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to affecting unique ethnic cultural values or restricting religious or sacred uses would be similar to that identified in the previously certified NEISP EIR. Impacts relative to this topic in the previously certified NEISP EIR were found to be less than significant from buildout of the specific plan; therefore, impacts would remain less than significant. As described above, the Project site is currently vacant and appears disked. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. The Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to cultural resources across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, while the potential still exists for the discovery of buried deposits or features of an archaeological past during development of the proposed Project, so long as the proposed Project abides by the NEISP guidelines, no cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

VI. HYDROLOGY AND WATER QUALITY-- WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***	***Reviewed Under Previous Document***
a) Result in significant changes to the absorption rates, drainage patterns, the rate and amounts of surface runoff, and the exposure of people and property to water-related hazards?					*X*
b) Result in significant changes to the amount or quality of surface water in any water body?					*X*
c) Result in significant changes to ground water resources?					*X*

Responses to Checklist Questions

Threshold (a) -- Would the project result in significant changes to the absorption rates, drainage patterns, the rate and amounts of surface runoff, and the exposure of people and property to water-related hazards?

When land is in a natural or undeveloped condition, soils, mulch, vegetation, and plant roots absorb rainwater. This absorption process is called infiltration or percolation. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates the soil and is stored either temporarily or permanently in underground layers of soil. When the soil becomes completely soaked or saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow on the surface of land to low lying areas, ditches, channels, streams, and rivers. Rainwater that flows off of a site is defined as storm water runoff. When a site is in a natural condition or is undeveloped, a larger percentage of rainwater infiltrates into the soil and a smaller percentage flows off the site as storm water runoff.

The infiltration and runoff process is altered when a site is developed with urban uses. Houses, buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. As impervious surfaces are added to the ground conditions, the natural infiltration process is reduced. As a result, the volume and rate of storm water runoff increases. The increased volumes and rates of storm water runoff may result in flooding if adequate storm drainage facilities are not provided.

The proposed Project involves the construction of a multi-story industrial warehouse, parking lot, and associated infrastructure on a site that is entirely within the NEISP area originally analyzed in the previously certified NEISP EIR. The NEISP EIR specifically assumed that the site would be developed with industrial uses and the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP. Therefore, the impact relative to significant changes to the absorption rates, drainage patterns, the rate and

amounts of surface runoff, and the exposure of people and property to water-related hazards would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR found that although the Project would not result in any changes to surface water bodies, the development of the Project would result in the increase of impervious areas relative to the existing conditions. This would alter the existing drainage patterns and increase the amount of stormwater runoff on- and off-site and could result in the exposure of people and property to localized flooding. Therefore, the previously certified NEISP EIR found this to be a potentially significant impact that would be mitigated to less than significant through implementation of the following mitigation measures:

> ***Mitigation Measure HYD-1:*** *Prior to the approval of the first Site Plan, Parcel and or Tentative Map for the Northeast Industrial project area, the applicant(s) will be required to demonstrate compliance with the approved Storm Drainage Master Plan or to provide an alternative plan to provide facilities acceptable to the City. Prior to the approval of each Site Plan, Parcel and Tentative Map, the City shall review the Project application to ensure that existing and/or proposed facilities are adequate to meet project service demands, and are consistent with the City's Master Plan or an alternative acceptable to the City. In order to provide adequate facilities to serve individual developments within the Project area, each applicant shall participate in any applicable City-wide or area program, or establish the appropriate funding toward these facilities prior to the recordation of the corresponding Final Map [This is Mitigation Measure 4.11-5 in the NEISP EIR].*

Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measure set forth above, as applicable. Further, mandatory regulations relating to hydrology and water quality, particularly stormwater regulations, have become significantly stricter and more protective of the environment since the NEISP EIR was certified in 1996, and the proposed Project will be required to comply with those current local, State, and Federal regulations. Accordingly, the proposed Project would not result in any new or increased significant impacts relative to this topic that were not already analyzed in, and fully covered by, the previously certified EIR.

Threshold (b) -- Would the project result in significant changes to the amount or quality of surface water in any water body?

The proposed Project involves the construction of a multi-story industrial warehouse, parking lot, and associated infrastructure on a site that is entirely within the NEISP area originally analyzed in the previously certified NEISP EIR. During construction activities associated with the buildout of the NEISP area, soil is exposed and more susceptible to water erosion and has the potential to increase the turbidity of the Old River through introduction of suspended solids. These sediments may also behave as carriers for other pollutants such as organic components, metals, phosphates, and other toxic material. Construction of the proposed Project would result soil erosion, which if not properly controlled could carry to nearby storm drains. Additionally, during operation of the proposed Project, the pavement and controlled runoff from impervious

surfaces may also contribute to an increase in surface water pollution. The NEISP EIR specifically assumed that the site would be developed with industrial uses and the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP. Therefore, the impact relative to changes to the amount or quality of surface water would be similar to that identified in the previously certified NEISP EIR.

The previously certified NEISP EIR found that buildout of the specific plan area would result in potentially significant impacts to changes to the amount or quality of surface waters, and accordingly, imposed the following mitigation measures:

> ***Mitigation Measure HYD-2:*** *The City shall monitor water quality regulations for storm water runoff. If changes in the standards occur, more controls on sources of pollutants in storm water or removal of pollutants from storm water may be necessary, either through structural controls or implementation of best management practices [This is Mitigation Measure M 64.1 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure HYD-3:*** *The City shall require temporary erosion control measures during new Project construction and shall require the implementation of permanent Best Management Practices in new developments to minimize discharge of urban pollutants into local waterways [This is Mitigation Measure M 64.2 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure HYD-4:*** *Subject to review and approval by the Public Works Department, a comprehensive plan to prevent erosion, siltation, and contamination of storm water during construction shall be required for the Project prior to Final Map approval. Such a plan must be prepared and implemented in accordance with permit conditions and requirements of the State Water Resources Control Board. At a minimum, this plan shall include the following [This is Mitigation Measure 4.6-1 in the NEISP EIR]:*
>
> > *-phasing of construction to ensure that grading operations are targeted for the dry months of the year as directed by the City;*
> >
> > *-methods to reduce erosion in the event of a storm during construction such as the use of sediment traps, barriers, covers, or other methods approved by the City; and,*
> >
> > *-a description of temporary mulching, seeding, or other suitable erosion stabilization measures approved by the City to protect exposed areas during construction activities.*
>
> ***Mitigation Measure HYD-5:*** *Prior to recordation of Final Maps, the applicant shall coordinate with the City for review and approval a plan to provide regular cleaning of streets and parking lots (where applicable) to limit the accumulation of "first flush" contaminants during construction [This is Mitigation Measure 4.6-2 in the NEISP EIR].*

Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above, as applicable. Further, mandatory regulations relating to hydrology and water quality, particularly stormwater regulations, have become significantly stricter and more protective of the environment since the NEISP EIR was certified in 1996, and the proposed Project will be required to comply with those local, State, and Federal regulations. Accordingly, the proposed Project would not result in any new or increased significant impacts relative to this topic that were not already analyzed in, and fully covered by, the previously certified EIR.

Threshold (c) -- Would the project result in significant changes to ground water resources?

The Project site is currently vacant and does not contain any waterways. Development of the Project would result in paving the majority of the Project site. As such, water absorption is currently unrestricted, but would be altered after the site is developed with the industrial use. The proposed Project is located on a site that is entirely within the original project area of the previously certified NEISP EIR, and the NEISP EIR specifically assumed that the proposed Project site would be fully developed with industrial uses. In other words, no land will be disturbed or otherwise be impacted by the proposed Project that the NEISP EIR did not already assume would occur as a result of buildout of the specific plan area. Additionally, the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to changes to ground water resources would be similar to that identified in the previously certified NEISP EIR.

Although water absorption at the site is currently unrestricted due to the absence of substantial structures or pavement and porous soils, groundwater recharge occurs mostly in the upland valley areas of the County adjacent to rivers and larger streams. As such, impacts relative to this topic in the previously certified NEISP EIR were found to be less than significant from buildout of the specific plan; therefore, impacts would remain less than significant under the proposed Project. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to hydrology and water quality across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, while the proposed Project would change the site's existing drainage patterns and potentially impact water quality, so long as the proposed Project abides by the NEISP guidelines, no cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed

Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

VII. TRANSPORTATION AND CIRCULATION -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Substantially impact the existing transportation system or parking facilities?					*X*
b) Result in substantial traffic hazards to motor vehicles, bicyclists, or pedestrians?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Thresholds (a,b) -- Would the project substantially impact the existing transportation system or parking facilities or result in substantial traffic hazards to motor vehicles, bicyclists, or pedestrians?

The proposed Project involves the development of a multi-story industrial warehouse in a highly urbanized area of Tracy built out with similar uses. The proposed Project is located on a site that is entirely within the original project area of the previously certified NEISP EIR, and the NEISP EIR specifically assumed that the proposed Project site would be fully developed with industrial uses. In other words, no land will be disturbed or otherwise be impacted by the proposed Project that the NEISP EIR did not already assume would occur as a result of buildout of the specific plan area. Additionally, the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to transportation and circulation would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR assumed that the buildout of the specific plan would result in the development 45.5 acres of net commercial development and 799 acres of net industrial development, which would have generated 9,142 new jobs. (NEISP EIR, p. 4.52.) Specifically, for industrial uses, the NEISP EIR assumed certain uses would require 8 employees per acre, and others would result in 11 employees per acre. (Id.) The NEISP EIR assumed that total trip generation from employees, customers and truck traffic from the buildout and operation of the Original Project would be 58,573 daily trips, 3,000 AM peak hour trips, and 5,241 PM peak hour trips.

The NEISP EIR identified a number of potentially significant impacts relating to traffic and transportation, specifically including impacts to roadways, interchanges, surface streets and freeway segments (NEISP EIR, pp. 4.59 through 4.61.). Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure TRA-1:*** *The Northeast Industrial Concept Development Plan should be modified as illustrated in Figure 21 [This is Mitigation Measure 4.7-1 in the NEISP EIR].*
>
> *As defined in the City of Tracy Roadway Master Plan and the UMP Finance Plan (pending), developers of the Northeast Industrial area will be responsible for:*

-Right-of-way dedication and construction relating to fronting property owner responsibilities (including curb lanes, bike lanes, curb, sidewalk and landscape buffers) along major arterials and expressways (Grant Line and Chrisman), and

-Contributions to a finance plan to fund construction of arterial and expressway general-use lanes and medians, freeway interchanges, and major rail and canal crossing structures, and

-Right-of-way dedication and construction of all needed minor arterials, collectors and industrial streets within the Plan.

-Future roadway alignments shall recognize existing property lines, structures, and other physical features (such as dairy operations) so as to preserve their continued uses (unless otherwise provided for).

Mitigation Measure TRA-2: *Contribute, along with other cumulative development, to the following modifications to the interchange: 1) extension of the eastbound on-ramp by a length sufficient to allow trucks safe merge speeds relative to mainline traffic (estimated by Caltrans to be roughly 1000 feet), and 2) construct a loop on-ramp in the northeast quadrant of the interchange to lengthen the ramp and reduce its slope [This is Mitigation Measure 4.7-2 in the NEISP EIR].*

Mitigation Measure TRA-3: *Widen MacArthur from Pescadero Avenue through the interchange as illustrated in Figure 20 [This is Mitigation Measure 4.7-3 in the NEISP EIR].*

Mitigation Measure TRA-4: *Preserve right-of-way for an additional interchange between Paradise Road and the Yellow Freight property and for access roads extending south from the interchange to meet existing Chrisman road at Grant Line Road and north to or beyond Arbor Avenue. Develop a funding plan for the interchange involving the Cities of Tracy and Lathrop. Upon completion of the specified improvements to the MacArthur interchange, begin Caltrans project development studies and engineering for new interchange. Begin construction in time to prevent LOS at MacArthur interchange from deteriorating into the LOS E range [This is Mitigation Measure 4.7-4 in the NEISP EIR].*

Mitigation Measure TRA-5: *As development proceeds, monitor LOS at these six locations, and implement the mitigation measures depicted in Figures 1 9 and 20 in time to prevent unacceptable conditions [This is Mitigation Measure 4.7-5 in the NEISP EIR].*

Mitigation Measure TRA-6: *A potential mitigation measure for cumulative post-2015 development in the area, including Gold Rush City (now known as River Islands) and Mountain House would be to proceed with planning of the northern Tracy expressway corridor identified in the City's Roadway Master Plan. In its ultimate form, this expressway would connect on the east with Gold Rush City's Golden Valley Expressway and would extend to Mountain House on the west. Its benefits are not expected to be*

significant prior to 2015, but plan lining and right-of-way preservation should proceed so that construction can be coordinated beyond 2015 with the Golden Valley Expressway connection from Lathrop. In 2015, the new expressway would reduce p. m. peak traffic volumes by about 500 vehicles (-7 %) in the eastbound direction and 250 (-5 %) in the westbound direction on 1-205 between Tracy Boulevard and MacArthur Drive, more than off-setting the net increases attributable to the Northeast Industrial Plan [This is Mitigation Measure 4.7-6 in the NEISP EIR].

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that the impacts of the development of the specific plan area would be less than significant. However, the NEISP EIR also noted that the UMP EIR recognized that future development and buildout of the NEISP area, including the Project site, with all the other areas analyzed therein, would result in cumulative and unavoidable impacts on traffic and circulation, and the City adopted a Statement of Overriding Considerations (#93-226), which is incorporated herein by reference (NEISP EIR, p. 4.63.).

A Traffic Analysis (dated October 16, 2020) was prepared by Kimley-Horn and Associates (Kimley-Horn) for the proposed Project, which can be found in *Attachment A*. The Traffic Analysis was conducted to determine whether the proposed Project's potential traffic and circulation impacts were adequately addressed in the previously certified NEISP EIR, and to determine whether any new circulation system improvements would be required to ensure that the Project complies with applicable General Plan policies and City requirements.

The trip generation for projects are typically calculated using trip generation rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual,* 10th Edition. However, according to the Traffic Analysis, a custom trip generation was developed for the proposed Project based on employee shift data provided by the Project applicant to more accurately reflect the trips generated by the development. The Project is anticipated to generate 3,573 daily trips, 593 AM peak hour trips (560 in / 33 out), and 995 PM peak hour trips (494 in / 501 out) for both passenger cars and truck trips.

The proposed Project would result in the development of only a portion of the NEISP area, and the traffic generated by such development is well within the levels of traffic generation that the NEISP EIR assumed would be generated by the development of the Site with industrial uses. According to the Traffic Analysis, the NEISP area can be broken into 11 transportation analysis zones (TAZs), and Table 1 on the following page provides the current NEISP development status in net acres organized by TAZ.

Table 1: NEI Specific Plan Development Status per TAZ

TAZ	Project Type (Gross Acres)					
	Vacant	Basin	Built	Approved	Pending	Project
514	10.48	0	86.49	0	0	0
628	52.2	0	0	0	0	0
629	0	0	0	78.33	0	0
631	20.52	0	48.06	29.27	0	0
633	5.35	0	63.49	21.4	4.73	0
648	0	0	0	0	0	94.14
649	0	0	90.43	0	0	0
677	14.66	35.07	25.15	0	0	0
678	23.83	0	28.53	0	0	0
679	2.18	0	51.33	0	0	0
680	9.18	0	44.97	0	0	0
Total	138.4	35.07	438.45	129	4.73	94.14
Percentage of Specific Plan	17%	4%	52%	15%	1%	11%
Specific Plan Area (Net Acres)[1]						845

[1] The total above excludes the existing or proposed roadways (25.9 acres).

Source: Kimley-Horn, 2020

As shown in Table 1, the NEISP has currently developed 52 percent of available land with 15 percent more approved and one percent further pending approval. With the inclusion of the future basin and the proposed Project, the NEISP will have developed 83 percent of available land. Therefore, only 17 percent will remain either vacant or currently occupied by a single-family dwelling unit. Trip generation estimates were calculated for the existing uses, planned uses (approved and pending), and vacant land to determine whether the proposed Project's trips fall within the NEISP EIR buildout estimates. Trip generation for built, approved and pending building were analyzed using the Citywide Roadway and Transportation Management Plan (TMP) employment densities and peak hour trip rates, as shown in Table 2.

Table 2: Employment and Trip Rate Assumptions

Type	Employment Density	AM Trip Rate per ksf	PM Trip Rate per ksf
High-cube Warehouse	1 employee per ksf	0.12	0.14
Warehouse	1 employee per ksf	0.17	0.33
Office	3 employees per ksf	0.66	1.26
NEISP EIR	0.5 employee per ksf	0.16	0.16

Source: Kimley-Horn, 2020

Utilizing the peak hour trip rates identified above, Kimley-Horn calculated the total trip generation for the NEISP area with the proposed Project and compared the total trip generation to the total trip generation within the previously certified NEISP EIR to determine whether the proposed Project is consistent with the transportation analysis assumptions for buildout of the NEISP area (Table 3).

Table 3: Trip Generation with TMP Assumption

TAZ	Projects	Project Size	AM Peak Hour	PM Peak Hour
Built/Approved/Pending Projects Trip Generation				
514	Built – Kellogg's, Katerra, Pacific Medical	1,383 KSF	199	262
628	Vacant			
629	Approved – Seefried	1,028 KSF	124	144
631	Built – FEMA, IPT2 Approved – IPT 4	1,415 KSF	247	276
633	Built – Home Depot, Ridgeline Approved – Central Plastics, Home Depot Parking Pending – Interstate Truck Center	1,133 KSF	134	180
648	Proposed Project			
649	Built – Crate & Barrel, Amazon Fulfillment Center	1,921 KSF	231	269
677	Built – Hollingsworth	537 KSF	91	177
678	Built – Animal Shelter, Barbosa Cabinets, Top Shelf	416 KSF	76	147
679	Built – Boassard, Best Buy, SSA	993 KSF	119	139
680	Built – Crate & Barrel, WSID, Amazon Parking	400 KSF	48	56
	Built/Approved/Pending Subtotal		1,269	1,650
Proposed Project Trip Generation				
	Proposed Project Subtotal		593	995
Future Development[1]				
	Future Development Subtotal	2,767 KSF	443	443
Trip Generation Totals				
Built/Approved/Pending Net Total			**1,269**	**1,650**
Built/Approved/Pending + Proposed Project			**1,862**	**2,645**
Built/Approved/Pending + Proposed Project + Future			**2,305**	**3,088**
Previously Certified NEISP EIR Trip Generation				
			3,000	5,241
Trip Generation Totals compared to NEISP EIR Trip Generation				
(Approved + Proposed Project) – NEISP Trip Generation[2]			**-1,138**	**-2,596**

(Built/Approved/Pending + Proposed Project + Future) – NEISP Trip Generation[2]	**-695**	**-2,153**

1. It was assumed that all current and future developments were industrial since no commercial land uses are shown in the City's General Plan (2011, 2016 update).

Source: Kimley-Horn, 2020

As shown in Table 3, the built/approved/pending trip generation of projects within the NEISP area is 1,269 trips in the AM peak hour and 1,650 in the PM peak hour while the estimated future trip generation for the vacant parcels in the NEISP area is 443 trips for both AM and PM peak hours. The Project is anticipated to add 593 AM peak hour trips and 995 PM peak hour trips, resulting in a total estimated trip generation of 2,305 AM peak hour trips and 3,088 PM peak hour trips for the NEISP area. With the addition of the proposed Project trips, NEISP trip generation remains well below the previously certified EIR buildout estimates. In fact, the existing and future uses that have and will be developed in the NEISP area since the 1996 certification of the EIR are anticipated to result in 695 fewer AM peak hour trips and 2,153 fewer PM peak hour trips as compared to the total trips assumed in the NEISP EIR, above. Therefore, the proposed Project is consistent with the NEISP traffic circulation analysis assumptions within the previously certified NEISP EIR.

For the reasons set forth above, all of the proposed Project's transportation impacts – which would be subject to the same mitigation measures as the previously certified NEISP EIR, as applicable – would be less than significant after mitigation. Accordingly, the proposed Project would not result in any new or increased significant impacts relating transportation that were not already analyzed in, and fully covered by, the previously certified EIR.

Cumulative Impacts

The proposed Project is consistent with the land use and zoning designations contained in the NEISP. Impacts related to transportation and circulation across the NEISP Area were considered cumulatively significant and unavoidable in the previously certified NEISP EIR. Specifically, these cumulatively significant and unavoidable transportation and circulation impacts were related to inconsistencies with the Tracy Roadway Master Plan, interchange impacts, and freeway impacts. The proposed Project would not cause a new impact to occur that was not previously disclosed. Mitigation previously discussed in this section would be implemented by the proposed Project that would reduce the severity of significant and unavoidable cumulative effects. No further evaluation is required.

VIII. AIR QUALITY – WOULD THE PROJECT:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***	***Reviewed Under Previous Document***
a) Exceed regional air quality emissions standards?					*X*
b) Exceed local air quality emission standards?					*X*
c) Result in significant construction related to air quality impacts?					*X*
d) Result in the creation of objectionable odors?					*X*

EXISTING SETTING

The project site is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD). This agency is responsible for monitoring air pollution levels and ensuring compliance with federal and state air quality regulations within the San Joaquin Valley Air Basin (SJVAB) and has jurisdiction over most air quality matters within its borders.

This region has had chronic non-attainment of federal and state clean air standards for ozone/oxidants and particulate matter due to a combination of topography and climate. The San Joaquin Valley (Valley) is hemmed in on three sides by mountain ranges, with prevailing winds carrying pollutants and pollutant precursors from urbanized areas to the north (and in turn contributing pollutants and precursors to downwind air basins). The Mediterranean climate of this region, with a high number of sunny days and little or no measurable precipitation for several months of the year, fosters photochemical reactions in the atmosphere, creating ozone and particulate matter. Regional factors affect the accumulation and dispersion of air pollutants within the SJVAB.

Air pollutant emissions overall are fairly constant throughout the year, yet the concentrations of pollutants in the air vary from day to day and even hour to hour. This variability is due to complex interactions of weather, climate, and topography. These factors affect the ability of the atmosphere to disperse pollutants. Conditions that move and mix the atmosphere help disperse pollutants, while conditions that cause the atmosphere to stagnate allow pollutants to concentrate. Local climatological effects, including topography, wind speed and direction, temperature, inversion layers, precipitation, and fog can exacerbate the air quality problem in the SJVAB.

The SJVAB is approximately 250 miles long and averages 35 miles wide, and is the second largest air basin in the state. The SJVAB is defined by the Sierra Nevada in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The Valley is basically flat with a slight downward gradient to the northwest. The Valley opens to the sea at the Carquinez Straits where

the San Joaquin-Sacramento Delta empties into San Francisco Bay. The Valley, thus, could be considered a "bowl" open only to the north.

During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the Valley and flows in a south-southeasterly direction through the Valley, through Tehachapi pass, into the Southeast Desert Air Basin. In addition, the Altamont Pass also serves as a funnel for pollutant transport from the San Francisco Bay Area Air Basin into the region.

During the winter, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. Also, during the winter months, the Valley generally experiences light, variable winds (less than 10 mph). Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high carbon monoxide (CO) and particulate matter (PM10 and PM2.5) concentrations. The SJVAB has an "Inland Mediterranean" climate averaging over 260 sunny days per year. The Valley floor is characterized by warm, dry summers and cooler winters. For the entire Valley, high daily temperature readings in summer average 95ºF. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45ºF.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Solar energy heats up the Earth's surface, which in turn radiates heat and warms the lower atmosphere. Therefore, as altitude increases, the air temperature usually decreases due to increasing distance from the source of heat. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface or at any height above the ground, and tend to act as a lid on the Valley, holding in the pollutants that are generated here.

RESPONSES TO CHECKLIST QUESTIONS

Thresholds (a,b,c) -- Would the project exceed regional or local air quality emissions standards, or result in significant construction-related air quality impacts?

As described above, the proposed Project lies within the central portion of the SJVAB and the SJVAPCD has jurisdiction over most air quality matters in the Basin and is tasked with implementing programs and regulations required by the Federal and State Clean Air Acts. If a project is found to interfere with the region's ability to comply with Federal and State air quality standards, local governments then need to consider project modifications or provide mitigation measures to eliminate the inconsistency of the project plans. In order for a project to be considered "consistent" with the latest Air Quality Plan (AQP), the project must be consistent with the goals, objectives, and assumptions in the respective plan to achieve Federal and State air quality standards. Additionally, both construction related and long-term emissions are required to be quantified and compared to the SJVAPCD significance thresholds.

The previously certified NESIP EIR included a project air quality impact assessment to determine the regional air quality impacts from buildout conditions of the entire NEISP area, including the proposed Project site. The short-term construction emissions from development of the total Plan Area were estimated using construction and buildout assumptions for each land use (i.e., Light Industrial and General Commercial) and methodology established in the South Coast Air Quality Management District's CEQA Handbook, at the suggestion of the SJVUAPCD, while the long-term mobile source emission from operation of the NEISP at future buildout were calculated using the future year peak hour traffic volumes and trip assignments from the Transportation Analysis prepared by Fehr & Peers for the NEISP EIR. The NEISP EIR identified a number of impacts on air quality that would result from the construction and operation of NEISP at full buildout. Specifically, the NEISP EIR concluded that operation of the NEISP area (including mobile source emissions) would result in significant and unavailable cumulative impacts as a result of ROG, NOx and CO hotspot emissions above applicable thresholds (NEISP EIR, pp. 4.67 through 4.70.) The NEISP EIR also identified potentially significant impacts from PM10 emissions during construction (Id., pp. 4.70, 4.71.). Accordingly, the EIR imposed the following mitigation measures:

> ***Mitigation Measure AIR-1****: All active portions of construction sites, earthen access roads, and material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work is done for the day. Where feasible, reclaimed water shall be used [This is Mitigation Measure 36.1 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure AIR-2:*** *All clearing, grading, earth moving, or excavation activities shall cease during periods of winds greater than 20 miles per hour average over one hour [This is Mitigation Measure 36.2 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure AIR-3:*** *All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust [This is Mitigation Measure 36.3 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure AIR-4:*** *The area disturbed by clearing, earth moving, or excavation activities shall be minimized at all times. This can be accomplished by mowing instead of disking for weed control and seeding and watering inactive portions of the construction site until grass growth is evident [This is Mitigation Measure 36.4 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure AIR-5:*** *Construction site vehicle speeds shall be limited to 15 miles per hour [This is Mitigation Measure 36.5 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure AIR-6****: If used, petroleum-based dust palliatives shall meet the road oil requirements of the San Joaquin Valley Unified Air Pollution Control District's rule regarding Cutback Asphalt Paving Materials [This is Mitigation Measure 36.6 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR 7: *Streets adjacent to the Project site shall be swept as needed to remove silt which may have accumulated from construction activities [This is Mitigation Measure 36.7 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR 8: *All internal combustion engine driven equipment shall be properly maintained and well tuned according to the manufacturer's specifications [This is Mitigation Measure 36.8 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-9: *During the smog season (May through October), the construction period shall be lengthened to minimize the number of vehicles and equipment operating at the same time [This is Mitigation Measure 36.9 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-10: *When available, diesel powered or electric equipment shall be utilized in lieu of gasoline powered engines [This is Mitigation Measure 36.10 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-11: *Construction activities shall minimize obstruction of through traffic lanes adjacent to the site and a flag person shall be retained to maintain safety adjacent to existing roadways [This is Mitigation Measure 36.11 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-11: *The use of energy efficient street lighting and parking lot lighting shall be considered throughout the TPA to reduce emissions at the power plant [This is Mitigation Measure 37.1 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-12: *Low polluting and high efficiency appliances shall be encouraged for development plans wherever possible [This is Mitigation Measure 37.2 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-13: *Landscaping shall include water efficient plant species and irrigation to reduce water consumption and provide passive solar benefits [This is Mitigation Measure 37.3 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-14: *Design guidelines for Project developments shall consider innovative solutions to encourage transit ridership and other alternative transportation modes [This is Mitigation Measure 37.4 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-15: *Ingress and egress points in new development shall be designed to minimize idling vehicle emissions [This is Mitigation Measure 37.5 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-16: *Use of alternative fuel vehicles shall be encouraged in vehicle fleets and new facilities shall be designed to set aside space for refueling or electrical recharging of vehicles [This is Mitigation Measure 37.6 of the UMP EIR in the NEISP EIR].*

Mitigation Measure AIR-17: *In accordance with Goal 4 of the Air Quality Element, Tracy should coordinate with San Joaquin County and the San Joaquin Valley Unified Air Pollution Control District to implement consistent policies. The following policies from the Draft EIR on the San Joaquin County Comprehensive Planning Program (December 1991) should be implemented in Tracy as part of a citywide air quality mitigation plan that includes monitoring and enforcement provisions [This is Mitigation Measure 39.2 of the UMP EIR in the NEISP EIR].*

The City should promote the use of signal synchronization, one way streets, computerized traffic controls, removal of unnecessary signals, and other engineering techniques to decrease idling time and maximize the speed of traffic on congested surface streets.

Mitigation Measure AIR-18: *Implementation of planned street and highway, transit, and bikeway improvements (as may be specified in the Transportation Impact Assessment) adjacent to the Project site necessary to relieve congestion and reduce idling [This is Mitigation Measure 4.8-1 in the NEISP EIR].*

Mitigation Measure AIR-19: *Use of HVAC equipment with a SEER of 12 or greater [This is Mitigation Measure 4.8-2 in the NEISP EIR].*

Mitigation Measure AIR-20: *Prior to approval of the Final Map, the applicant shall coordinate with the SJVUAPCD and demonstrate to the City the incorporation of UMP EIR air quality mitigation measures and others that may be applicable into the design of the Project [This is Mitigation Measure 4.8-3 in the NEISP EIR].*

Mitigation Measure AIR-21: *Prior to approval of the Final Map, the applicant shall coordinate with the SJVUAPCD and demonstrate to the City the incorporation of UMP EIR methods and others to be applicable to reduce dust emissions during construction [This is Mitigation Measure 4.8-4 in the NEISP EIR].*

While all other impacts on air quality could be reduced to a less than significant level, the NEISP EIR concluded that impacts relating to ROG, NOx and CO operational emissions, including mobile, would remain significant and unavoidable (NEISP EIR, p. 4.75.).

The proposed Project would result in the development of a portion of the NEISP (and all entirely within the NEISP area), involves the same types of industrial uses permitted by the NEISP, and is within the FAR that the NEISP EIR assumed would be developed on the Project site. While the proposed Project would not include any uses or activities that are known to generate excessive volumes of stationary air quality emissions, the proposed Project could potentially generate excessive mobile source emissions associated with the volume of traffic to and from the site during operation. However, as discussed in the transportation and circulation section, the traffic that will be generated by the buildout of the entire NEISP area, including the Project site with the proposed Project, will result in much less traffic than assumed in the NEISP EIR, resulting in reduced air quality emissions from mobile sources when compared to the development program anticipated in the previously certified NEISP EIR. As a result, the emissions and other air quality

impacts that would result from the construction and operation of the proposed Project on the site is well within the levels of air quality emissions that the NEISP EIR assumed would be generated by the development of the Project site with industrial uses.

Additionally, since the certification of the NEISP EIR in 1996, applicable regulatory requirements protecting human health, including standards for truck emissions, have become significantly more strict over the past 25 years (e.g., 2010 truck restrictions take effect in 2023 thereby greatly reducing the operational emissions of truck fleets), which also reduces emissions when compared to the emissions that the NEISP EIR assumed would result from buildout of the NEISP area under then-existing regulations, even if the proposed Project was to generate the exact same amount of traffic as originally assumed in the NEISP EIR. Further, the SJVAPCD has implemented more stringent air quality regulation since the certification of the NEISP EIR in 1996, which the proposed Project would be required to comply with further reducing operational air quality emissions. For example, the proposed Project is subject to the SJVAPCD Rule 9510 (Indirect Source Rule, or ISR), which could result in substantial reduction of emissions beyond what is reflected in the NEISP EIR modeling outputs. District Rule 9510 requires developers of residential, commercial, and industrial projects to reduce smog-forming (NO_X) and particulate (PM_{10} and $PM_{2.5}$) emissions generated by their projects. The Rule applies to projects which, upon full build-out, will include 2,000 sf of commercial space or more. Project developers are required to reduce:

- 20 percent of construction-exhaust nitrogen oxides;
- 45 percent of construction-exhaust PM_{10};
- 33 percent of operational nitrogen oxides over 10 years; and
- 50 percent of operational PM_{10} over 10 years.

Developers are encouraged to meet these reduction requirements through the implementation of on-site mitigation; however, if the on-site mitigation does not achieve the required baseline emission reductions, the developer must pay an off-site fee to the District. Such fees help reduce overall regional emissions by helping to fund clean-air projects in the District. For the reasons set forth above, the proposed Project's air quality impacts, which would be subject to the same mitigation measures as the previously certified NEISP EIR, as applicable, and new local, State, and Federal regulations, would not result in any new or increased significant impacts relating air quality that were not already analyzed in, and fully covered by, the previously certified EIR.

Threshold (d) -- Would the project result in the creation of objectionable odors?

SJVAPCD has identified a list of common types of facilities that have been known to produce odors in the SJVAB along with a reasonable distance from the source within which, the degree of odors could be significant. These land uses include the following: wastewater treatment facilities, sanitary landfills, transfer stations, composting facilities, petroleum refinery, asphalt batch plant, chemical manufacturing, fiberglass manufacturing, painting/coating operations, food processing facilities, feed lot/dairies and rendering plants. The proposed Project would include the

development of a multi-story industrial warehouse and office and does not propose to include any odor inducing uses on the site. Because the proposed Project is for industrial uses consistent with the NEISP, the proposed Project's impact relative creation of objectionable odors would be similar to those identified in the NEISP EIR.

The previously certified NEISP EIR found that development of the specific plan area would not result in the generation of objectional odors because the Environmental Performance Standards within the NEISP restricts the uses that "emit dust, sweepings, dirt, cinders, fumes, odors, radiation, gases and vapors, or discharges of liquid or solid waste or other harmful matter into the atmosphere or any body of water." Impacts relative to this topic in the previously certified NEISP EIR were found to be less than significant from buildout of the specific plan; therefore, impacts would remain less than significant for the proposed Project. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

A project that has a significant impact on air quality with regard to emissions of CO, NO_X and/or ROGs as determined above would have a significant cumulative effect. In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed, or reasonably foreseeable future projects are in excess of screening levels identified above, and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions. With regard to past and present projects, the background ambient air quality, as measured at the monitoring stations maintained and operated by the SJVAPCD, measures the concentrations of pollutants from existing sources. Past and present project impacts are therefore included in the background ambient air quality data.

The proposed Project would contribute to cumulative impacts from construction and operational emissions since regional thresholds are exceeded for build-out of the NEISP. The potential for cumulative impacts caused by the proposed Project are consistent with impacts identified in the NEISP EIR. The proposed Project would not cause a new impact to occur that was not previously disclosed. Mitigation previously discussed in this section would be implemented by the proposed Project that would reduce the severity of significant and unavoidable cumulative effects. No further evaluation is required.

IX. NOISE -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Result in project-generated vehicular noise levels incompatible with the nearby existing land uses?					*X*
b) Result in project-generated industrial and commercial noise levels incompatible with the nearby existing land uses?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a, b) -- Would the project result in project-generated vehicular noise levels or industrial and commercial noise levels incompatible with the nearby existing land uses?

The proposed Project would generate vehicular noise from employee automobile trips and stationary operational noise associated with the industrial operations. The Project site is a vacant, 86-acre area located within the NEISP, which was created to facilitate the buildout of high-quality industrial and commercial area located in the northeast area of Tracy. Since adoption of the NEISP, the NEISP Area has been built out with commercial, industrial, and business park industrial uses. The proposed project would include the development of a multi-story warehouse facility, parking lot, and necessary transportation and utility infrastructure. The proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to noise would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR assumed that buildout of the specific plan would result in the development 45.5 net acres of commercial development and 799 net acres of industrial development, which would have generated 9,142 new jobs (NEISP EIR, p. 4.52.). The NEISP EIR identified potential significant impacts related to noise, including impacts on the NEISP itself from nearby freeway noise, noise generated by the operation of the NEISP's industrial uses, and noise from traffic generated by the operation of the built out NEISP. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure NOI-1:*** *Since the noise sensitivity of the industrial use is presently unknown, the City, with the help of an acoustical consultant, could evaluate the acceptability of the noise environment once the type of use is specified. If it is determined that a DNL of 75 dB should be met, then a 1 2-foot sound wall should be constructed along the northern property line. If this is not feasible, then a building facade setback of 464 feet from the I-205 roadway centerline could be considered as shown in Table 21 [This is Mitigation Measure 4.9-1 in the NEISP EIR].*

Although sound-rated windows will not improve the exterior noise environment, sound-rated windows may be recommended to improve the interior work environment for facilities located along the freeway corridor.

Mitigation Measure NOI-2: *Since the noise sensitivity of the commercial uses are presently unknown, the City, with the assistance of an acoustical consultant, could evaluate the acceptability of the noise environments when the exact uses are specified. If it is determined that a DNL of 70 dB should be met, then the minimum noise barrier heights listed in the last column of Table 20 should be considered. If this is not feasible, setback may be provided to meet the noise requirements as described in Table 21 [This is Mitigation Measure 4.9-2 in the NEISP EIR].*

Mitigation Measure NOI-3: *The applicant shall construct a six-foot noise barrier along the roadways to reduce future noise levels at existing residential properties to an acceptable level [This is Mitigation Measure 4.9-3 in the NEISP EIR].*

Mitigation Measure NOI-4: *Since the type of industrial use is currently unknown, the City with the help of an acoustical consultant shall evaluate the potential impact on existing homes when the industrial uses are determined. The City shall direct this study with funding provided by the applicant. Appropriate mitigation measures will be implemented which could include either noise barriers, noise control for fixed equipment, limited hours of operations or deliveries, distance setbacks, building orientation or access locations depending upon the type and location of the source [This is Mitigation Measure 4.9-4 in the NEISP EIR].*

The NEISP EIR concludes that after mitigation, noise impacts would be less than significant, except that impacts from roadway/freeway noise levels on the future users within the NEISP would be significant and unavoidable, particularly with respect to the commercial area of the NEISP, which does not include the Project site (NEISP EIR, pp. 4.80 through 4.85.). The NEISP EIR notes that the UMP EIR recognized that future development and buildout of the Project site, along with all the other areas analyzed therein, would result in cumulative and unavoidable impacts on noise, and the City adopted a Statement of Overriding Considerations (#93-226), which is incorporated herein by reference.

The proposed Project involves the same type of industrial uses permitted by the NEISP, and is within the FAR that the NEISP EIR assumed would be developed on the Site, meaning that noise that will be generated by both the operation of the proposed Project, and traffic generated by the proposed Project, is consistent with the noise levels that the NEISP EIR assumed would be developed on the Project site. Specifically, the proposed Project would generate 3,573 daily trips, 593 AM peak hour trips (560 in / 33 out), and 995 PM peak hour trips (494 in / 501 out) for both passenger cars and truck trips, which is consistent with the previously certified NEISP EIR, as discussed in *Section VII Transportation and Circulation*. Further, because buildout of the entire NEISP area will result in significantly less total square footage than assumed in the NEISP EIR, overall noise impacts would be reduced when compared to the previously certified NEISP EIR.

Additionally, the proposed Project would be required to implement the same mitigation measures imposed on the NEISP EIR, as applicable, in addition to being subject to more strict regulatory requirements than existed when the NEISP EIR was certified in 1996. Finally, the proposed Project would not expose its users to excessive roadway/freeway noise, and therefore the significant and unavoidable noise impacts identified by the NEISP EIR – which was specific to future commercial uses – would not apply to the proposed Project. Instead, all of the proposed Project's impacts potential impacts relating to noise would be less than significant. Accordingly, the proposed Project would not result in any new or increased significant impacts relating to noise that were not already analyzed in, and fully covered by, the previously certified NEISP EIR.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to noise across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, the project-generated vehicular noise levels and industrial noise levels that would be generated by the operation of the proposed Project is consistent with the level the NEISP EIR assumed would be generated from eventual development of the Project site with industrial uses pursuant to the NEISP. Therefore, as long as the proposed Project complies with the Specific Plan guidelines, no cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

X. AESTHETICS -- WOULD THE PROJECT:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Result in the significant production of new light and glare?					*X*
b) Result in the significant obstruction of any scenic vista or view open to the public, or the creation of any aesthetically offensive site?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) -- Would the project result in the significant production of new light and glare?

There are no existing sources of light or glare located on the Project site. The Project site is a vacant, 86-acre area located within the NEISP, which was created to facilitate the buildout of high-quality industrial and commercial area located in the northeast area of Tracy. Since adoption of the NEISP, the NEISP Area has been built out with commercial, industrial, and business park industrial uses. The proposed project would include the development of a multi-story warehouse facility, parking lot, and necessary transportation and utility infrastructure. The proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to light and glare would be similar to that identified in the previously certified NEISP EIR.

The NEISP EIR explained that the development of the specific plan would result in new sources of light and glare, as the NEISP area was largely agricultural, but such impacts were consistent with the UMP and UMP EIR, as the entire NEISP area generally, and the Project site specifically, have long been designated for redevelopment with industrial uses (NEISP EIR, p. 4.89.). As a result, the previously certified NEISP EIR concluded that the impacts would be less than significant. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Threshold (b) -- Would the project result in the significant obstruction of any scenic vista or view open to the public, or the creation of any aesthetically offensive site?

There are no scenic vistas located on or adjacent to the Project site. The proposed Project uses are consistent and compatible with the surrounding land use designations. Lands surrounding the Project site consist of industrial, agricultural, and agricultural residential uses.

Implementation of the proposed Project would provide for additional industrial development on a site that is bordered by similar industrial development to the north, east, west, and south. The Project site is not topographically elevated from the surrounding lands and is not highly visible from areas beyond the immediate vicinity of the site. There are no prominent features on the site, such as trees, rock outcroppings, or other visually distinctive features that contribute to the scenic quality of the site. The project site is not designated as a scenic vista by the City of Tracy General Plan.

As described above, the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP. However, the Project would be 98-feet, 8-inches at the tallest point, which is inconsistent with the maximum building height allowed for uses within the NEISP. As such, the proposed Project requests an amendment to the NEISP to revise the maximum height from 60 feet to 125 feet for buildings located at the Project site. While the overall height of the building may be eye-catching from a number of vantage points in the NEISP and surrounding areas, it would not obstruct any scenic vistas or public views open to the public. Views of the Project site from the nearest freeways (i.e., Interstate-250, Interstate-5, and State Route-205) are currently limited due to the existing, large-scale industrial developments shielding the site. Multiple large-scale industrial warehouses neighboring the Project site to the north, west, east, and south are already obstructing views open to the public. The previously certified NEISP EIR noted that, consistent with the analysis of the UMP and UMP EIR, buildout of the NEISP Area would cumulatively and unavoidably change the visual character of Tracy and reduce the open views of the surrounding area due to the conversion of open farmland to urban industrial developments. Though the proposed Project would be noticeably taller than the neighboring developments, the impact relative to the obstruction of views or creation of an aesthetically offensive site would be similar to that identified in the previously certified NEISP EIR. The NEISP EIR concluded that compliance with the Specific Plan's design guidelines would minimize any aesthetic impact, including any impacts on views open to the public, and ensure such impacts are less than significant. (Id., pp. 4.89 through 4.90.)

The proposed Project would develop the Project site with an industrial use, as was assumed and analyzed in the NEISP EIR. While, with the proposed amendment to the NEISP, the proposed Project would be significantly taller than what was assumed under the previously certified NEISP EIR, it will still be required to comply with all of the Specific Plan's design guidelines, which as stated in the NEISP EIR, will minimize aesthetic impacts and ensure that such impacts will be less than significant. As shown in Attachment B, the applicant is proposing to shield large portions of the building with tall, vibrant landscaping consistent with the NEISP and Tracy General Plan. Additionally, the increased height would not materially change the nature of the Project site as compared to the NEISP – it is not within a scenic vista or other protected view area, and instead is located in a low-lying area surrounded by mostly industrial development, and the remainder of the agricultural uses in the area are all slated for redevelopment with industrial uses in the future, pursuant to the UMP and NEISP (*See,* NEISP EIR, pp. 4.86 through 4.90). Further, the buildout of the NEISP will result in the development of millions less square footage than originally assumed in the NEISP EIR, thereby further reducing aesthetic impacts. Accordingly, the proposed Project would not result in any new or increased significant impacts on aesthetics that were not

already analyzed in, and fully covered by, the previously certified NEISP EIR; therefore, additional environmental review is not required.

Cumulative Impacts

The potential aesthetic impacts related to views, aesthetics, and light and glare are site specific. Development of the NEISP Area, including the project site, has been envisioned by the General Plan EIR, and, as described in the previously certified NEISP EIR, no new impact, nor the severity of an impact previously disclosed would occur from buildout of the NEISP area. Therefore, the NEISP EIR found the future development and buildout of the NEISP area, along with all the Project site, would result in less than cumulatively considerable impacts on aesthetics. As discussed above, the proposed Project would also cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP. Thus, while the proposed Project would change the appearance of the site and surrounding area, so long as the proposed Project abides by the Specific Plan guidelines, no new cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

XI. PUBLIC SERVICES AND FACILITIES - Would the project:

	Potentially Significant Impact	***Less Than Significant with Mitigation Incorporation***	***Less Than Significant Impact***	***No Impact***	***Reviewed Under Previous Document***
a) Require a significant need for new, expanded or altered governmental facilities?					*X*
b) Result in the significant need for new systems, or substantial alterations to public facilities?					*X*
c) Require the extension of facilities with the capacity to serve new development?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Thresholds (a, b, c) -- Would the project require a significant need for new, expanded or altered governmental facilities, result in the significant need for new systems, or substantial alterations to public facilities, or require the extension of facilities with the capacity to serve new development?

The Project site is a vacant, 86-acre site located within the NEISP, which was created to facilitate the buildout of high-quality industrial and commercial area located in the northeast area of Tracy. Since adoption of the NEISP, the NEISP Area has been built out with commercial, industrial, and business park industrial uses. The proposed project would include the development of a multi-story warehouse facility, parking lot, and necessary transportation and utility infrastructure. The proposed Project involves the same type of industrial uses permitted by the NEISP, and is within the FAR that the NEISP EIR assumed would be developed on the Project site, meaning that need for public services that would be generated by the operation of the proposed Project is consistent with the level of need that the NEISP EIR assumed would be generated from eventual development of the Project site with industrial uses pursuant to the NEISP. Therefore, the impacts relative to public services and facilities discussed below would be similar to that identified in the previously certified NEISP EIR.

Fire Impacts

The NEISP proposed to develop 799 net acres of general commercial and light industrial uses in an area, which at the time was, just east of the City limits and south of I-205. Impacts in the previously certified NEISP EIR relative to fire protection were found to be potentially significant, which would be reduced through implementation of UMP goals, policies, and actions, as well as by imposing the following mitigation measure:

> ***Mitigation Measure PUB-1:*** *Individual development applications within the UMP area shall be reviewed by the City of Tracy for adequate fire prevention measures including: street widths, water supply, and public access [This is Mitigation Measure M 70.1 of the UMP EIR in the NEISP EIR].*

Following the implementation of the above mitigation measure, the previously certified NEISP EIR concluded that impacts to fire protection would be less than significant (NEISP EIR, pp. 4.101 through 4.108). Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts would remain less than significant with the above mitigation measure incorporated. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed

Police Impacts

As discussed above in the analysis of fire protection impacts, the NEISP proposed the addition of 799 net acres of general commercial and light industrial development. Although the UMP EIR does not consider this additional development to be a significant cumulative impact on the provision of police services and facilities, the previously certified NEISP EIR found that individual development project proposed under the NEISP may individually impact police staff, equipment, and facilities. Therefore, this impact was found to be potentially significant in the NEISP EIR; however, by implementing the goals, policies, and actions within the UMP (General Plan), the NEISP EIR found the impact would be less than significant.

The proposed Project will be required to be consistent with the General Plan, which ensures the City maintains adequate police staffing, performance levels and facilities to serve Tracy's existing population as well as any future growth (Goal PF-2, policy P.1). Impact fees from new developments are collected based upon projected impacts from each development by the City as COAs prior to project approval. The adequacy of impact fees is reviewed on an annual basis to ensure that the fee is commensurate with the service. Payment of the applicable impact fees by the project applicant, and ongoing revenues that would come from property taxes, and other revenues generated by the project, would fund capital and labor costs associated with police services. Accordingly, the proposed Project would not result in any new or increased significant impacts relating to police impacts that were not already analyzed in, and fully covered, by the previously certified NEISP EIR.

School Impacts

The previously certified NEISP EIR concluded that impacts relative to school facilities and staffing would be less than significant because the project proposes only commercial and industrial development and no residential dwelling units. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. Additionally, since adoption of the NEISP EIR in 1996, State regulations (i.e., SB 50) have gone into effect requiring new developments to pay impact fees to local school districts to fund improvements associated with school services ensuring impacts to school services are less than significant. Therefore, compliance with current local and State regulations would further reduce

impacts to schools. Accordingly, the proposed Project would not result in any new or increased significant impacts relating to police impacts that were not already analyzed in, and fully covered, by the previously certified NEISP EIR.

Park Impacts

At the time of the NEISP EIR adoption, the UMP EIR and City park ordinance required that new development set aside four acres of parkland per 1,000 people. The previously certified NEISP EIR concluded that impacts relative to park facilities would be less than significant because the NEISP did not propose residential development, and therefore, was not required to provide park acreage. The proposed Project would also not include any residential uses, and would not increase the use of existing parks. However, the City of Tracy requires the payment of the project's fair share in-lieu parks fees, as required by the City's General Plan. The collection of fees and determined fair share fee amounts are adopted by the City as COAs for all new development projects prior to project approval. Fees paid aid in the development of new park-space and maintenance as required, to ensure continued high-quality park facilities for all City residents. As such, payment of in-lieu park fees would reduce park impacts further than what was concluded in the NEISP EIR. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. The proposed Project be required to would not result in any new or increased significant impacts relating to parks that were not already analyzed in, and fully covered by, the previously certified EIR.

Gas and Electrical Service Impacts

Impacts relative to gas and electrical service were found to be potentially significant in the previously certified NEISP EIR due to increased energy uses associated with buildout and operation of the specific plan. Accordingly, the NEI EIR imposed the following mitigation measures:

> ***Mitigation Measure PUB-2:*** *Applicants for future development Projects shall practice energy efficient building design by including such features as: orientation of structures to summer and winter sunlight to absorb winter solar heat and reflect or avoid summer solar heat, thermal insulation of the wall and attic which meets or exceeds local standards, weather stripping of windows and doors to decreases heat loss, solar assisted domestic hot water and pool heating, tinted or solar reflective double glazing, overhangs on southern elevations , and vegetation on western elevations to provide shading from summer sun [This is Mitigation Measure M 28.4 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure PUB-3:*** *The use of energy efficient street lighting and parking lot lighting shall be considered throughout the TPA to reduce emissions at the power plant [This is Mitigation Measure M 37.1 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure PUB-4:*** *Low polluting and high efficiency appliances shall be encouraged for development plans whenever possible [This is Mitigation Measure M 37.2 of the UMP EIR in the NEISP EIR].*

Mitigation Measure PUB-5: *As a condition of approval, development applicants shall meet with PG&E to determine optimum energy conservation measures which are still economically feasible that can be implemented with the project [This is Mitigation Measure M 69.1 of the UMP EIR in the NEISP EIR].*

Mitigation Measure PUB-6: *The City of Tracy should work cooperatively in the near-term with PG&E to identify areas suitable for electric and gas facilities needed to accommodate the growth proposed in the UMP [This is Mitigation Measure M 69.2 of the UMP EIR in the NEISP EIR].*

Mitigation Measure PUB-7: *The project applicant shall implement the measures provided within the UMP and UMP EIR to the City's satisfaction prior to the first Site Plan, Parcel Map and or Tentative Map approval [This is Mitigation Measure M 4.11-1 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that the impacts on gas and electrical services would be less than significant (NEISP EIR, pp. 4.101 through 4.108.) Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts would remain less than significant with the above mitigation measure incorporated.

Further, the Project would be subject to significantly more strict regulations regarding energy usage than existed when the NEISP project was approved and the EIR was certified in 1996. For example, the Project design and materials would be required to comply with the 2019 Building Energy Efficiency Standards, which took effect on January 1, 2020. The Project would also be required to adhere to the provisions of CALGreen, which establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, internal air contaminants, and appliance efficiency regulations.

Accordingly, the proposed Project would not result in any new or increased significant impacts on gas or electrical service that were not already analyzed in, and fully covered by, the previously certified EIR. Instead, given the changes in regulations over the last 25 years, the proposed Project would likely reduce impacts. Therefore, additional environmental review is not required.

<u>*Municipal Water Impacts*</u>

Impacts relative to municipal water service were found to be potentially significant in the previously certified NEISP EIR due to available water supplies in the City not being adequate to accommodate the growth demands from buildout of the NEISP. Accordingly, the NEI EIR imposed the following mitigation measures:

***Mitigation Measure PUB-8**: The City shall require maximum use of water conservation measures such as low flow shower-heads, drought tolerant landscaping, and minimal flush toilets in all new development [This is Mitigation Measure M 60.1 of the UMP EIR in the NEISP EIR].*

***Mitigation Measure PUB-9**: The City shall review all development on a Project by Project basis to ensure that water facilities are adequate to meet Project water service demands [This is Mitigation Measure M 60.3 of the UMP EIR in the NEISP EIR].*

***Mitigation Measure PUB-10:** Prior to the approval of the first Site Plan, Parcel and or Tentative Map for the Northeast Industrial project area, the applicant(s) will be required to demonstrate compliance with the approved Water Master Plan or to provide an alternative plan to provide facilities acceptable to the City. Prior to the approval of each Site Plan, Parcel and Tentative Map, the City shall review the Project application to ensure that existing and/or proposed facilities are adequate to meet project service demands, and are consistent with the City's Master Plan or an alternative acceptable to the City. In order to provide adequate facilities to serve individual developments within the Project area, each applicant shall participate in any applicable City-wide or area program, or establish the appropriate funding toward these facilities prior to the recordation of the corresponding Final Map [This is Mitigation Measure 4.11-2 in the NEISP EIR].*

***Mitigation Measure PUB-11:** In order to provide adequate water supplies to the Project, the Project applicants shall participate in any applicable City-wide program to secure the necessary water rights [This is Mitigation Measure 4.11-3 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to municipal water service. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated.

Additionally, a Hydraulic Evaluation was prepared by West Yost Associates (dated August 12, 2020) to analyze the ability of Tracy's existing potable water distribution system to meet the required minimum pressures and flows for the proposed Project (see Attachment C for the complete study). The proposed Project would use approximately 174.3 acre feet per year of potable water. According to the Hydraulic Evaluation, the City's water system can provide adequate flows and pressure, and the City otherwise has capacity to serve the Project's water demands.

Accordingly, the proposed Project would not result in any new or increased significant impacts relating to municipal water service that were not already analyzed in, and fully covered by, the previously certified EIR. Therefore, additional environmental review is not required.

Wastewater Impacts

Impacts relative to wastewater were found to be potentially significant in the previously certified NEISP EIR due to a lack of detailed information regarding potential impacts to City's wastewater facilities and the possible need for additional services. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure PUB-12****: Prior to the approval of the first Site Plan, Parcel and or Tentative Map for the Northeast Industrial project area, the applicant(s) will be required to demonstrate compliance with the approved Wastewater Master Plan or to provide an alternative plan to provide facilities acceptable to the City. Prior to the approval of each Site Plan, Parcel and Tentative Map, the City shall review the Project application to ensure that existing and/or proposed facilities are adequate to meet project service demands, and are consistent with the City's Master Plan or an alternative acceptable to the City. In order to provide adequate facilities to serve individual developments within the Project area, each applicant shall participate in any applicable City-wide or area program, or establish the appropriate funding toward these facilities prior to the recordation of the corresponding Final Map [This is Mitigation Measure 4.11-4 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to wastewater service. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated.

Additionally, a Sewer Collection System Hydraulic Capacity Analysis was prepared by Black Water Consulting Engineers (dated October 15, 2020) to analyze the ability of Tracy's existing sewer collection system to adequately serve the development of the proposed Project (see Attachment D for the complete study). The proposed Project is part of the MacArthur Sewer System, which collects and conveys sewer flows by the existing sewer pipeline along West Pescadero Avenue and the existing MacArthur Pump Station to the Wastewater Treatment Plant (WWTP). The proposed Project is estimated to generate average dry weather flows (ADWF) of approximately 167,481 gallons per day (gpd) and peak wet weather flows (PWWF) of approximately 458,551 gpd. According to the Sewer Collection System Hydraulic Capacity Analysis, the City's MacArthur Sewer System has sufficient capacity to accommodate sewer flows generated by the Project for the current buildout conditions of the service area and no off-site improvements are necessary to serve the proposed Project.

Accordingly, the proposed Project's impact on wastewater would be less than significant following implementation of Mitigation Measure PUB-12, consistent with the effects of implementation of the NEISP. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional

environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Storm Drainage Impacts

Impacts relative to wastewater were found to be potentially significant in the previously certified NEISP EIR due to the conversion of rural land to general commercial and light industrial uses, resulting in a substantial increase in impervious surfaces. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure PUB-13:*** *Prior to the approval of the first Site Plan, Parcel and or Tentative Map for the Northeast Industrial project area, the applicant(s) will be required to demonstrate compliance with the approved Storm Drainage Master Plan or to provide an alternative plan to provide facilities acceptable to the City. Prior to the approval of each Site Plan, Parcel and Tentative Map, the City shall review the Project application to ensure that existing and/or proposed facilities are adequate to meet project service demands, and are consistent with the City's Master Plan or an alternative acceptable to the City. In order to provide adequate facilities to serve individual developments within the Project area, each applicant shall participate in any applicable City-wide or area program, or establish the appropriate funding toward these facilities prior to the recordation of the corresponding Final Map [This is Mitigation Measure 4.11-4 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to storm drainage facilities. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated.

Accordingly, the proposed Project's impact on storm drainage facilities would be less than significant following implementation of Mitigation Measure PUB-13, consistent with the effects of implementation of the NEISP EIR. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Solid Waste Impacts

Impacts relative to solid waste were found to be potentially significant in the previously certified NEISP EIR, as it related to long-term capacity of the Foothill Landfill. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure PUB-14:*** *Approval of the Project shall be conditioned on the ability of regional or City solid waste facilities to accommodate waste generated by the Project [This is Mitigation Measure 4.11-6 in the NEISP EIR].*

> ***Mitigation Measure PUB-15:*** *Prior to approval of the first Site Plan, Parcel and or Tentative Map, the Project shall incorporate and participate in the City-wide efforts for recycle and solid waste reduction pursuant to AB 93 9 [This is Mitigation Measure 4.11-7 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to solid waste facilities. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated.

Accordingly, the proposed Project's impact on solid waste facilities would be less than significant following implementation of Mitigation Measures PUB-14 and -15, consistent with the effects of implementation of the NEISP EIR. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Telephone Service Impacts

Impacts relative to telephone service were found to be potentially significant in the previously certified NEISP EIR. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure PUB-16:*** *Development of the Project shall be contingent upon the availability of the necessary communications services and infrastructure, and the ability of service providers to accommodate development of the site without service interruptions to existing customers. The Project applicant shall demonstrate to the City that they have coordinated with the affected providers for delivery of communications and telephone systems [This is Mitigation Measure 4.11-8 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to solid waste facilities. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated.

Accordingly, the proposed Project's impact on solid waste facilities would be less than significant following implementation of Mitigation Measure PUB-16, consistent with the effects of implementation of the NEISP EIR. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Library and Other Community Service Impacts

The previously certified NEISP EIR found that impacts to library and other community services would be less than significant since buildout of the NEISP area would not result in a large increase in population. No change to the disposition of impacts associated with the build-out of the NEISP would result from the proposed Project. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. The proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to public services across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, the need for public services that would be generated by the operation of the proposed Project is consistent with the level of need that the NEISP EIR assumed would be generated from eventual development of the Project site with industrial uses pursuant to the NEISP. Therefore, as long as the proposed Project abides by the Specific Plan guidelines, no additional cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

XII. SOCIOECONOMICS -- Would the project:

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*	*Reviewed Under Previous Document*
a) Significantly alter the location, distribution density, growth rate of the human population or displace a large number of people?					*X*
b) Significantly affect existing housing?					*X*

RESPONSES TO CHECKLIST QUESTIONS

Threshold (a) Would the project significantly alter the location, distribution density, growth rate of the human population or displace a large number of people?

There are no housing units located on the Project site, and the Project does not propose any housing. The Project site is a vacant, 86-acre site located within the NEISP, which was created to facilitate the buildout of high-quality industrial and commercial area located in the northeast area of Tracy. Since adoption of the NEISP, the NEISP Area has been built out with commercial, industrial, and business park industrial uses. The proposed project would include the development of a multi-story warehouse facility, parking lot, and necessary transportation and utility infrastructure.

The NEISP EIR concluded that buildout of the specific plan area would result in less than significant impact relative to this topic because the growth resulting from additional employment in the area has been long planned for, and included in the UMP and UMP EIR. Further, buildout of the NEISP area would not displace any existing people/residents, or result in any new residential development. The proposed Project involves the same type of industrial uses permitted by the NEISP, and is within the FAR that the NEISP EIR assumed would be developed on the Project site. The Project site does not contain any residential uses, and the approximately 1,900 jobs created by the proposed Project is consistent with the assumptions made in the previously certified NEISP EIR and UMP EIR about the generation of new jobs from the development of the Project site pursuant to the NEISP. Therefore, the proposed Project's impacts relative to this topic would also be less than significant.

Accordingly, the proposed Project would not result in any new or increased significant impacts relative to this topic that were not already analyzed in, and fully covered by, the previously certified NEI EIR. Impacts were considered less than significant for build-out of the NEISP; therefore, impacts would remain less than significant. This finding is supported by the previously certified EIR prepared for the NEISP. Additional environmental review is not required.

Threshold (b) Would the project significantly affect existing housing?

The proposed Project involves the development of a multi-story industrial warehouse in a highly urbanized area of Tracy built out with similar uses. Housing is not proposed. The proposed

Project is located on a site that is entirely within the original project area of the previously certified NEISP EIR, and the NEISP EIR specifically assumed that the proposed Project site would be fully developed with industrial uses. In other words, no land will be disturbed or otherwise be impacted by the proposed Project that the NEISP EIR did not already assume would occur as a result of buildout of the specific plan area. Additionally, the proposed Project is consistent with the land use designations, land use intensity, and building density identified in the NEISP; thus, the impact relative to existing housing would be similar to that identified in the previously certified NEISP EIR.

Impacts relative to this topic were found to be potentially significant in the previously certified NEISP EIR due to existing residential uses in the NEISP area experiencing a dramatic change from a rural to an industrial setting. Accordingly, the NEISP EIR imposed the following mitigation measures:

> ***Mitigation Measure SOC-1:*** *Tracy shall, either as a part of the development review process or as a separate ordinance, require new developments to provide tree shading or other landscape screening of light and glare producing structures or improvements with the exception of permitted signage. Development plans should be reviewed to ensure that trees shade 40 percent of parking areas, that nonreflective building materials are used for all non-signage related structures, and that landscaping screens residential and other sensitive uses from negative effects of glare producing uses such as streets and industrial and commercial areas. Commercial and Industrial projects shall also be reviewed to implement a five-foot perimeter landscaping area adjacent to property lines. [This is Mitigation Measure M 19.1 of the UMP EIR in the NEISP EIR].*
>
> ***Mitigation Measure SOC-2:*** *Prior to approval of Site Plans, Parcel and or Tentative Maps for industrial or commercial properties adjacent to existing residential development, the applicant shall prepare and submit to the Tracy Community Development Department for review and approval a detailed plan to adequately buffer existing residential homes from future industrial or commercial development. This plan shall detail the setback requirements, specific landscaping information (plant species, spacing), noise buffers (please see M 4.9-4), and lighting restrictions and identify the appropriate implementation schedule as acceptable to the City [This is Mitigation Measure 4.12-1 in the NEISP EIR].*

Following the implementation of the foregoing mitigation measures, the NEISP EIR concluded that buildout of the NEISP would result in less than significant impacts to existing housing. Because proposed Project's impact relative to this topic would be similar to those identified in the NEISP EIR, the Project will be required to impose the same mitigation measures set forth above, as applicable. Impacts were considered less than significant with mitigation incorporated for build-out of the NEISP; therefore, impacts for the proposed Project would remain less than significant with the above mitigation measure incorporated. No greater impacts and no change to the disposition of impacts on the build-out of the Project site would occur as a result of the proposed Project. Additional environmental review is not required since this impact was addressed and is consistent with the development density analyzed in the NEISP EIR.

Cumulative Impacts

Through implementation of mitigation measures, impacts related to socioeconomics across the NEISP area were considered less than cumulatively considerable in the previously certified NEISP EIR. As discussed above, the proposed Project would cause neither a new impact to occur, nor an increase in the severity of an impact previously disclosed. Proposed Project-related impacts are consistent with the environmental effects previously identified certified NEISP EIR. The proposed Project would also be consistent with the land use and development regulations contained in the NEISP EIR. Thus, while the proposed Project would change the rural appearance of the site and surrounding area to industrial, so long as the proposed Project abides by the Specific Plan guidelines, no new cumulatively considerable impacts related to the proposed Project would occur. This finding is supported by the previously certified EIR prepared for the NEISP because the proposed Project is consistent with the NEISP. Therefore, the proposed Project would not cause either a new impact to occur, nor an increase in the severity of an impact previously disclosed.

REFERENCES

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- Kimley-Horn and Associates. October 16, 2020. RE: Tracy NEI Phase 3 Traffic Analysis.
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- West Yost Associates. August 12, 2020. RE: Hydraulic Evaluation of Project Big Bird.

ATTACHMENT A

Kimley»Horn

MEMORANDUM

From: Frederik Venter, PE and Colin Ogilvie, Kimley-Horn and Associates

To: Robert Armijo, PE**,** City of Tracy

Date: October 16, 2020

Re: **Tracy NEI Phase 3 Traffic Analysis**

Executive Summary

This memorandum presents a traffic analysis for the proposed NEI Phase 3 project (the "Project"), which proposes to construct a 3,485,401 square-foot warehouse consisting of 1,355,618 square feet of occupied space and 2,129,784 square feet of non-occupied robotic area in the City of Tracy, CA. The project site is located south of Grant Line Road between Skylark Way and Chrisman Road. The project is accessible by following six (6) driveways, with two (2) driveways along Skylark Way, three (3) driveways along Grant Line Road, and one (1) driveway along Chrisman Road.

Based on an employee shift data provided by the project applicant, the project is anticipated to generate 3,573 daily trips, 593 AM peak hour trips (560 In / 33 Out), and 995 PM peak hour trips (494 In / 501 Out) for both passenger cars and truck trips.

The intersection level of service (LOS) was evaluated at sixteen study intersection (6 of which are project driveways) under Existing Conditions, Existing Plus Background Conditions (with and without project), and Cumulative Conditions (with and without project). Under baseline conditions all study intersections operate within acceptable LOS with the exception of the following:

- #3 – MacArthur Drive / Grant Line Road
  - Existing Plus Background Conditions – PM Peak Hour. This baseline deficiency is caused by cut-through traffic.
- #7 – Chrisman Road / Paradise Road
  - Existing Conditions – PM Peak Hour
  - Existing Plus Background Conditions – PM Peak Hour
- #8 – Chrisman Road / Eleventh Street
  - Cumulative Conditions – PM Peak Hour

With the addition of the Project, all study intersections operate within acceptable LOS with the exception of the following for **Existing Plus Background Plus Project** and **Cumulative Plus Project conditions**:

- #3 – MacArthur Drive / Grant Line Road
  - Existing Plus Background Conditions – AM and PM Peak Hours **(Deficiency)**
  - Cumulative Conditions – AM and PM Peak Hours **(Deficiency)**

- #5 – Skylark Way & Grant Line Road
    - Cumulative Conditions – PM Peak Hour **(Deficiency)**
- #6 – Chrisman Road & Grant Line Road
    - Cumulative Conditions – PM Peak Hour **(Deficiency)**
- #7 – Chrisman Road / Paradise Road
    - Existing Plus Background Conditions – PM Peak Hour (Not a Deficiency)
- #8 – Chrisman Road & Eleventh Street
    - Cumulative Conditions – AM and PM Peak Hours **(Deficiency)**

Under **Existing Plus Background Plus Project Conditions**, the following improvements are recommended to address the deficiencies at each intersection:

- #3 – MacArthur Drive / Grant Line Road – Construct a westbound right-turn lane with an overlap and optimize the cycle length. With the improvement, the intersection will operate at an acceptable LOS D in the AM peak hour and will operate at a LOS E, better than without project conditions, in the PM peak hour.

Under **Cumulative Plus Project Conditions**, the following improvements are recommended to address the deficiencies at each intersection:

- #3 – MacArthur Drive / Grant Line Road – Optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS C and LOS D in the AM and PM peak hour, respectively.
- #5 – Skylark Way & Grant Line Road – Optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS D in the PM peak hour.
- #6 – Chrisman Road & Grant Line Road – Optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS D in the PM peak hour.
- #8 – Chrisman Road & Eleventh Street – Additional second westbound left turn lane to be constructed and the signal timing be modified to allow lagging phase for the eastbound left turn and northbound left turn. With the improvement, the intersection will operate at an acceptable LOS D in the AM and PM peak hours.

This analysis also evaluated whether the Project trip addition to the overall NEI Specific Plan (SP) still falls with the NEI SP EIR assumptions for overall trip generation, especially since the trip generation for the project is high. The analysis determines that based on an assessment of the trip generation for the existing development, and vacant land that could still develop, and with the addition of the project, the overall trip generation would be less than was assumed in the NEI SP EIR.

1. Introduction

This memorandum presents a traffic analysis of the proposed Northeast Industrial Specific Plan area (NEI) Phase 3 development in the City of Tracy, CA and is located on the vacant lot bounded by Grant Line Road to the north, Paradise Road to the south, Skylark Way to the west, and Chrisman Road to the east. The proposed project ("Project") would develop a five-story warehouse for a total of 3,485,402 square feet, consisting of 1,355,618 square feet of occupied space and 2,129,784 square feet of non-occupied robotic area. **Figure 1** illustrates the location of the project site and study intersections in relation to the adjacent roadway network.

Figure 2 illustrates the project site plan, as provided by Kier+Wright. The site would be accessed by the following six (6) driveways, with two (2) driveways along Skylark Way, three (3) driveways along Grant Line Road, and one (1) driveway along Chrisman Road.

- Driveway #1 at Skylark Way – Full access
- Driveway #2 at Skylark Way – Full access
- Driveway #3 at Grant Line Road – Limited to a right-in and right out movement
- Driveway #4 at Grant Line Road – Full access
- Driveway #5 at Grant Line Road – Limited to a right-in and right out movement
- Driveway #6 at Chrisman Road – Limited to a right-in and right out movement

Driveway #1 is for truck and trailer access only while the remaining driveways are for passenger car access only. In the case of emergencies, trucks and trailers are able to enter and exit using Driveway #6 on Chrisman Road.

This traffic study was conducted to determine the potential intersection and queuing deficiencies related to the project based on standards and methodologies set forth by the City of Tracy ("City"). This memorandum discusses the methodology, analysis, and results of the study. It should be noted that recent changes under the California Environmental Quality Act (CEQA), vehicle miles traveled (VMT) is now recognized as the primary review for project impacts and no longer intersection level of service (LOS).

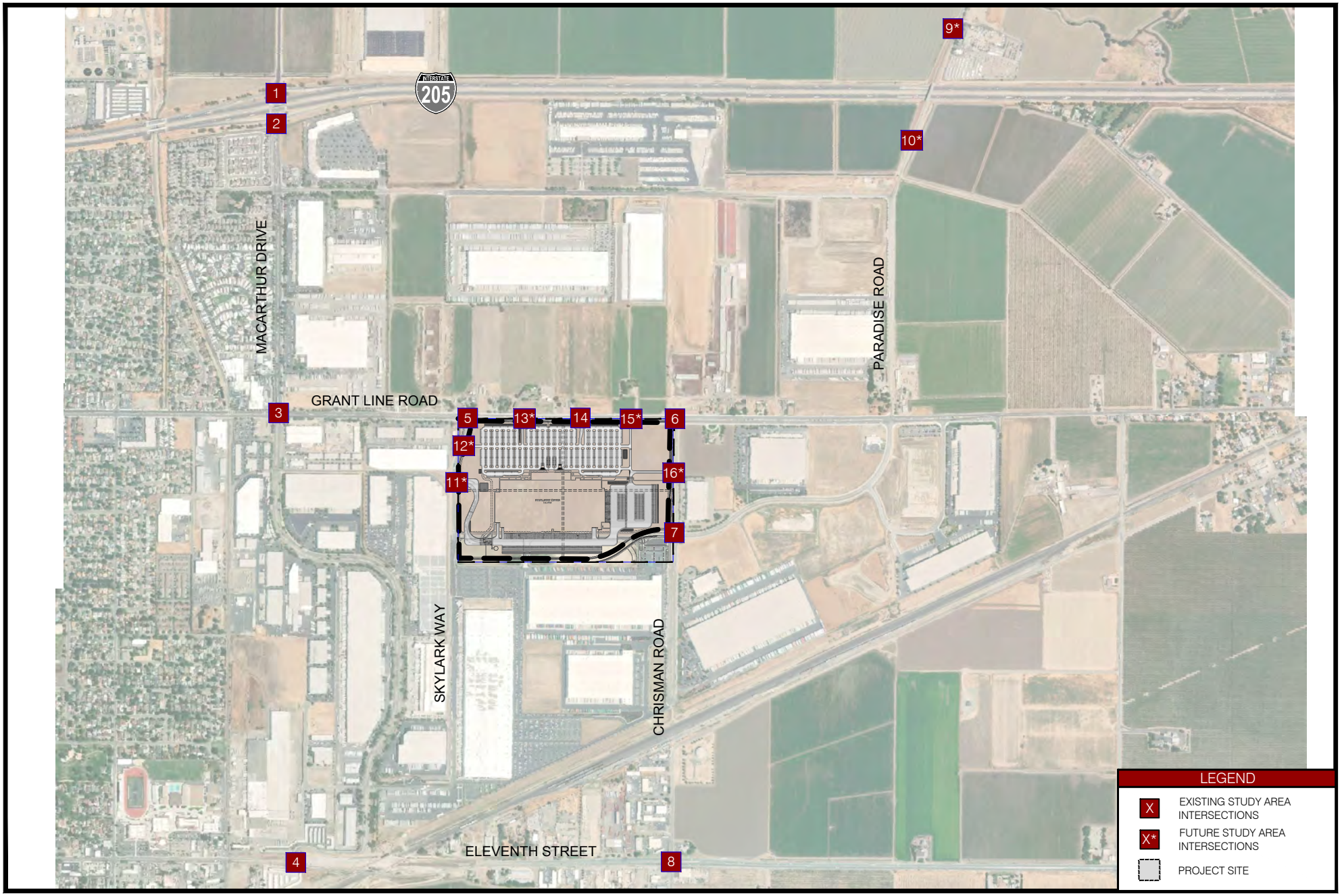

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FIGURE 1

PROJECT LOCATION AND STUDY INTERSECTIONS

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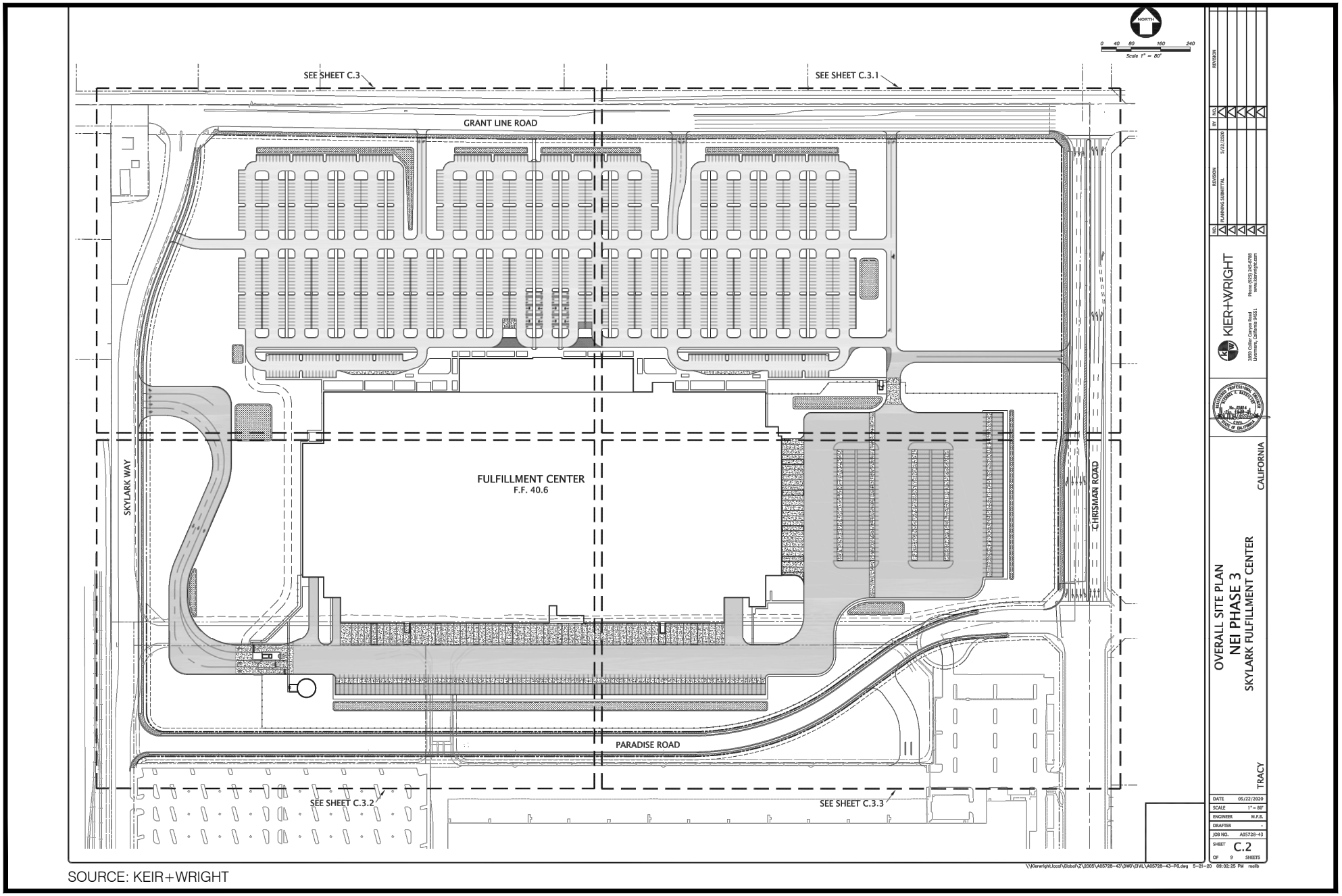
TRACY NEI PHASE 3



SOURCE: KEIR+WRIGHT

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FIGURE 2
SITE PLAN

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TRACY NEI PHASE 3

2. Study Methodology

2.1 Development Conditions

This traffic study is based upon the following development conditions:

- **Existing (2020) Conditions** represents current traffic count data collected using Streetlight Data and previous 2018 and 2019 traffic counts as well as existing roadway geometry and traffic control.
- **Existing Plus Background Conditions** represents current traffic count data collected using Streetlight Data and previous 2018 and 2019 traffic counts with the addition of approved (but not yet completed) developments assumed to occur at the time the Project is constructed. These projects include Tracy Alliance (excluding the Zuriakat and Suvik buildings because they are expected to develop after the next 5 years), IPT Pescadero Building 2, Central Plastics, Seefried Properties, California Highway Patrol (CHP) Office, Home Depot Parking Lot, and Interstate Truck Center. This scenario includes roadway improvements anticipated to be in place at the same time the Project is to be completed, as assumed for the Background projects.
- **Existing Plus Background Plus Project Conditions** represents Existing Plus Background traffic conditions and traffic generated by the project. This scenario includes roadway improvements anticipated to be in place at the same time the Project is to be completed.
- **Cumulative (2035) Conditions** represents future year traffic volumes based on the City of Tracy Citywide Roadway and Transportation Master Plan (TMP) dated November 2012. This scenario includes roadway improvements anticipated to be in place under Cumulative Conditions.
- **Cumulative (2035) Plus Project Conditions** represents future year traffic volumes based on the City of Tracy Citywide Roadway and Transportation Master Plan (TMP) and traffic generated by the Project. This scenario includes roadway improvements anticipated to be in place under Cumulative Conditions.

2.2 Level of Service Standards

Analysis of the study intersection was based on the concept of level of service (LOS) and is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of service for this study were determined using methods defined in Synchro analysis software, using the Highway Capacity 6th Edition (HCM 6th) methodology.

The HCM includes procedures for analyzing side street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for the worst minor street movement or major street left-turn. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 - Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50
Sources: Transportation Research Board, *Highway Capacity Manual 6th*, National Research Council 2016.			

As noted above, intersection delay and LOS is no longer used as the analysis methodology to determine impacts. Therefore, project related intersection LOS impacts will be referred to as deficiencies. Project deficiencies are determined by comparing conditions without the Project to those with the Project. Deficiencies for intersections are created when traffic from the Project causes the LOS to fall below the maintaining agency's LOS threshold or causes intersections to deteriorate further per the criteria indicated below.

City of Tracy

The City of Tracy General Plan has established a LOS D, where feasible, as the minimum acceptable LOS for roadways and overall intersection operations. However, there are certain locations where this standard does not apply. The following provides a list and description of exceptions to the LOS D standard:

- LOS E or lower shall be allowed on streets and at intersections within ¼ mile of any freeway, to discourage inter-regional traffic from using City streets.
- In the Downtown and Bowtie area of the City of Tracy, LOS E shall be allowed in order to create a pedestrian-friendly urban design character and densities necessary to support transit, bicycling, and walking.
- The City may allow individual locations to fall below the City's LOS D standard at intersections where construction of improvements is not feasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse impact on the character of the community, including pedestrian mobility, crossing times, and comfort/convenience.

Intersections may be permitted to fall below their adopted LOS standard on a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.

Deficiency Criteria - Signalized Intersections

- Signalized intersections operating at an acceptable level of service (LOS D or better if located more than ¼ mile from a freeway) degrade to an unacceptable LOS E or F.
- Addition of project trips causes a delay increase of more than four seconds to an intersection already operating at an unacceptable level of service.

Deficiency Criteria - Unsignalized Intersections

- Unsignalized intersections, outside ¼ mile of a freeway, operating at LOS D or better degrade to an unacceptable LOS E or worse with the proposed project and a traffic signal warrant is met. Or if the intersection is within ¼ mile of a freeway operating at LOS E or better and degrades to an unacceptable LOS F with the proposed project and a traffic signal warrant is met.
- Addition of Project trips causes a volume increase of more than 10 percent at an intersection operating at an unacceptable level of service and meets a traffic signal warrant.

Caltrans

For the Caltrans facilities, the previous Guide for the *Preparation of Traffic Impact Study (2002)*, was used for operational analysis. Caltrans identifies a level of service threshold of C/D as the acceptable service level on state highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead local agency consult with Caltrans to determine the appropriate target LOS. For the purpose of this analysis, the LOS criteria for LOS D will be established for Caltrans intersections based on the *Transportation Concept Report for Urban Interchanges* for Interstate 205. This analysis of the Caltrans facilities is consistent with the City General Plan policies and guidelines.

2.4 Study Intersections

The proposed project would generate new vehicular trips that would increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the proposed project, the following intersections in **Table 2** were evaluated. These study intersections were selected because the project would contribute a significant number of vehicle trips to the intersections. The list of study intersections was approved by the City.

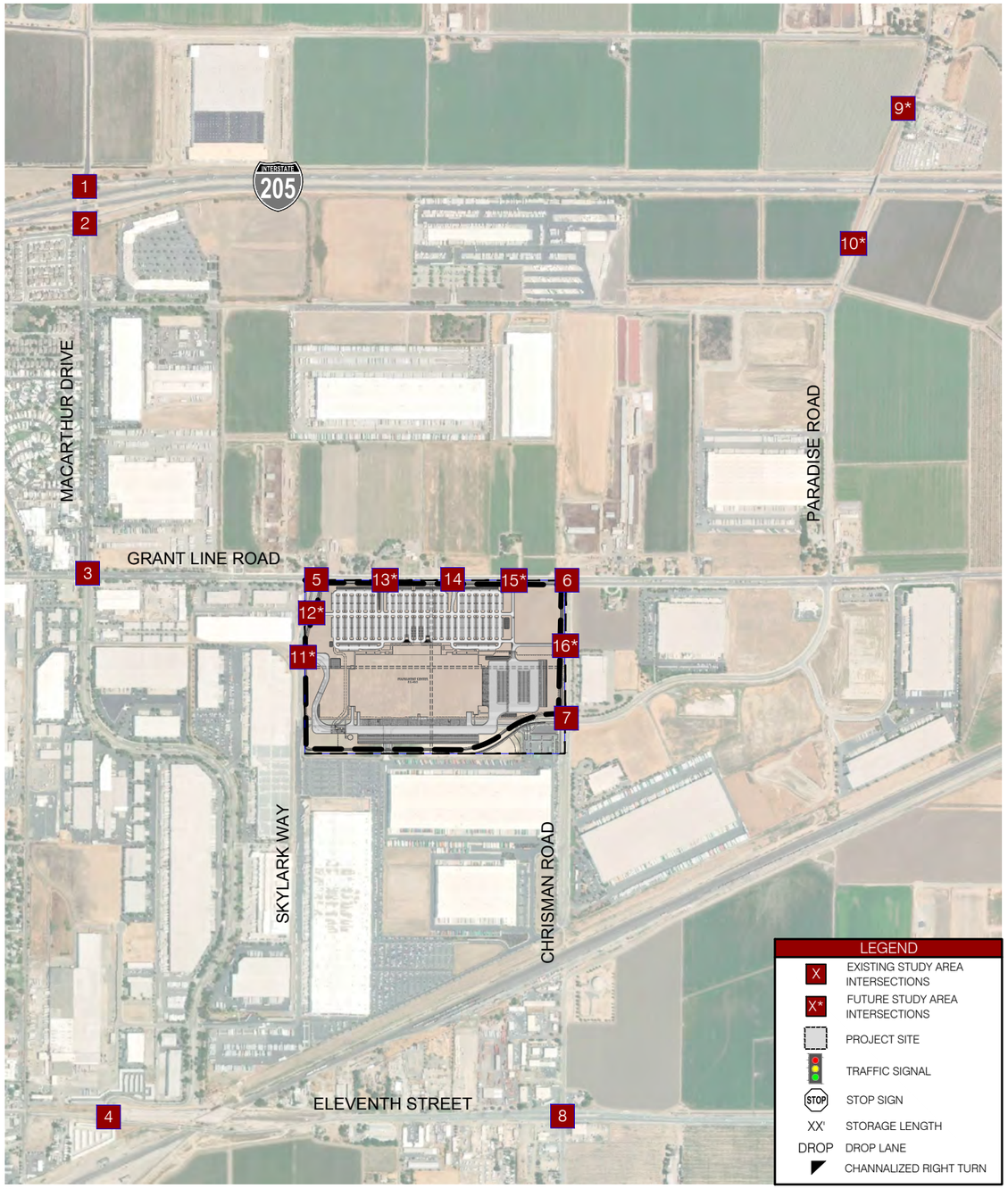
Table 2 - Study Intersections

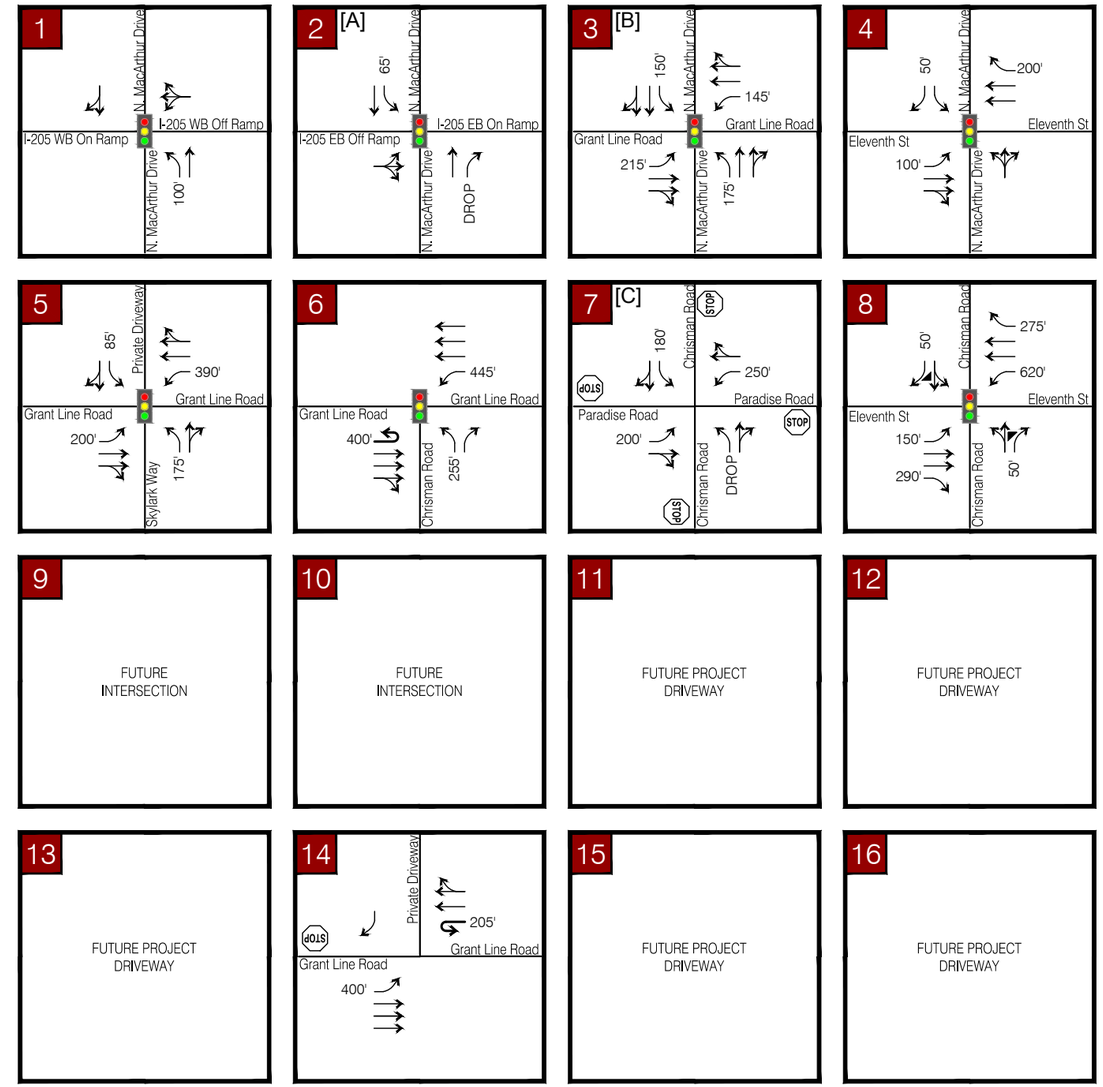
#	Intersection	Existing or Future Intersection
1	MacArthur Drive & I-205 Westbound Ramps	Existing
2	MacArthur Drive & I-205 Eastbound Ramps	Existing
3	MacArthur Drive & Grant Line Road	Existing
4	MacArthur Drive & Eleventh Street	Existing
5	Skylark Way & Grant Line Road	Existing
6	Chrisman Road & Grant Line Road	Existing
7	Chrisman Road & Paradise Road	Existing
8	Chrisman Road & Eleventh Street	Existing
9	Paradise Rd/Chrisman Rd & I-205 Westbound Ramps	Future Intersection
10	Paradise Rd/Chrisman Rd & I-205 Eastbound Ramps	Future Intersection
11	Driveway #1 & Skylark Way	Future Project Driveway
12	Driveway #2 & Skylark Way	Future Project Driveway
13	Driveway #3 & Grant Line Road	Future Project Driveway
14	Driveway #4 & Grant Line Road	Future Project Driveway
15	Driveway #5 & Grant Line Road	Future Project Driveway
16	Driveway #6 & Chrisman Road	Future Project Driveway

3. Existing (2020) Conditions

Weekday intersection turning movement volumes were not collected since current traffic patterns do not reflect typical conditions due to the COVID-19 shelter-in-place restrictions. Therefore, Streetlight Data and historical traffic counts were utilized for Existing traffic volumes. Streetlight data was collected at all study intersections with the exception of Chrisman Road/Grant Line Road and Chrisman Road/Paradise Road where peak hour turning movement volumes were collected in February 2019 and February 2018, respectively. It should be noted that the FEMA Distribution Center, located just north of the proposed project, is currently inhabited and is reflected in the existing traffic counts. However, since existing traffic counts were not collected at Intersection #14 (Future Project Driveway), where the FEMA Distribution Center driveway is located on the north leg, anticipated traffic generated by the FEMA Distribution Center was added to the study intersection. All other project driveways are currently not in use and therefore will be analyzed in the plus project scenario.

Existing traffic control and lane geometry are shown in **Figure 3,** while the existing AM and PM peak hour turning movement volumes are shown in **Figure 4**. Traffic volume data sheets are provided in the **Appendix**.





[A]The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[B]The northbound (NB), southbound (SB), eastbound (EB), and westbound (WB) movement is analyzed as one left turn, two through, and one right turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure..

[C]The northbound (NB) approach is analyzed as one NBL, one NBT, and one NBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[A]The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

Kimley»Horn

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FIGURE 3
EXISTING LANE GEOMETRY AND TRAFFIC CONTROL

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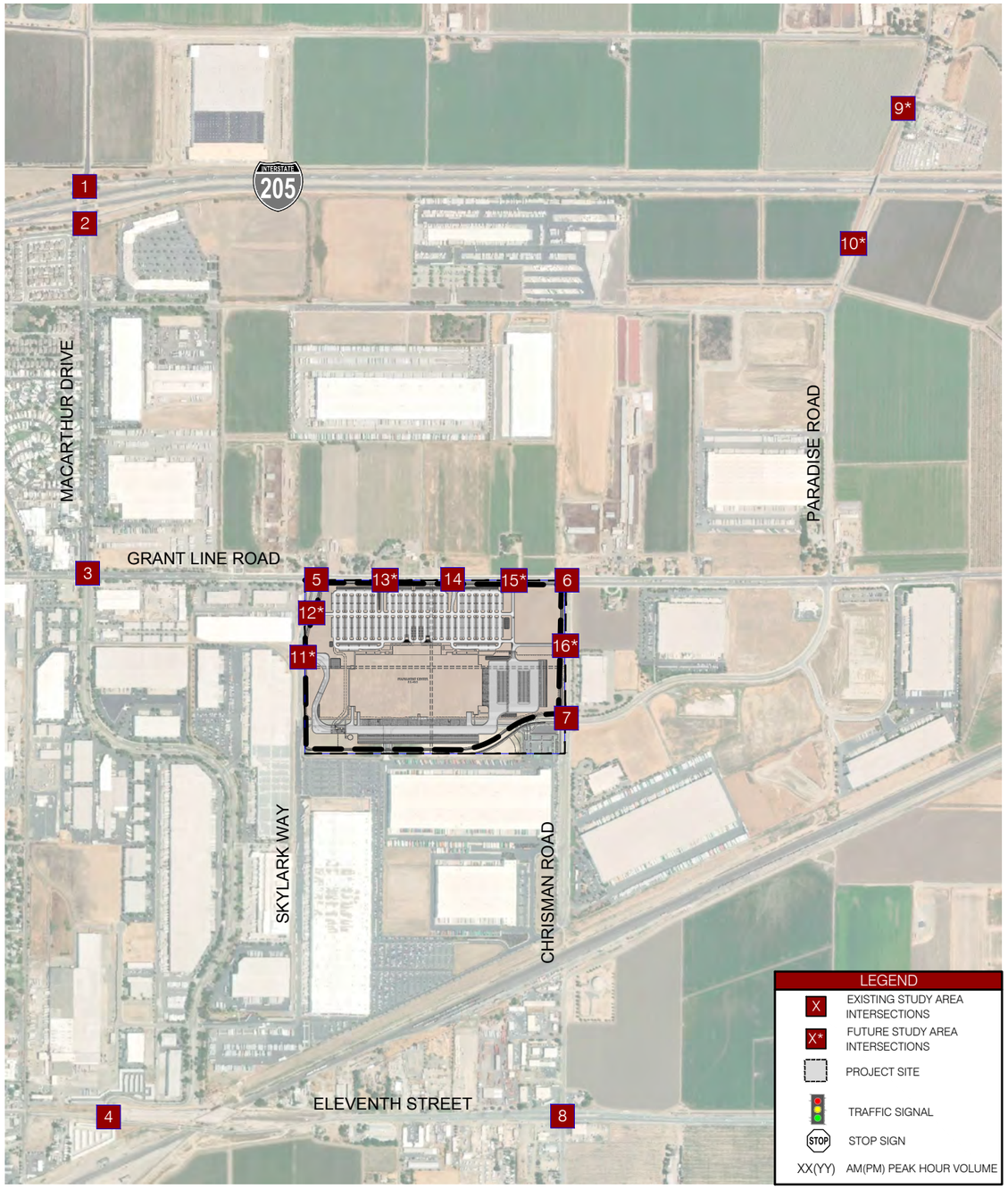

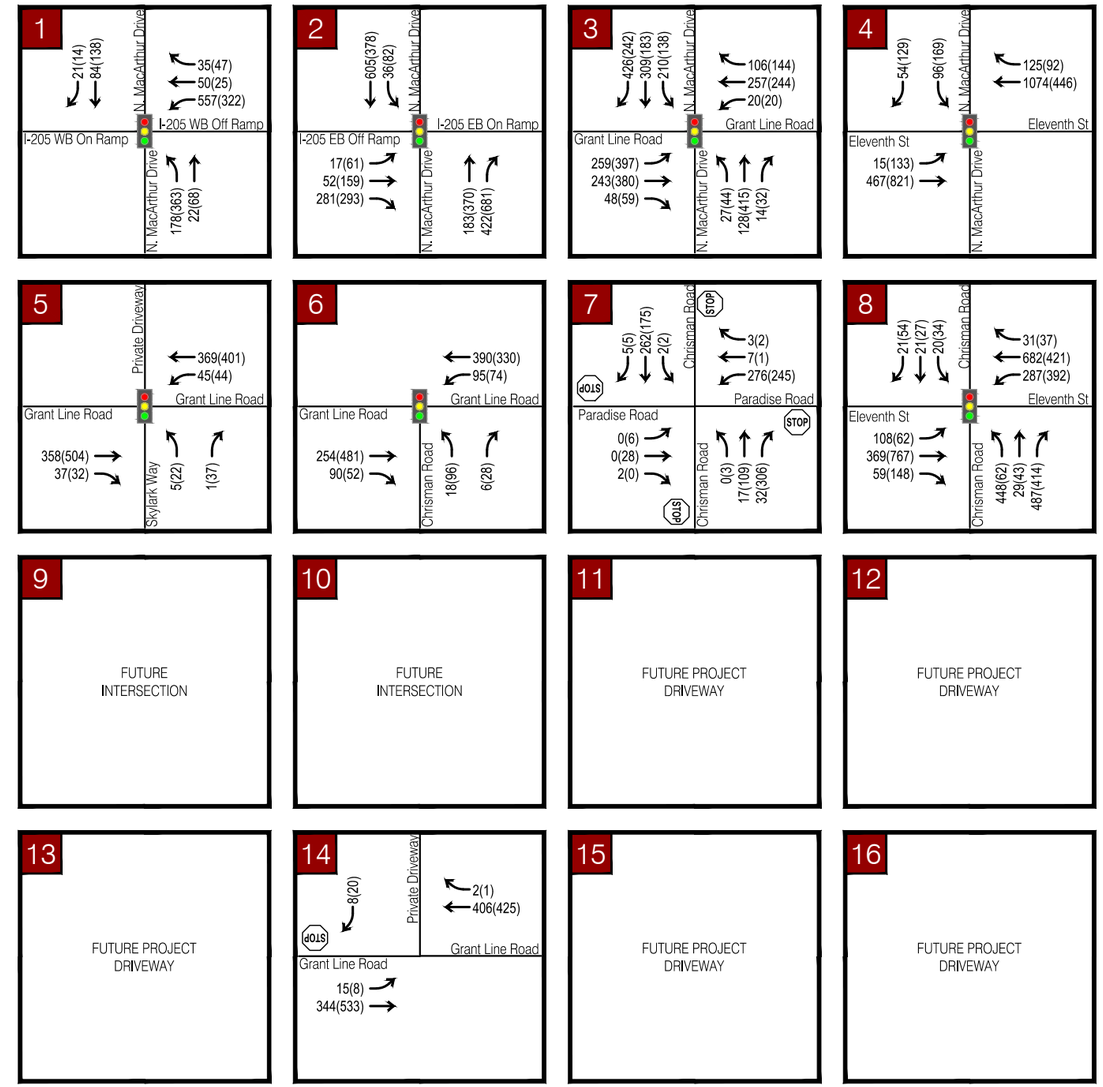

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FIGURE 4
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES

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Existing Conditions traffic operations were evaluated at the study intersections using existing lane geometry, traffic control, and peak hour traffic volumes. **Table 3** illustrates the Level of Service (LOS) and delay under existing conditions and locations operating unacceptably are bolded. As shown in **Table 3**, all study intersection function within acceptable LOS standards under this analysis scenario, except for the following intersection:

- #7 – Chrisman Road / Paradise Road (PM Peak Hour)

Analysis sheets are provided in the **Appendix**.

Table 3 – Existing Conditions Level of Service

#	Intersection[1]	LOS Standard[2]	Jurisdiction	Control Type[3]	Existing (2020) Conditions			
					AM Peak Hour		PM Peak Hour	
					LOS	Delay[4]	LOS	Delay[4]
1	MacArthur Drive & I-205 WB Ramps	D	Caltrans	Signal	C	20.8	B	19.2
2	MacArthur Drive & I-205 EB Ramps	D	Caltrans	Signal	B	12.3	C	26.8
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	C	29.5	D	39.8
4	MacArthur Drive & Eleventh Street	D	Tracy	Signal	A	8.7	B	14.8
5	Skylark Way & Grant Line Road	D	Tracy	Signal	A	4.7	A	7.2
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	A	8.7	B	10.5
7	Chrisman Road & Paradise Road	D	Tracy	AWSC	B	15.0	**E**	**45.9**
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	37.4	C	28.7
9	Chrisman Rd & I-205 WB Ramps	D	Caltrans	-	Future Intersection			
10	Chrisman Rd & I-205 EB Ramps	D	Caltrans	-	Future Intersection			
11	Driveway #1 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
12	Driveway #2 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
13	Driveway #3 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
14	Driveway #4 & Grant Line Road	D	Tracy	SSSC	A	0.3	A	0.3
	Worst Approach (SB)				A	9.8	B	10.0
15	Driveway #5 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
16	Driveway #6 & Chrisman Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							

Note: Intersections that are operating below acceptable levels are shown in **BOLD**.
1. Analysis performed using HCM 6th edition methodology with the exception of Intersection #6 which was analyzed in HCM 2000.
2. Overall level of service (LOS) standard for City of Tracy and Caltrans intersections is LOS D.
3. SSSC - Side Street Stop Control and AWSC – All-Way Stop Control.
4. Delay indicated in seconds/vehicle. In addition to average control delay, which is reported for signalized, AWSC, and SSSC intersections, the delay for the worst movement is also reported for SSSC intersections.

4. Existing Plus Background Conditions

In the Existing Plus Background Conditions, the following approved (but not yet developed) projects within the study area were included as part of the Background projects since these projects will contribute to traffic volumes at the study intersections:

- Tracy Alliance (Excluding the Zuriakat and Suvik Buildings)
- IPT Pescadero Building 2
- Central Plastics
- Seefried Properties
- California Highway Patrol (CHP) Office
- Home Depot Parking Lot
- Interstate Truck Center

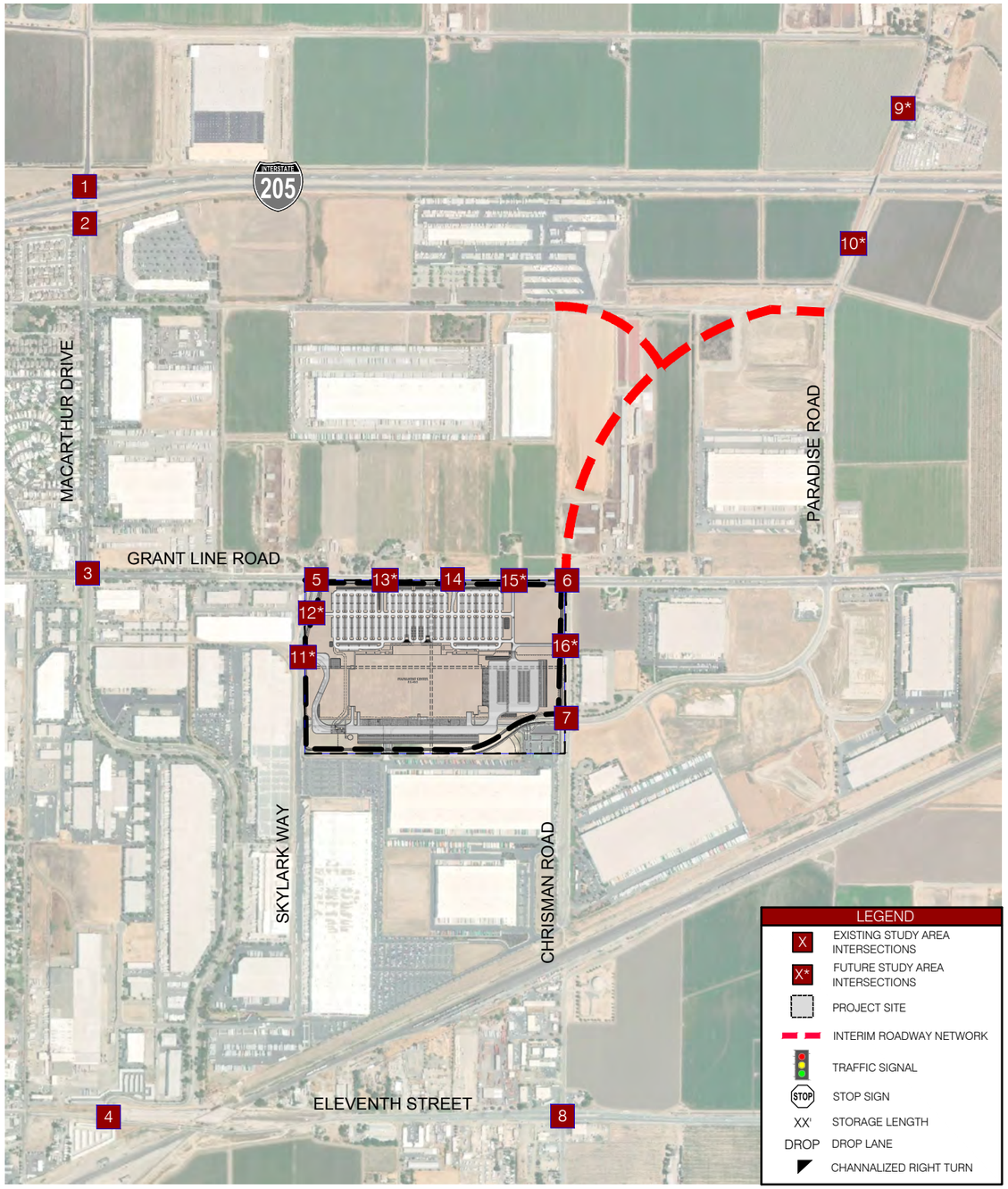
In the Existing Plus Background Conditions, Chrisman Road at Grant Line Road will extend to the north connecting to the intersection of Pescadero Avenue and Paradise Road. As a result, the intersection of Chrisman Road and Grant Line Road (Intersection #6) will be restriped to convert the eastbound U-turn to an eastbound left turn, the northbound right turn to a shared northbound through/right turn, construct an additional westbound right-turn, and a new north leg will be constructed consisting of a shared southbound through/left turn and a southbound right turn. The extension of Chrisman Road will result in a shift in Existing volumes which were reassigned to the street network.

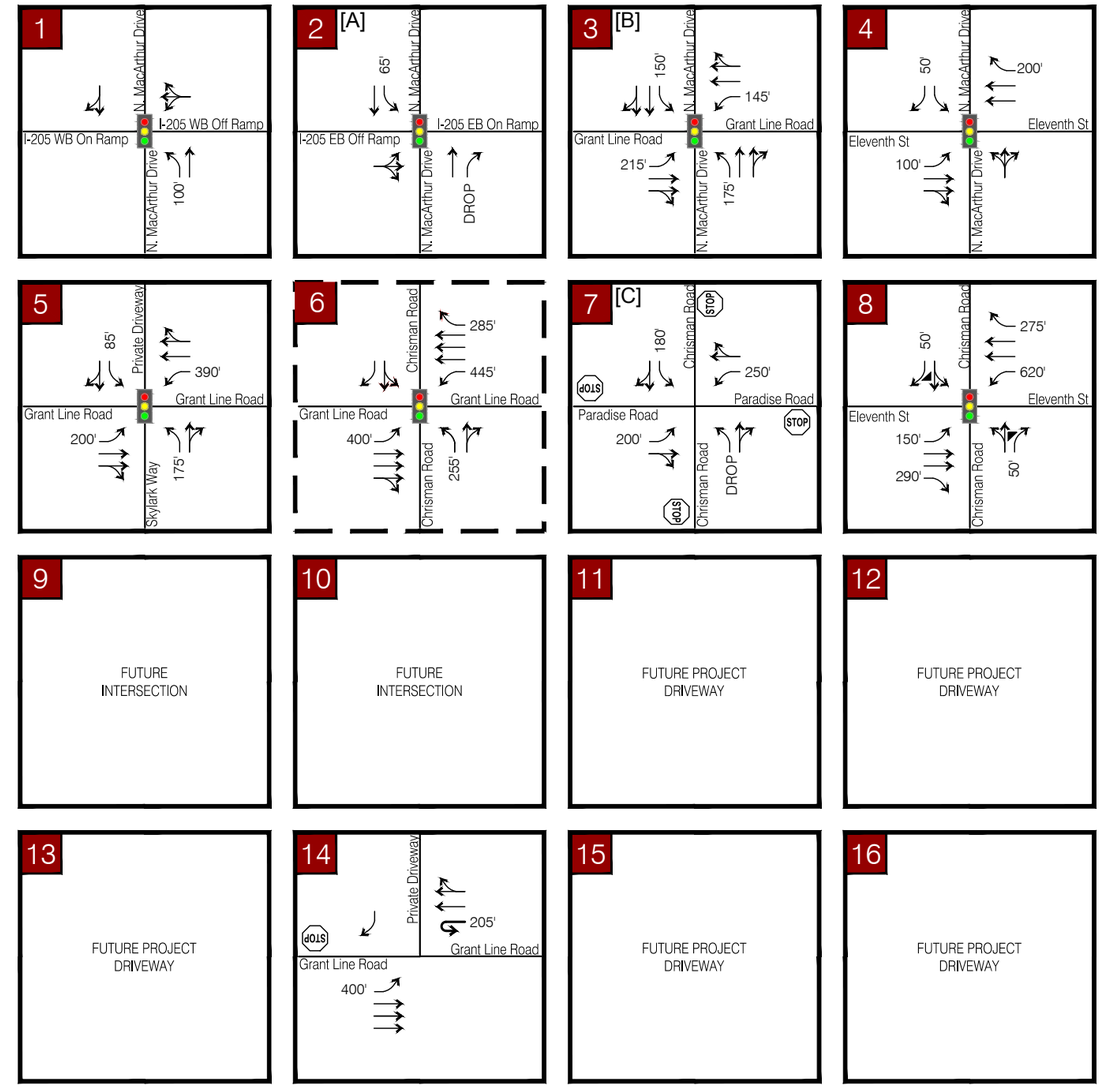
Existing Plus Background traffic control and lane geometry is shown in **Figure 5.** Existing Plus Background AM and PM peak hour turning movement volumes are shown in **Figure 6**.

Existing Plus Background Conditions traffic operations were evaluated at the study intersections and the results are presented in **Table 4.** All study intersections function within acceptable LOS standards under this analysis scenario, except for the following intersections:

- #3 – MacArthur Drive / Grant Line Road (PM Peak Hour)
- #7 – Chrisman Road / Paradise Road (PM Peak Hour)

Analysis sheets are provided in the **Appendix**.





[A]The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[B]The northbound (NB), southbound (SB), eastbound (EB), and westbound (WB) movement is analyzed as one left turn, two through, and one right turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure..

[C]The northbound (NB) approach is analyzed as one NBL, one NBT, and one NBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

Note: Dashed intersection boxes reflect changed conditions from Existing Conditions.

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FIGURE 5
EXISTING PLUS BACKGROUND LANE GEOMETRY AND TRAFFIC CONTROL

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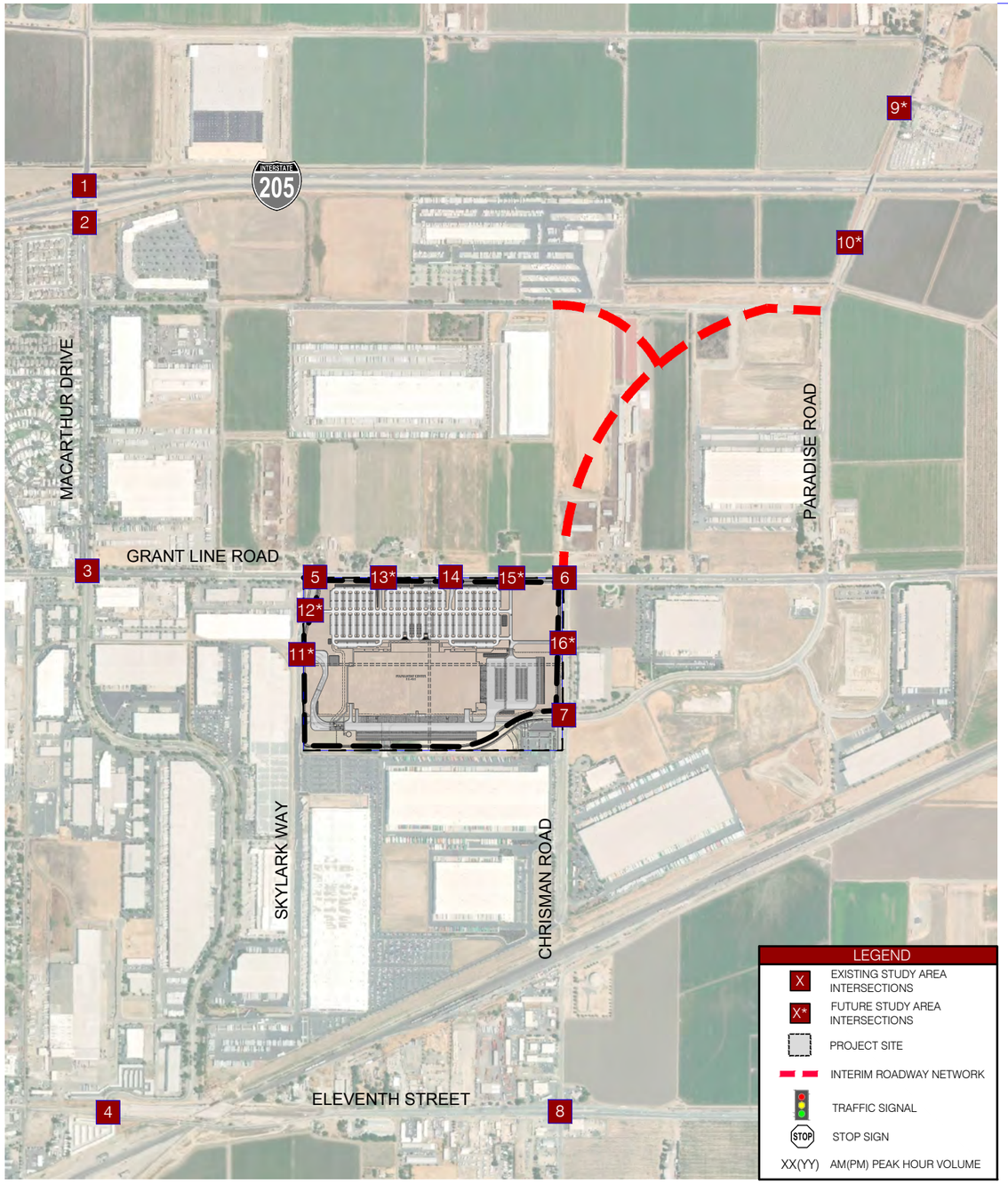

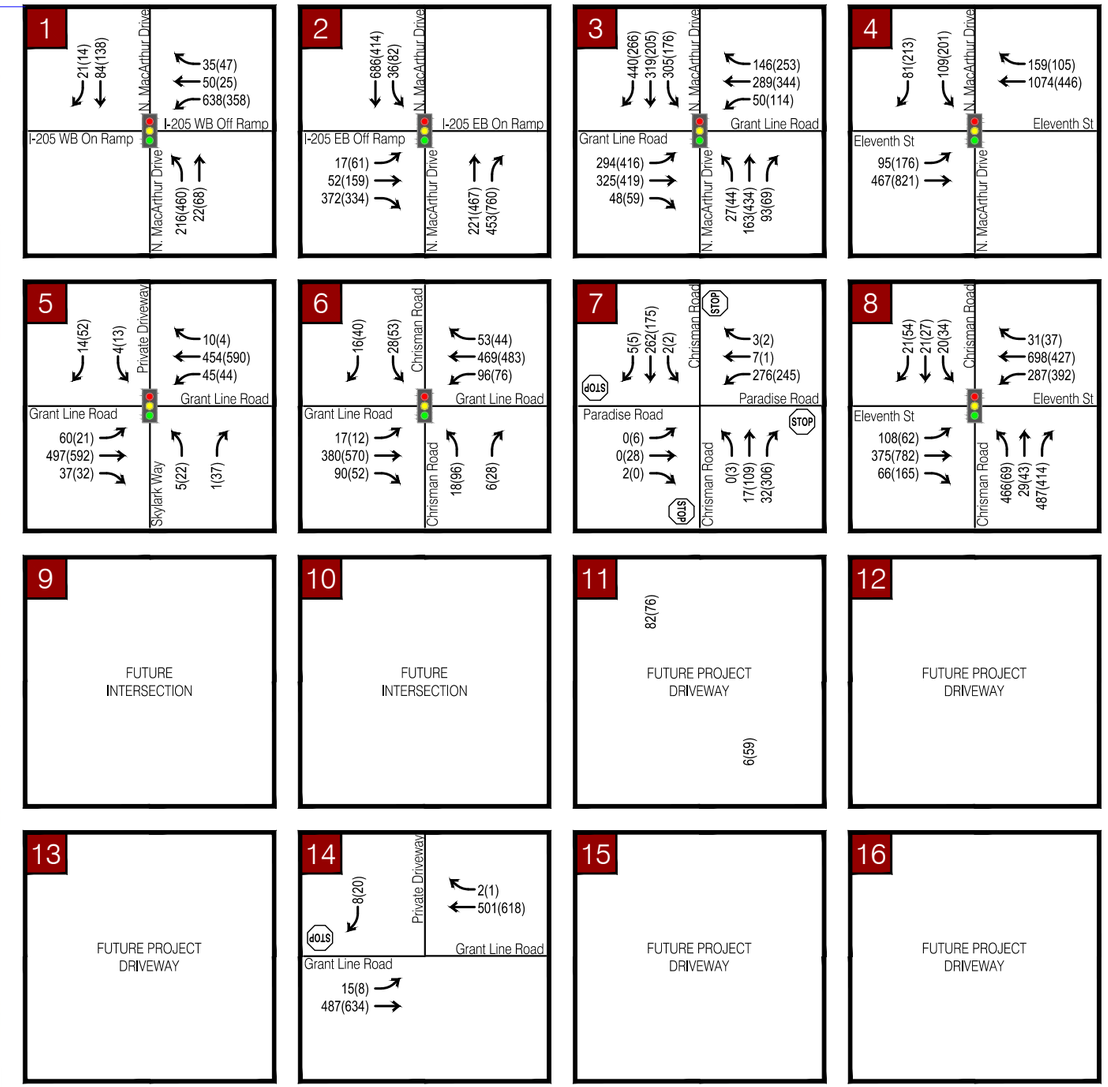

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FIGURE 6

EXISTING PLUS BACKGROUND PEAK HOUR TURNING MOVEMENT VOLUMES

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Table 4 – Existing Plus Background Conditions Level of Service

#	Intersection[1]	LOS Standard[2]	Jurisdiction	Control Type[3]	Existing + Background Conditions			
					AM Peak Hour		PM Peak Hour	
					LOS	Delay[4]	LOS	Delay[4]
1	MacArthur Drive & I-205 WB Ramps	D	Caltrans	Signal	C	32.0	C	27.8
2	MacArthur Drive & I-205 EB Ramps	D	Caltrans	Signal	B	17.2	D	40.0
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	D	41.8	**E**	**63.2**
4	MacArthur Drive & Eleventh Street	D	Tracy	Signal	B	11.4	B	18.8
5	Skylark Way & Grant Line Road	D	Tracy	Signal	A	9.9	B	13.5
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	B	14.3	B	19.7
7	Chrisman Road & Paradise Road	D	Tracy	AWSC	B	15.0	**E**	**45.9**
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	39.6	C	29.3
9	Chrisman Rd & I-205 WB Ramps	D	Caltrans	-	Future Intersection			
10	Chrisman Rd & I-205 EB Ramps	D	Caltrans	-	Future Intersection			
11	Driveway #1 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
12	Driveway #2 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
13	Driveway #3 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
14	Driveway #4 & Grant Line Road	D	Tracy	SSSC	A	0.2	A	0.2
	Worst Approach (SB)				B	10.2	B	10.9
15	Driveway #5 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
16	Driveway #6 & Chrisman Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							

Note: Intersections that are operating below acceptable levels are shown in **BOLD**.

1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy and Caltrans intersections is LOS D.
3. SSSC - Side Street Stop Control and AWSC – All-Way Stop Control.
4. Delay indicated in seconds/vehicle. In addition to average control delay, which is reported for signalized, AWSC, and SSSC intersections, the delay for the worst movement is also reported for SSSC intersections.

5. Existing Plus Background Plus Project Conditions

5.1 Project Lane Geometry and Configuration

In Plus Project Conditions, the proposed project will construct the following roadway improvements:

- Chrisman Road between Grant Line Road to south of Paradise Road will be widened from one lane in each direction with a two-way left-turn lane (TWLTL) to three lanes in each direction:
  - #6 – Chrisman Road / Grant Line Road will be reconfigured to:
    - Northbound Approach – one left turn, two throughs, and one right turn lane
    - Southbound Approach – one left turn, two throughs, and one right turn lane
  - #7 – Chrisman Road / Paradise Road will be reconfigured to:
    - Northbound Approach – one left turn, two throughs, and one shared through/right turn lane. However, one through lane will be hatched out during Existing Plus Background Plus Project Conditions but will be allowed for use in Cumulative Conditions
    - Southbound Approach – one left turn, three throughs, and one right turn lane. However, two through lanes will be hatched out during Existing Plus Background Plus Project Conditions but will be allowed for use in Cumulative Conditions
- #14 – Grant Line Road / Driveway #4 will be converted from a SSSC to a signalized intersection

Existing Plus Background Plus Project traffic control and lane geometry is shown in **Figure 7**.

5.2 Trip Generation

Trip generation for projects are typically calculated based on information contained in the Institute of Transportation Engineer's (ITE) publication, *Trip Generation*, 10th Edition. However, a custom trip generation was developed based on employee shift data provided by the project applicant to more accurately reflect the trips generated by the project. The data provides average weekday trips for both cars and trucks entering and exiting the project site which were then used to estimate the AM and PM peak hour trips. It should be noted that this study relies on the completeness and accuracy of the information provided by the project applicant and the City. Therefore, in the event that the project applicant finds the employee shift data no longer accurate, this study will no longer be valid and an additional traffic analysis should be completed. Employee shift data is provided in the **Appendix**.

The proposed project is anticipated to generate 3,573 daily trips, 593 AM peak hour trips (560 In / 33 Out), and 995 PM peak hour trips (494 In / 501 Out) for both passenger cars and truck trips. **Table 5** shows the estimated trip generation.

Table 5 – Project Trip Generation

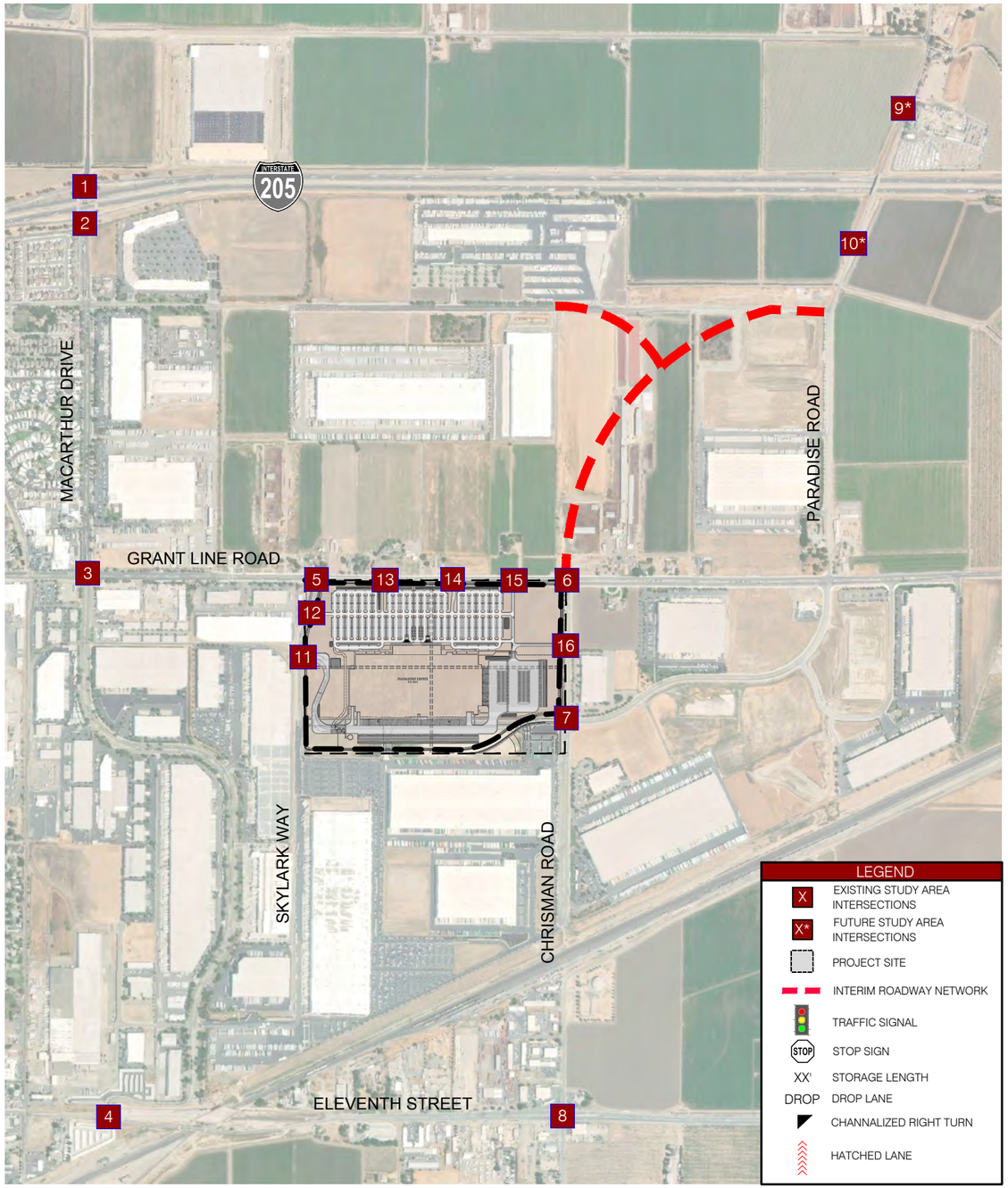
Land Uses	Project Size	DAILY	AM PEAK HOUR		PM PEAK HOUR	
		Total	Total Peak Hour	IN / OUT	Total Peak Hour	IN / OUT
NEI Phase 3 - Cars	3,485 KSF	3,013	573	550 / 23	979	486 / 493
NEI Phase 3 - Trucks		560	20	10 / 10	16	8 / 8
NEI Phase 3 - Total		**3,573**	**593**	**560 / 33**	**995**	**494 / 501**

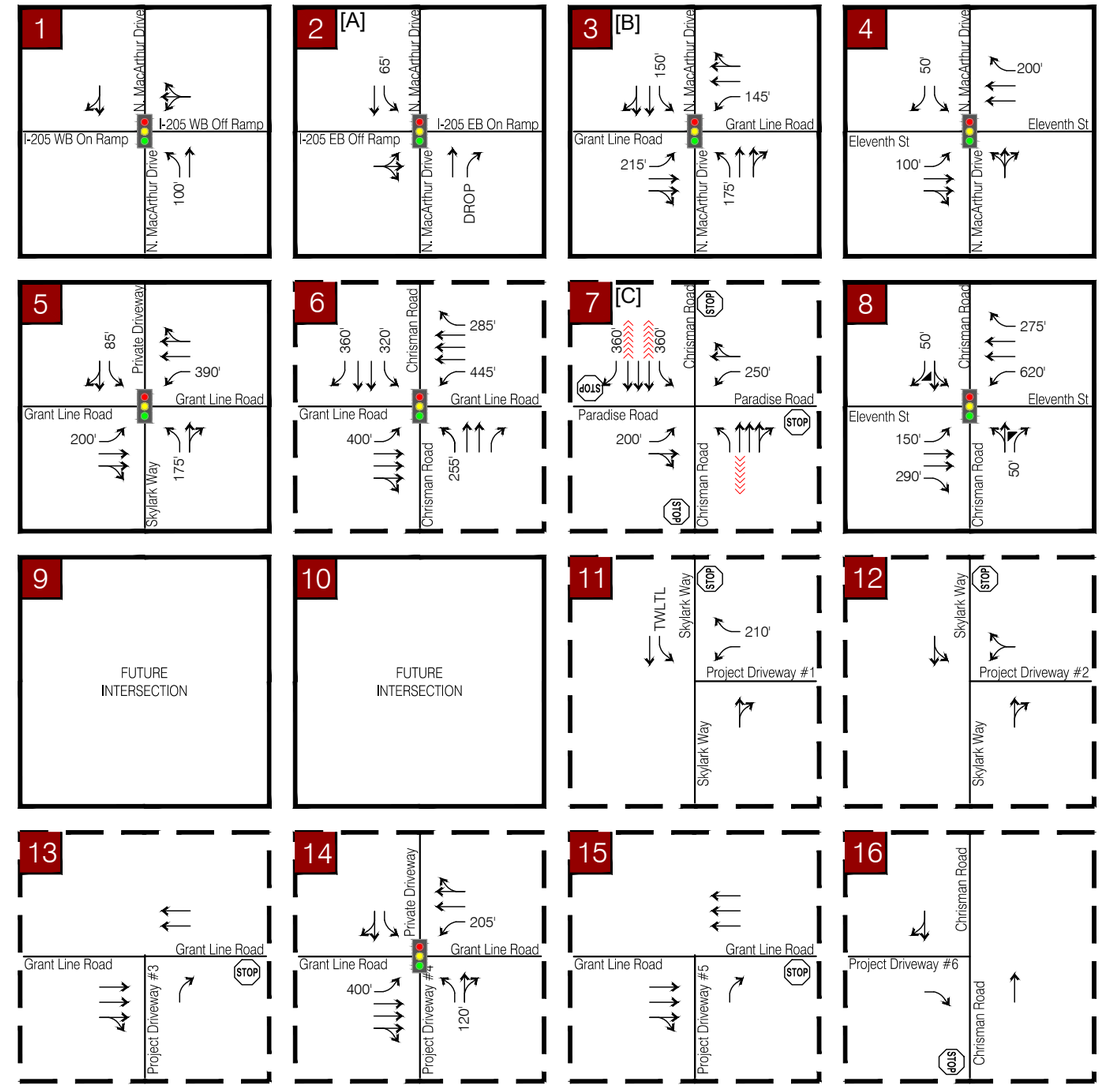
Source: Kimley-Horn and Associates, Inc., 2020

5.3 Trip Distribution and Assignment

The project trip distribution for the proposed project was based on existing City travel patterns, circulation access to Interstate 205, and the City Travel Demand Model. Two different trip distributions were developed, one for passenger cars and one for trucks. For passenger cars, it is estimated that there will be a 78 percent distribution going to and from west of the project site and 22 percent distribution going to and from east of the project site. For trucks, it is assumed that there will be a 66.67 percent distribution going to and from west of the project site and a 33.33 percent distribution going to and from south of the project site. Trucks are not allowed along Grant Line Road just east of the City Limits, therefore trucks going to and from north and south I-5 will use Eleventh Street rather than Grant Line Road.

Figure 8 illustrates the trip distribution assumed for Existing Plus Background Plus Project analysis. It should be noted that there is a different trip distribution for the Cumulative project conditions due to future roadway improvements. This will be discussed later in the memo in the Cumulative Traffic Conditions section. **Figure 9** and **Figure 10** illustrates the trip assignment for Existing Plus Background Plus Project Conditions for passenger cars and trucks, respectively. Existing Plus Background Plus Project AM and PM peak hour turning movement volumes are shown in **Figure 11**.





[A] The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[B] The northbound (NB), southbound (SB), eastbound (EB), and westbound (WB) movement is analyzed as one left turn, two through, and one right turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure..

[C] The southbound (SB) approach is striped as one SBL, three SBT, and one SBR turn lane. However, two SBT lanes will be hatched out to prohibit use. The northbound (NBT) approach will be striped as one NBL, two NBT, and one shared NBT/R tur lane. However, one NBT lane will be hatched out to prohibit use.

Note: Dashed intersection boxes reflect changed conditions from Background Conditions.

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FIGURE 7

EXISTING PLUS BACKGROUND PLUS PROJECT LANE GEOMETRY AND TRAFFIC CONTROL

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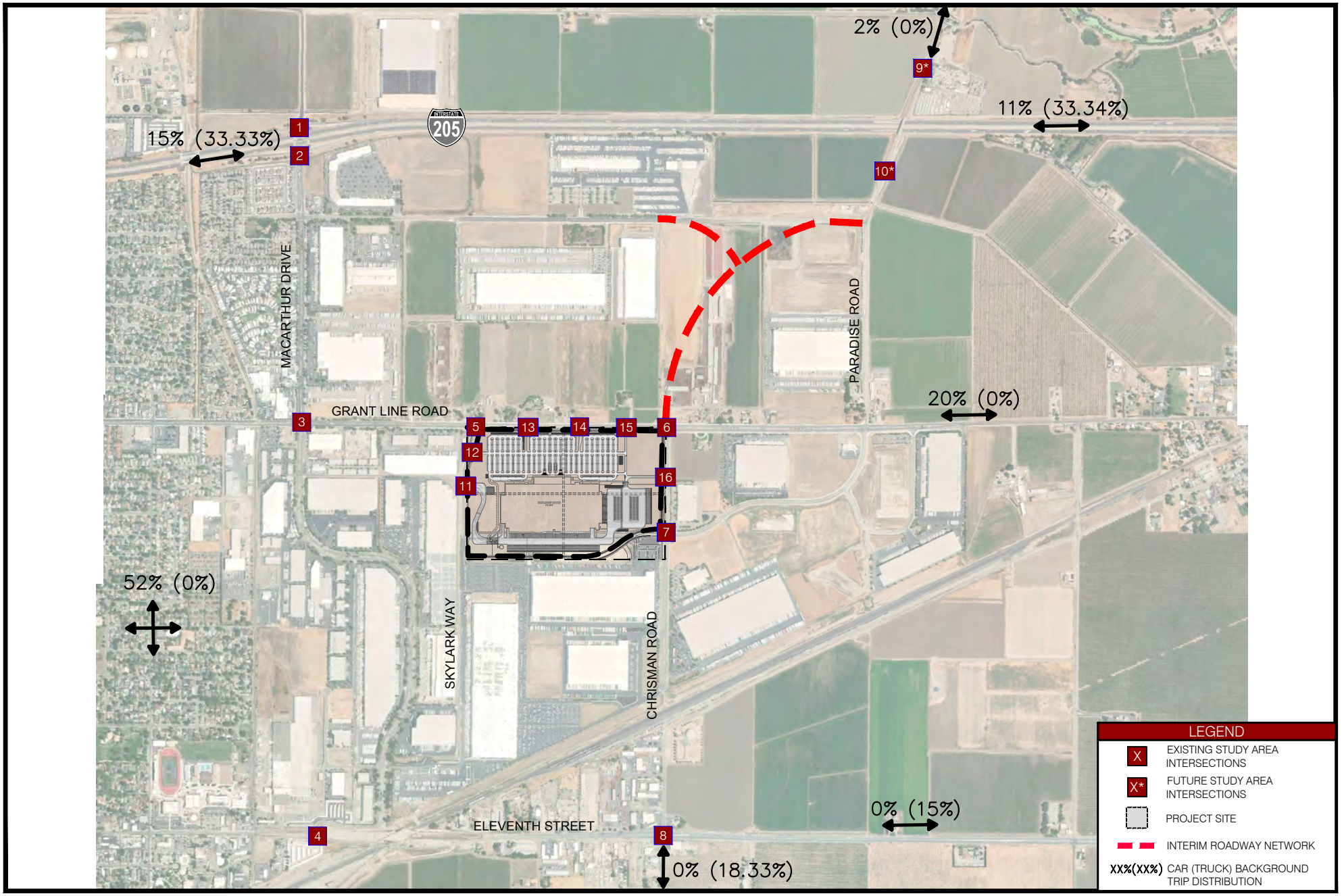

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FIGURE 8

EXISTING PLUS BACKGROUND TRIP DISTRIBUTION

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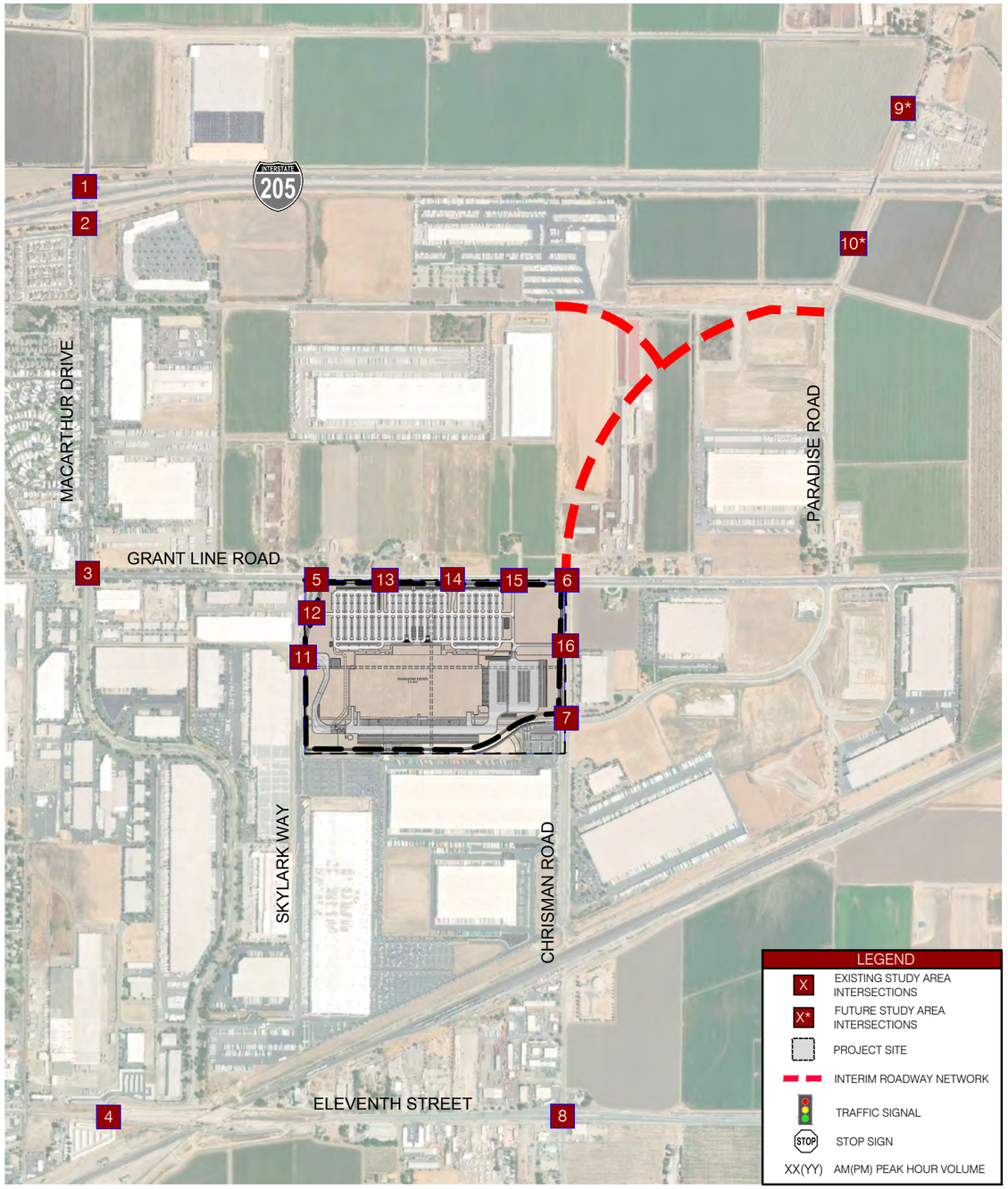

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FIGURE 9

EXISTING PLUS BACKGROUND PROJECT GENERATED PEAK HOUR TURNING MOVEMENT VOLUMES (CAR)

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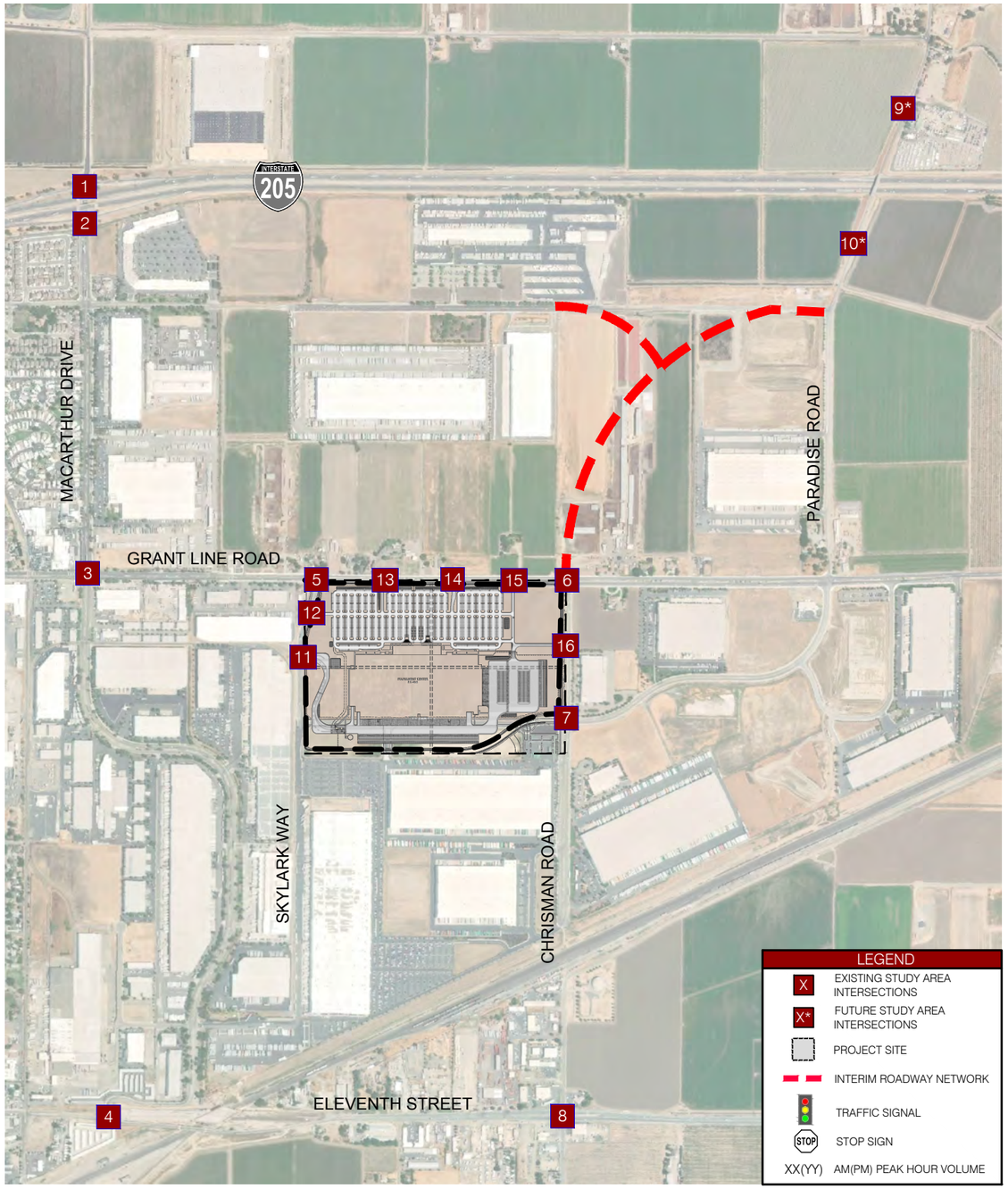

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FIGURE 10
EXISTING PLUS BACKGROUND PROJECT GENERATED PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCK)

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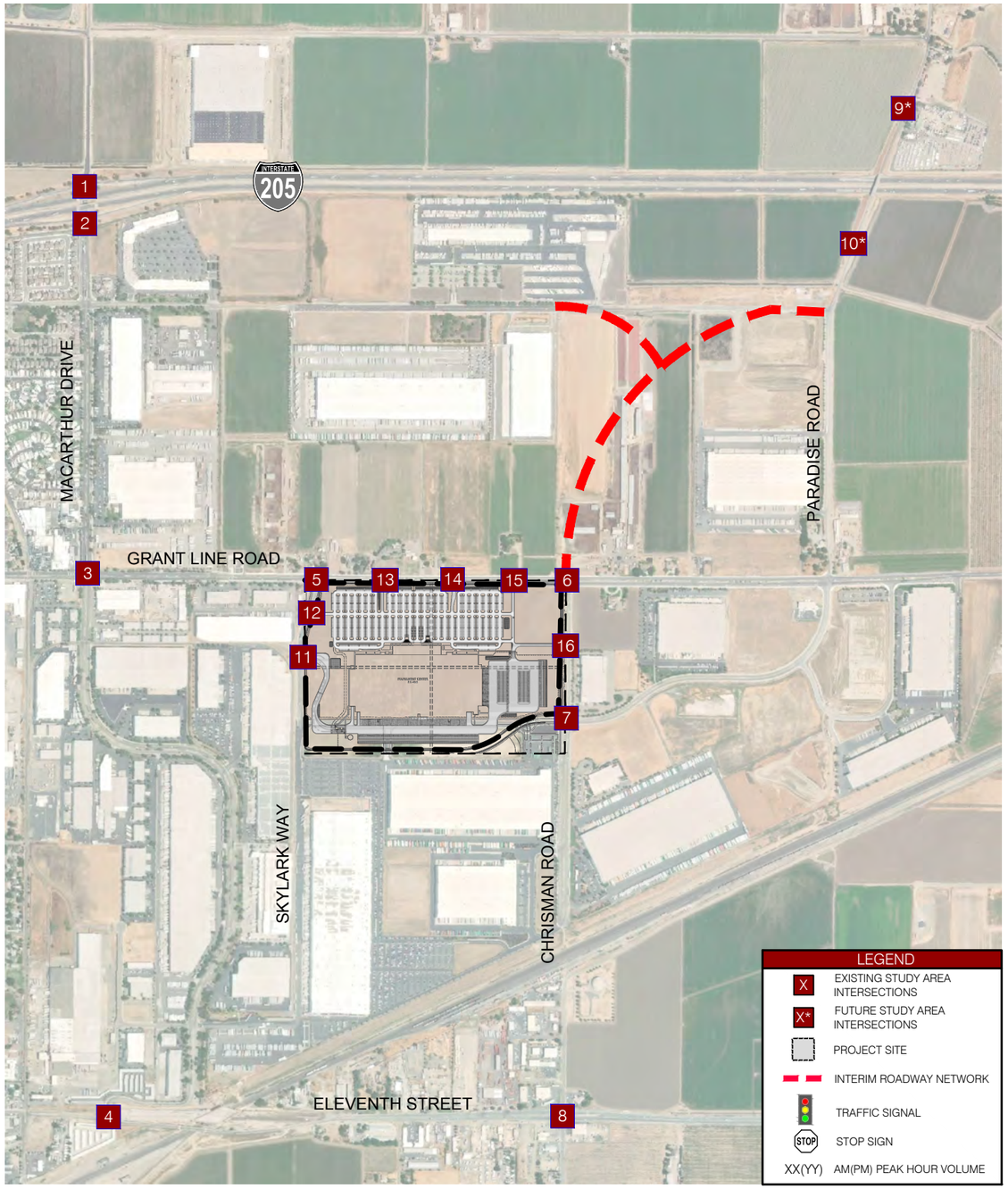
TRACY NEI PHASE 3



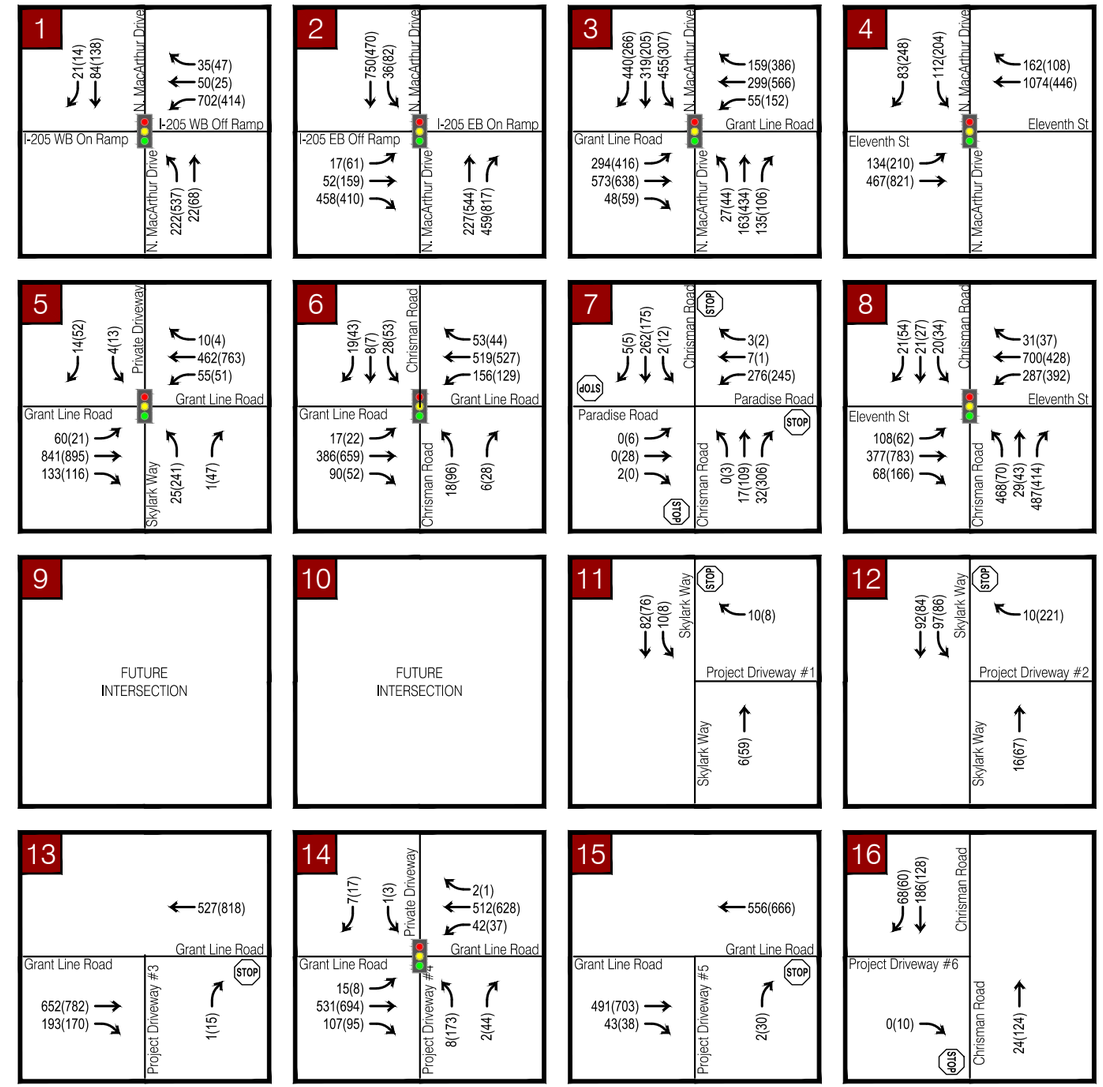


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FIGURE 11

EXISTING PLUS BACKGROUND PLUS PROJECT PEAK HOUR TURNING MOVEMENT VOLUMES

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TRACY NEI PHASE 3

5.4 Intersection Level of Service

Existing Plus Background Plus Project Conditions traffic operations were evaluated at the study intersections and the results are presented in **Table 6.** All study intersections function within acceptable LOS standards under this analysis scenario, except for the following intersection:

- #2 – MacArthur Drive / I-205 EB Ramps (PM Peak Hour) – Intersection operating at an acceptable LOS D without the project and degrades to an unacceptable LOS E with the project – **Deficiency**
- #3 – MacArthur Drive / Grant Line Road (AM and PM Peak Hours) – Intersection operating at an acceptable LOS D without the project and degrades to an unacceptable LOS E with the project in the AM peak hour. Intersection operating at an unacceptable LOS E without the project with an increase in average delay of more than four (4) seconds in the PM peak hour – **Deficiency**
- #7 – Chrisman Road / Paradise Road (PM Peak Hour) – Intersection operating at an unacceptable LOS E without the project and degrades to an unacceptable LOS F with the project. The addition of the project trips contributes to a less than 10 percent volume increase to the intersection and the peak hour traffic signal warrant is not met – **Not a Deficiency**

Analysis sheets are provided in the **Appendix**.

5.5 Peak Hour Signal Warrant

Peak hour signal warrants were evaluated at the unsignalized intersection of Chrisman Road/Paradise Road and Driveway #4/Grant Line Road under Existing Plus Background Plus Project Conditions. The following intersection did not meet the peak hour signal warrant:

- #7 – Chrisman Road & Paradise Road

Analysis sheets are provided in the **Appendix**.

Table 6 – Existing Plus Background Plus Project Conditions Level of Service

#	Intersection[1]	LOS Standard[2]	Jurisdiction	Control Type[3]	Existing + Background Conditions				Existing + Background + Project Conditions					
					AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour		
					LOS	Delay[4]	LOS	Delay[4]	LOS	Delay[4]	Delay Var	LOS	Delay[4]	Delay Var
1	MacArthur Drive & I-205 WB Ramps	D	Caltrans	Signal	C	32.0	C	27.8	D	45.1	13.1	D	48.3	20.5
2	MacArthur Drive & I-205 EB Ramps	D	Caltrans	Signal	B	17.2	D	40.0	C	28.0	10.8	**E**	**59.8**	**19.8**
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	D	41.8	**E**	**63.2**	**E**	**77.1**	**35.3**	**F**	**91.8**	**28.6**
4	MacArthur Drive & Eleventh Street	D	Tracy	Signal	B	11.4	B	18.8	B	12.1	0.7	C	21.6	2.8
5	Skylark Way & Grant Line Road	D	Tracy	Signal	A	9.9	B	13.5	B	11.8	1.9	C	22.3	8.8
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	B	14.3	B	19.7	B	15.3	1.0	C	21.2	1.5
7	Chrisman Road & Paradise Road	D	Tracy	AWSC	B	15.0	**E**	**45.9**	B	14.8	-0.2	**F**	**57.0**	**11.1**
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	39.6	C	29.3	D	39.8	0.2	C	29.3	0.0
9	Chrisman Rd & I-205 WB Ramps	D	Caltrans	-	Future Intersection									
10	Chrisman Rd & I-205 EB Ramps	D	Caltrans	-	Future Intersection									
11	Driveway #1 & Skylark Way	D	Tracy	-	Future Project Driveway				A	1.6	1.6	A	1.0	1.0
	Worst Approach								A	9.3	9.3	A	9.6	9.6
12	Driveway #2 & Skylark Way	D	Tracy	-	Future Project Driveway				A	3.7	3.7	A	6.1	6.1
	Worst Approach								A	8.4	8.4	A	9.8	9.8
13	Driveway #3 & Grant Line Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.1	0.1
	Worst Approach								B	12.7	12.7	B	13.7	13.7
14	Driveway #4 & Grant Line Road[5]	D	Tracy	SSSC/ Signal	A	0.2	A	0.2	B	14.1	3.9	B	18.6	7.7
	Worst Approach (SB)				B	10.2	B	10.9						
15	Driveway #5 & Grant Line Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.3	0.3
	Worst Approach								B	11.0	11.0	B	12.6	12.6
16	Driveway #6 & Chrisman Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.3	0.3
	Worst Approach								A	0.0	0.0	B	9.6	9.6

Note: Intersections that are operating below acceptable levels are shown in BOLD.

1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy and Caltrans intersections is LOS D.
3. SSSC - Side Street Stop Control and AWSC – All-Way Stop Control.
4. Delay indicated in seconds/vehicle. In addition to average control delay, which is reported for signalized, AWSC, and SSSC intersections, the delay for the worst movement is also reported for SSSC intersections.
5. Intersection #14 will be a SSSC in Existing Plus Background Conditions and will be signalized in Existing Plus Background Plus Project Conditions

5.6 Existing Plus Background Plus Project Recommended Improvements

After the initial analysis for this study was completed, City staff informed Kimley-Horn that the Tracy Alliance background project is not expected to be approved and constructed soon enough to be categorized as a background development for this analysis. Therefore, the two intersections, #2 and #3, were reanalyzed without the Tracy Alliance trips on the network. It can be assumed that all other intersections that had acceptable operations with the additional background trips will continue to have acceptable operations without the Tracy Alliance trips.

The following improvements are recommended at the deficient intersections under Existing Plus Background Plus Project Conditions:

- #3 – MacArthur Drive / Grant Line Road – It is recommended to add a westbound right-turn lane with an overlap and to optimize the cycle length. With the improvement, the intersection will operate at an acceptable LOS D in the AM peak hour and will operate at a LOS E, better than without project conditions, in the PM peak hour.

A summary of the traffic operations without Tracy Alliance is provided in **Table 7** and a summary of traffic operations with the improvements is provided in **Table 8**.

Analysis sheets are provided in the **Appendix**.

Table 7 – Existing Plus Background (without Tracy Alliance) Plus Project Conditions Level of Service

#	Intersection[1]	LOS Standard	Jurisdiction[2]	Control Type[3]	Existing + Background + Project Conditions				Existing + Background (w/o Alliance) + Project Conditions					
					AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour		
					LOS	Delay[4]	LOS	Delay[4]	LOS	Delay[4]	Delay Var	LOS	Delay[4]	Delay Var
2	MacArthur Drive & I-205 EB Ramps	D	Caltrans	Signal	C	28.0	**E**	**59.8**				D	52.7	-7.1
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	**E**	**77.1**	**F**	**91.8**	**E**	**66.7**	**-10.4**	**F**	**86.5**	**-5.3**

Note: Intersections that are operating below acceptable levels are shown in BOLD.
1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy and Caltrans intersections is LOS D.
4. Delay indicated in seconds/vehicle. Average control delay is reported for signalized intersections.

Table 8 – Existing Plus Background (without Tracy Alliance) Plus Project Conditions Level of Service (With Improvements)

#	Intersection[1]	LOS Standard	Jurisdiction[2]	Control Type[3]	Existing + Background (w/o Alliance) + Project Conditions				Existing + Background (w/o Alliance) + Project Conditions w/Improvements					
					AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour		
					LOS	Delay[4]	LOS	Delay[4]	LOS	Delay[4]	Delay Var	LOS	Delay[4]	Delay Var
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	**E**	**66.7**	**F**	**86.5**	C	32.0	-34.7	**E**	**55.4[5]**	**-31.1**

Note: Intersections that are operating below acceptable levels are shown in BOLD.
1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy and Caltrans intersections is LOS D.
4. Delay indicated in seconds/vehicle. Average control delay is reported for signalized intersections.
5. Although the intersection is LOS E and below standard, the delay is 7.8 seconds below pre-Project conditions.

6. Cumulative Conditions

In the Cumulative (2035) Conditions, the following intersection and roadway improvements were identified that would affect the study area:

- #1 – MacArthur Drive / I-205 WB Ramps – Add a second northbound left turn
- #2 – MacArthur Drive / I-205 EB Ramps – Add a second northbound though and southbound through lane
- #4 – N MacArthur Drive / Eleventh Street –
    - The southbound approach will be reconfigured to one left turn, one through, and one shared through/right turn lane and a westbound left turn will be constructed.
    - In addition, S MacArthur Drive will be realigned to connect to N MacArthur Drive as the south leg of the intersection. As a result, the northbound approach will be reconstructed to one left turn, one through, and one shared through/right turn lane
- #6 – Chrisman Road / Grant Line Road – The northbound approach will be reconfigured to one left, two throughs, and one right-turn lane. The southbound approach will be reconfigured to one left, two throughs, and one right-turn. A second eastbound left turn will be constructed and one westbound through lane will be reconfigured to be a second westbound left turn lane.
- #7 – Chrisman Road / Paradise Road – This intersection will be converted from an AWSC to a signalized intersection. The northbound approach will be reconfigured to one left turn, two throughs, and one shared through/right-turn. The southbound approach will be reconfigured to one left, three throughs, and one right-turn lane.
- #8 – Chrisman Road / Eleventh Street – The northbound and southbound approach will be reconfigured to one left, two throughs, and one right-turn lane and an additional eastbound left turn will be constructed.
- #9 – Paradise Road/Chrisman Road & I-205 WB Ramps – A new interchange will be constructed at Chrisman Road and I-205 WB Ramps with the following configuration:
    - Northbound Approach – two through lanes and one shared through/right turn lane
    - Southbound Approach – two through lanes and one shared through/right turn lane
    - Westbound Approach – two left turn lanes, one shared through/right turn lane, and one right turn lane
- #10 – Paradise Road/Chrisman Road & I-205 EB Ramps – A new interchange will be constructed at Chrisman Road and I-205 EB Ramps with the following configuration:
    - Northbound Approach – three through lanes and two right turn lanes
    - Southbound Approach – two through lanes and one shared through/right turn lane
    - Eastbound Approach – two left turn lanes and two right turn lanes

Cumulative Conditions traffic control and lane geometry is shown in **Figure 12**.

Cumulative (2035) turning movement volumes were derived from the City of Tracy TMP. Cumulative AM and PM peak hour turning movement volumes are shown in **Figure 13**.

Cumulative Conditions traffic operations were evaluated at the study intersections and the results are presented in **Table 9**. All study intersections function within acceptable LOS standards under this analysis scenario, except for the following intersections:

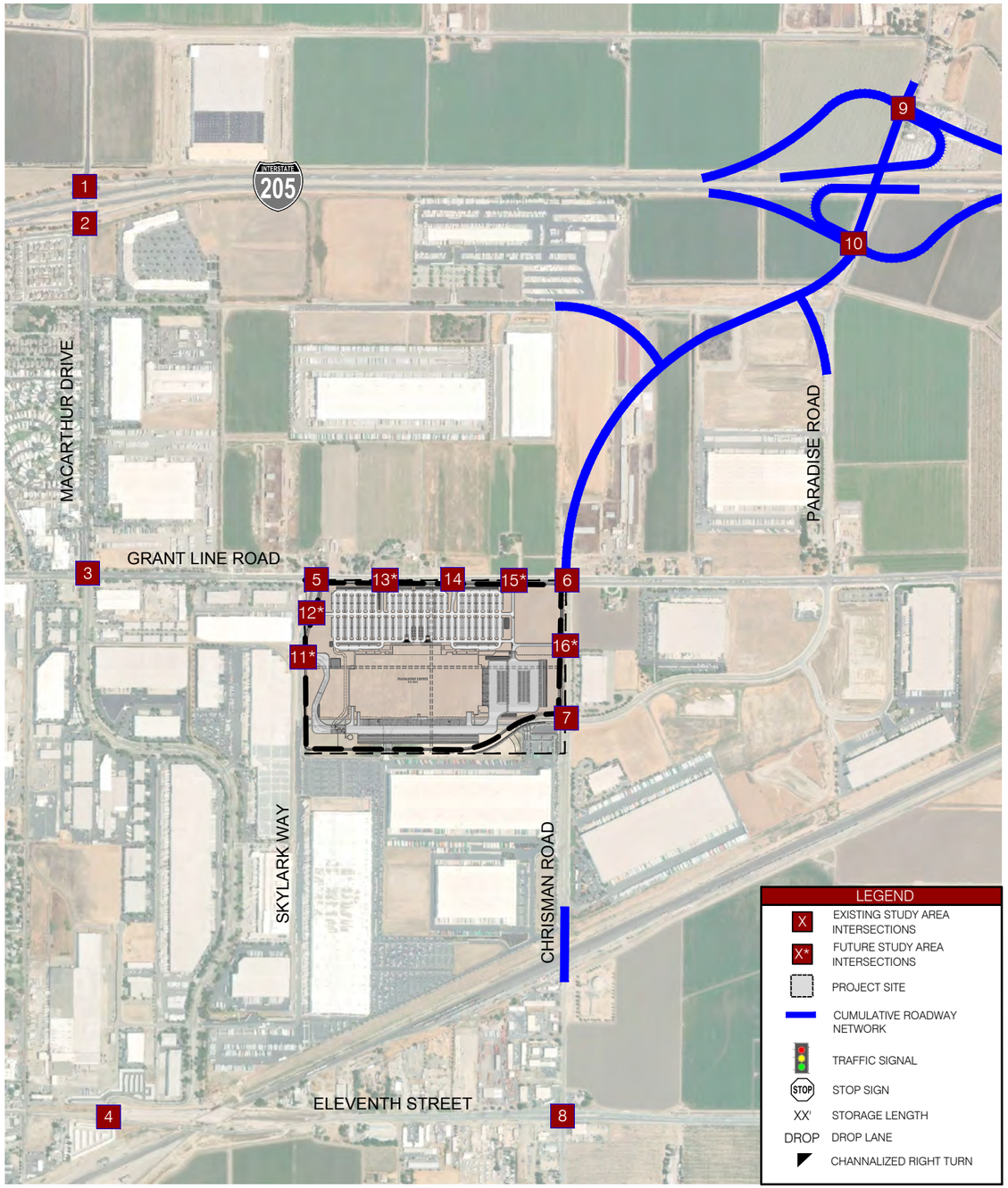
- #8 – Chrisman Road / Eleventh Street (PM Peak Hour)

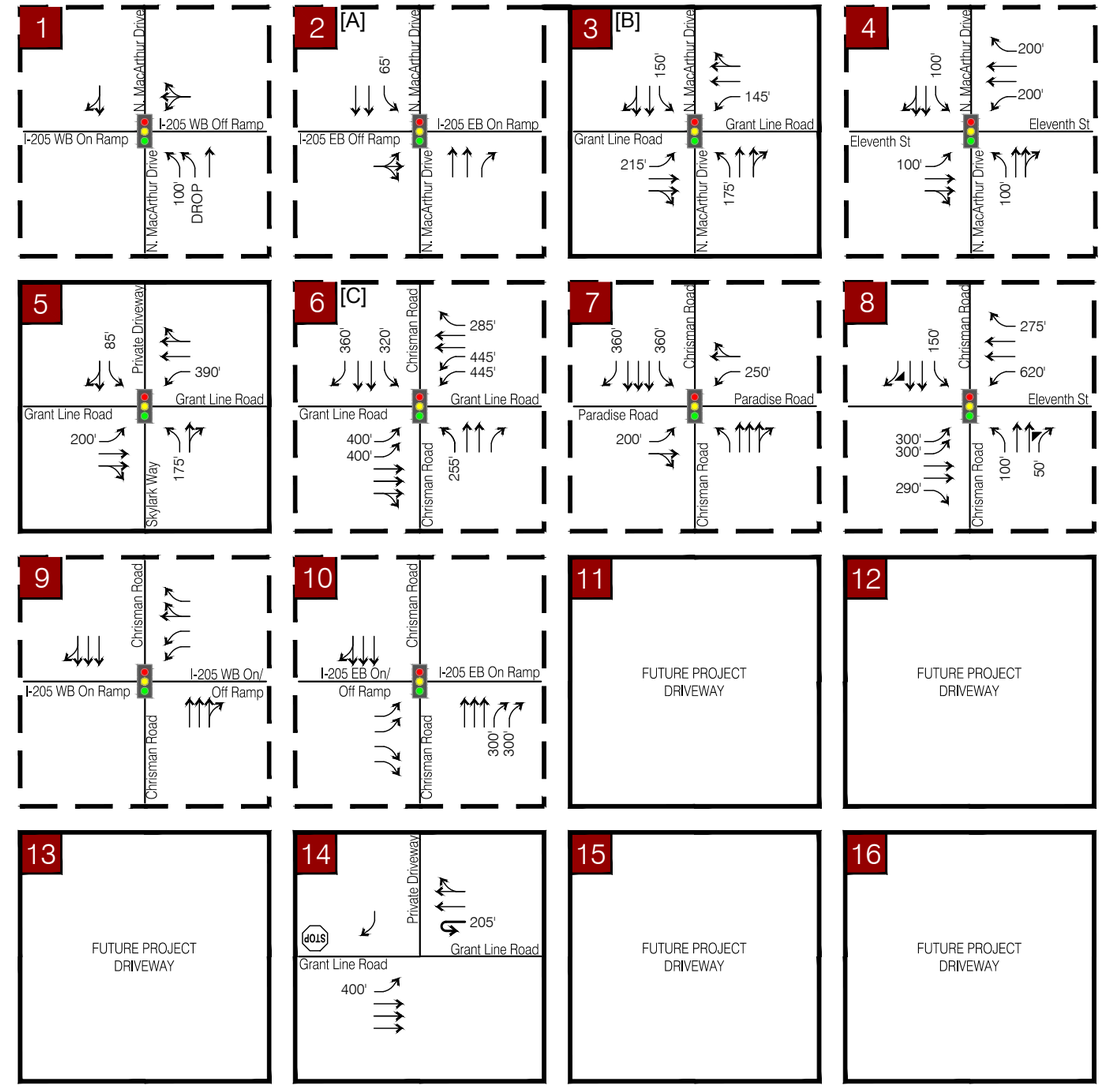
Analysis sheets are provided in the **Appendix**.

Table 9 – Cumulative Conditions Level of Service

#	Intersection	LOS Standard	Jurisdiction	Control Type	Cumulative Conditions			
					AM Peak Hour		PM Peak Hour	
					LOS	Delay	LOS	Delay
1	MacArthur Drive & I-205 WB Ramps	C	Caltrans	Signal	B	12.1	B	16.7
2	MacArthur Drive & I-205 EB Ramps	C	Caltrans	Signal	B	12.2	B	14.1
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	C	24.7	D	36.2
4	MacArthur Drive & Eleventh Street	D	Tracy	Signal	C	28.3	D	41.8
5	Skylark Way & Grant Line Road	D	Tracy	Signal	B	10.2	C	34.0
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	C	22.4	D	47.7
7	Chrisman Road & Paradise Road	D	Tracy	Signal	B	12.9	B	13.2
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	52.5	**E**	**56.7**
9	Chrisman Rd & I-205 WB Ramps	C	Caltrans	Signal	A	5.6	A	3.9
10	Chrisman Rd & I-205 EB Ramps	C	Caltrans	Signal	A	6.0	B	13.8
11	Driveway #1 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
12	Driveway #2 & Skylark Way	D	Tracy	-	Future Project Driveway			
	Worst Approach							
13	Driveway #3 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
14	Driveway #4 & Grant Line Road	D	Tracy	SSSC	A	0.2	A	0.1
	Worst Approach (SB)				B	10.1	B	10.2
15	Driveway #5 & Grant Line Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							
16	Driveway #6 & Chrisman Road	D	Tracy	-	Future Project Driveway			
	Worst Approach							

Note: Intersections that are operating below acceptable levels are shown in **BOLD**.
1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy intersections is LOS D and for Caltrans intersections is LOS C.
3. SSSC - Side Street Stop Control and AWSC – All-Way Stop Control.
4. Delay indicated in seconds/vehicle. In addition to average control delay, which is reported for signalized, AWSC, and SSSC intersections, the delay for the worst movement is also reported for SSSC intersections.





[A]The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[B]The northbound (NB), southbound (SB), eastbound (EB), and westbound (WB) movement is analyzed as one left turn, two through, and one right turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure..

[C]The eastbound (EB) approach is analyzed as two EBL, three EBT, and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

Note: Dashed intersection boxes reflect changed conditions from Background Conditions.

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FIGURE 12
CUMULATIVE LANE GEOMETRY AND TRAFFIC CONTROL

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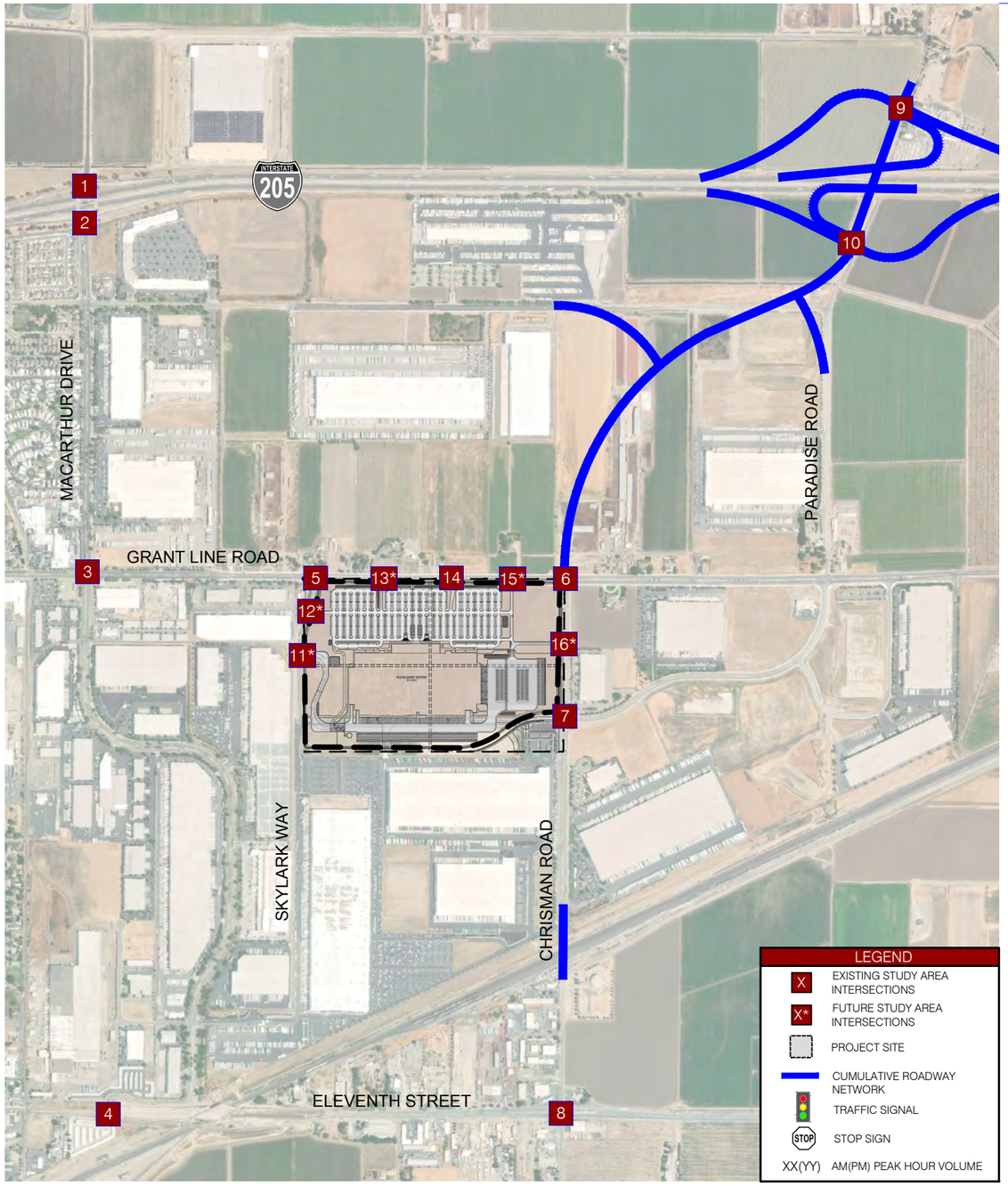

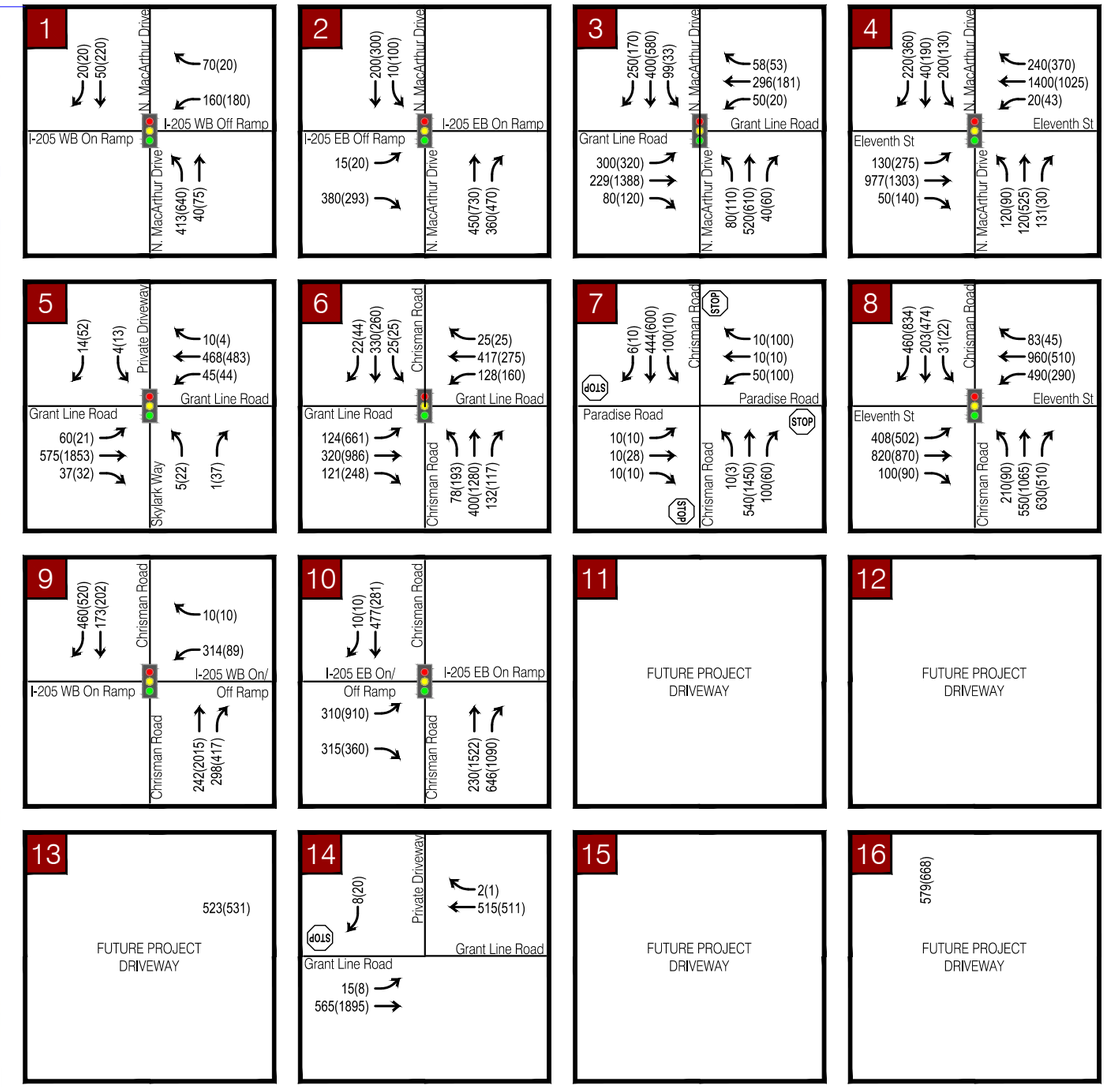

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FIGURE 13

CUMULATIVE PEAK HOUR TURNING MOVEMENT VOLUMES

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7. Cumulative Plus Project Conditions

Under Cumulative Plus Project Conditions, the proposed project will install a signal at Intersection #14 (Grant Line Road and Driveway #4). Cumulative Plus Project traffic control and lane geometry is shown in **Figure 14**.

7.1 Trip Distribution and Assignment

With the proposed roadway and intersection lane geometry improvements under Cumulative Conditions, a different trip distribution for the proposed project was developed for passenger cars and trucks. For passenger cars, it is estimated that there will be a 66 percent distribution going to and from west of the project site and 34 percent going to and from east of the project site. For trucks, it is assumed that there will be a 33.33 percent distribution going to and from west of the project site and a 66.67 percent distribution going to and from east and south of the project site.

Figure 15 illustrates the trip distribution assumed for Cumulative Plus Project analysis. **Figure 16** and **Figure 17** illustrates the trip assignment for Cumulative Plus Project Conditions for passenger cars and trucks, respectively. Cumulative Plus Project AM and PM peak hour turning movement volumes are shown in **Figure 18**.

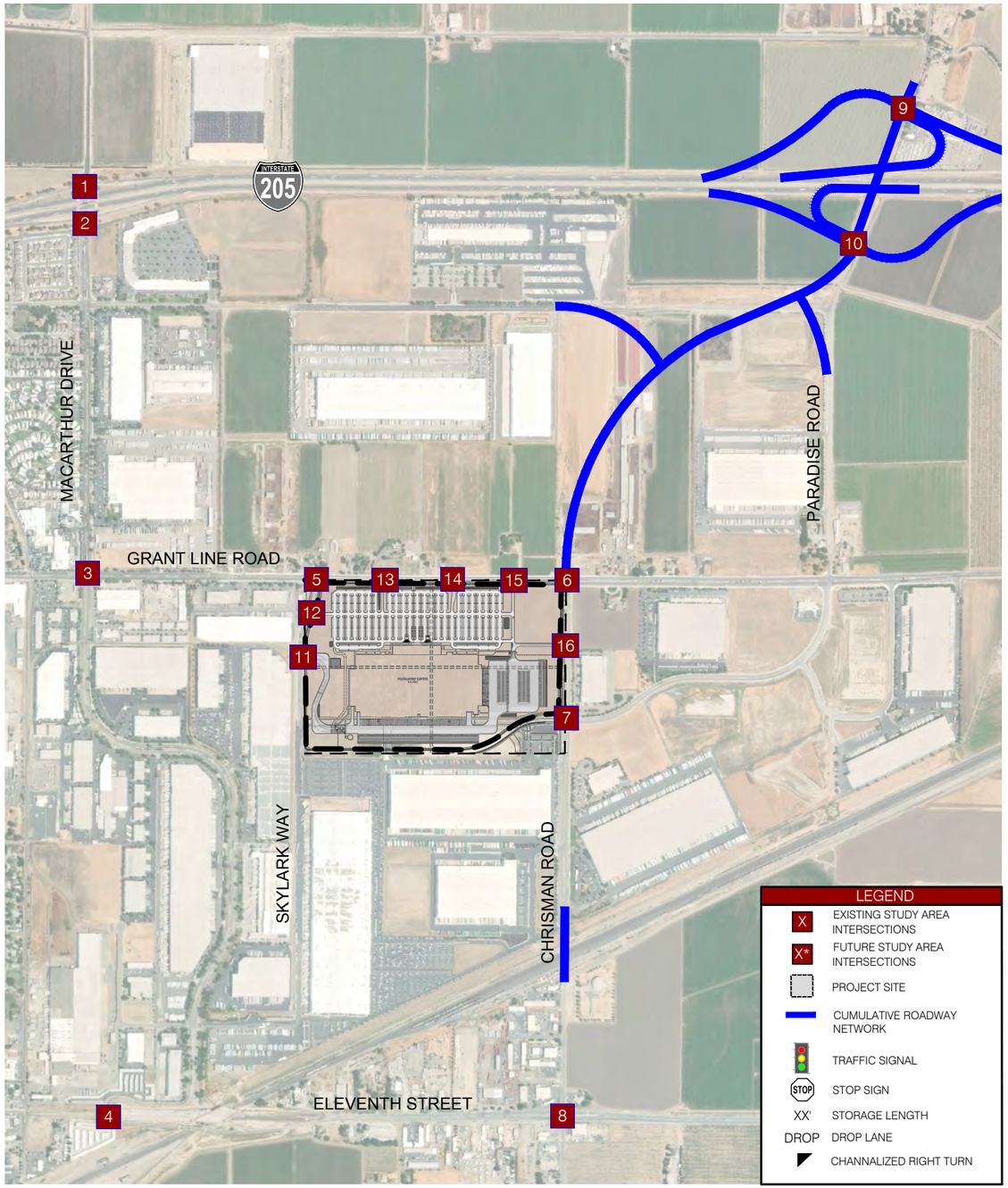
7.2 Intersection Level of Service

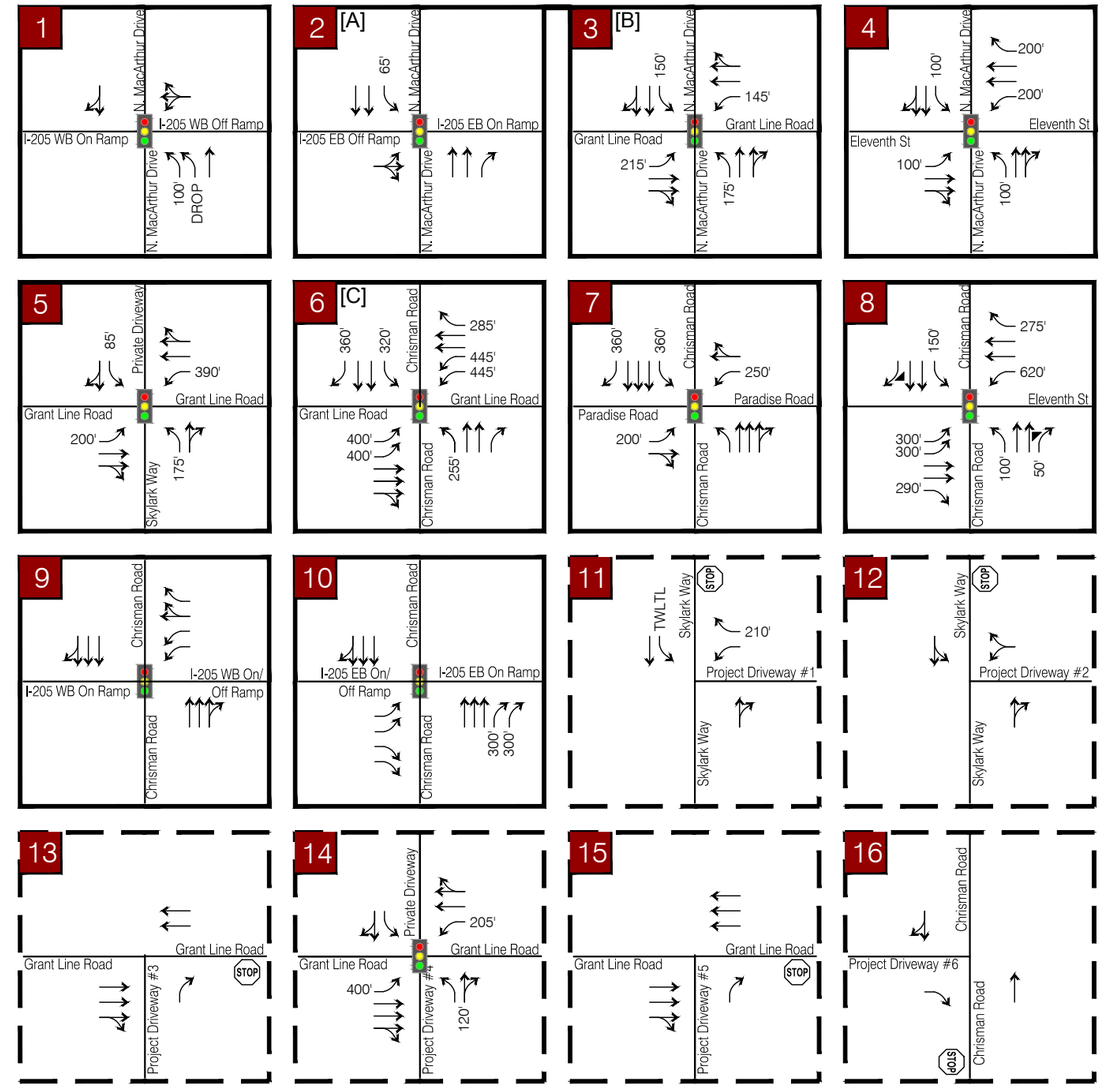
Under Cumulative Plus Project Conditions, the proposed project will install a signal at Intersection #14 (Grant Line Road and Driveway #4).

Cumulative Plus Project Conditions traffic operations were evaluated at the study intersections and the results are presented in **Table 10.** All study intersections function within acceptable LOS standards under this analysis scenario, except for the following intersection:

- #3 – MacArthur Drive / Grant Line Road (AM and PM Peak Hours) – Intersection operating at an acceptable LOS C and D in the AM and PM peak hour, respectively and degrades to an unacceptable LOS E with the project – **Deficiency**
- #5 – Skylark Way & Grant Line Road (PM Peak Hour) – Intersection operating at an acceptable LOS C without the project and degrades to an unacceptable LOS F with the project – **Deficiency**
- #6 – Chrisman Road & Grant Line Road (PM Peak Hour) – Intersection operating at an acceptable LOS D without the project and degrades to an unacceptable LOS E with the project – **Deficiency**
- #8 – Chrisman Road & Eleventh Street (AM and PM Peak Hours) – Intersection operating at an acceptable LOS D and degrades to an unacceptable LOS E in the AM peak hour. In the PM peak hour, intersection is operating at an unacceptable LOS E without the project, and the project increases the average delay of more than four (4) seconds – **Deficiency**

Analysis sheets are provided in the **Appendix**.





[A] The eastbound (EB) approach is analyzed as one shared EBT/L and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

[B] The northbound (NB), southbound (SB), eastbound (EB), and westbound (WB) movement is analyzed as one left turn, two through, and one right turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure..

[C] The eastbound (EB) approach is analyzed as two EBL, three EBT, and one EBR turn lane for analysis purposes. However, the intersection lane geometry is striped as shown in this figure.

Note: Dashed intersection boxes reflect changed conditions from Background Conditions.

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FIGURE 14

CUMULATIVE PLUS PROJECT LANE GEOMETRY AND TRAFFIC CONTROL

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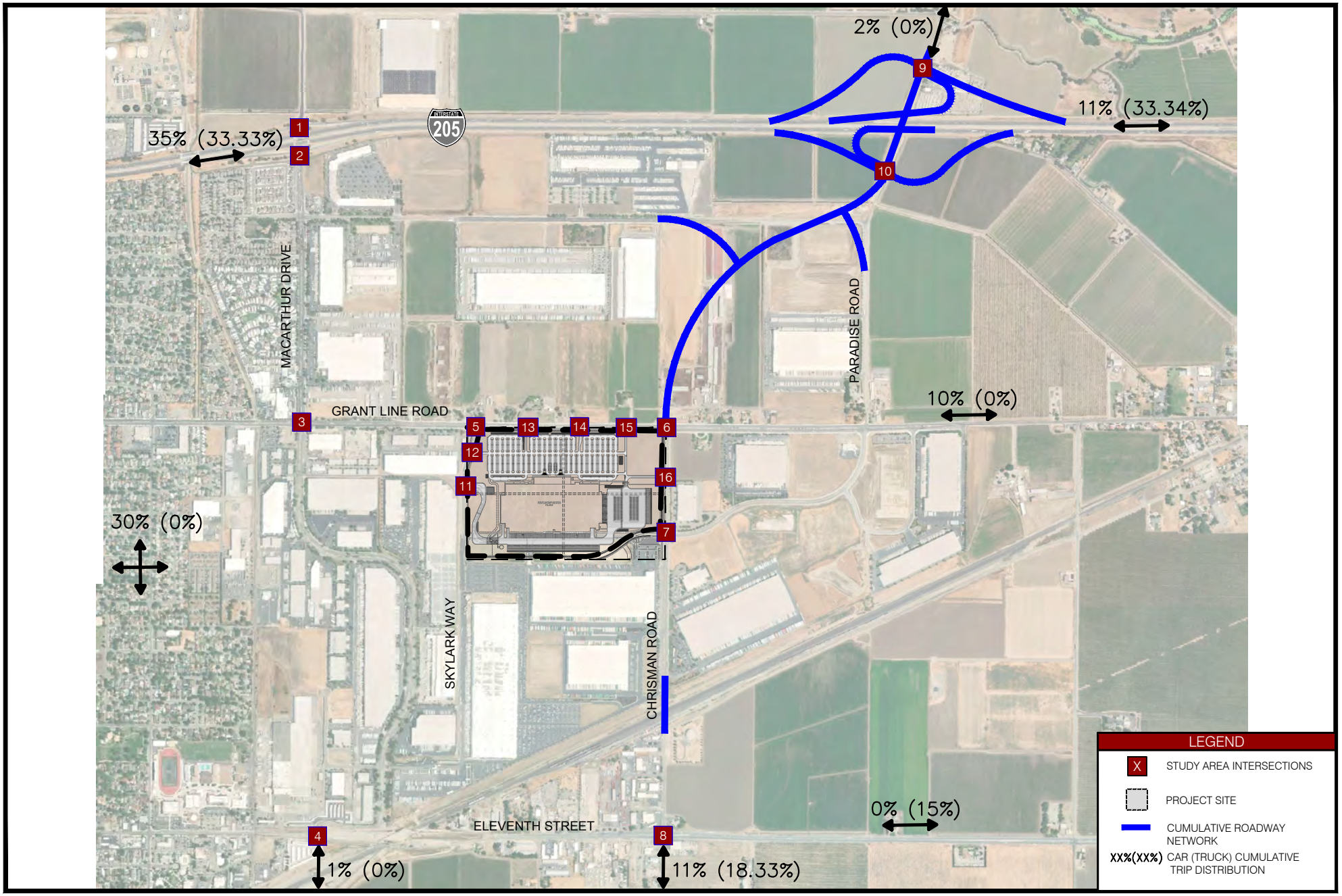

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FIGURE 15

CUMULATIVE TRIP DISTRIBUTION

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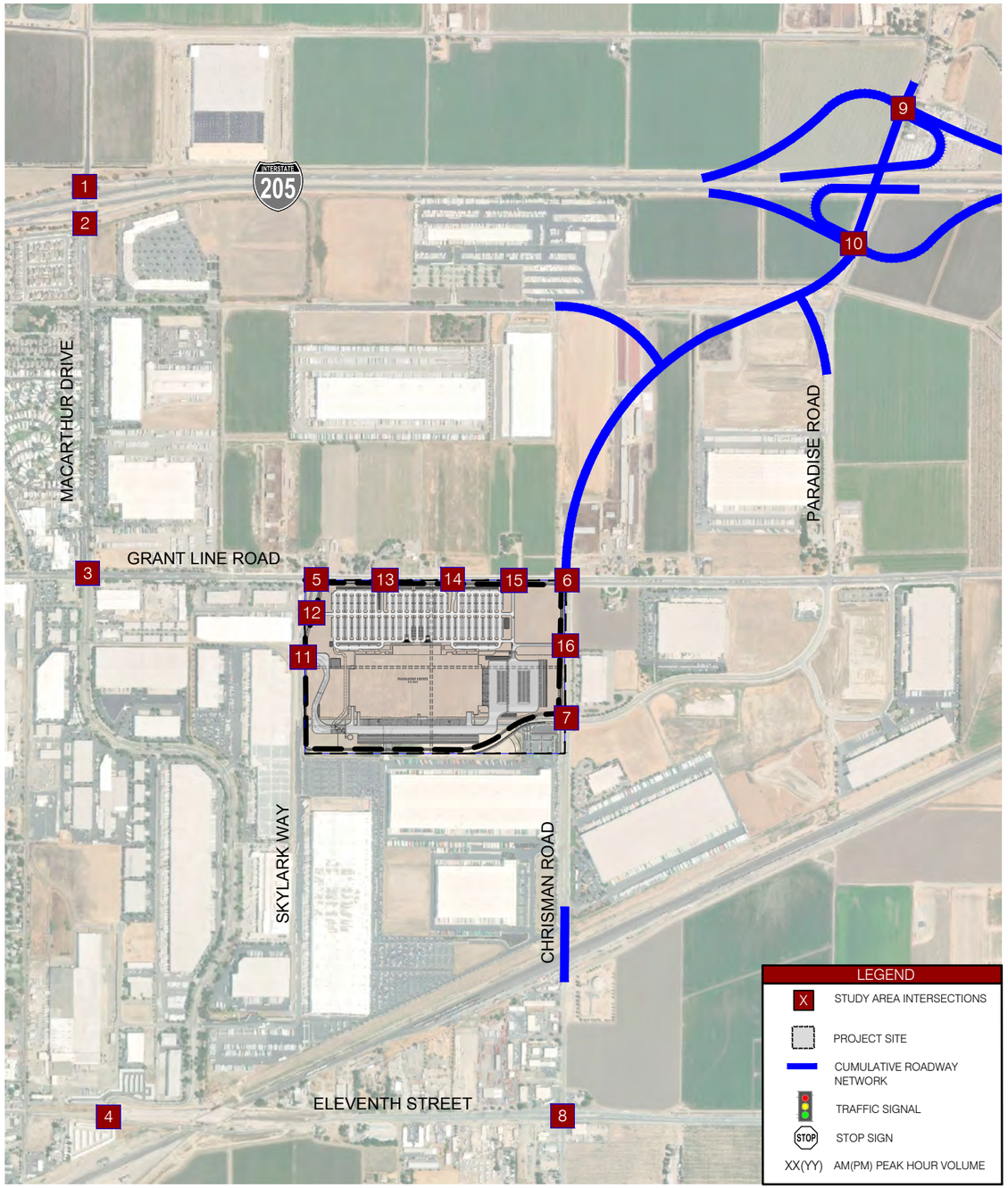

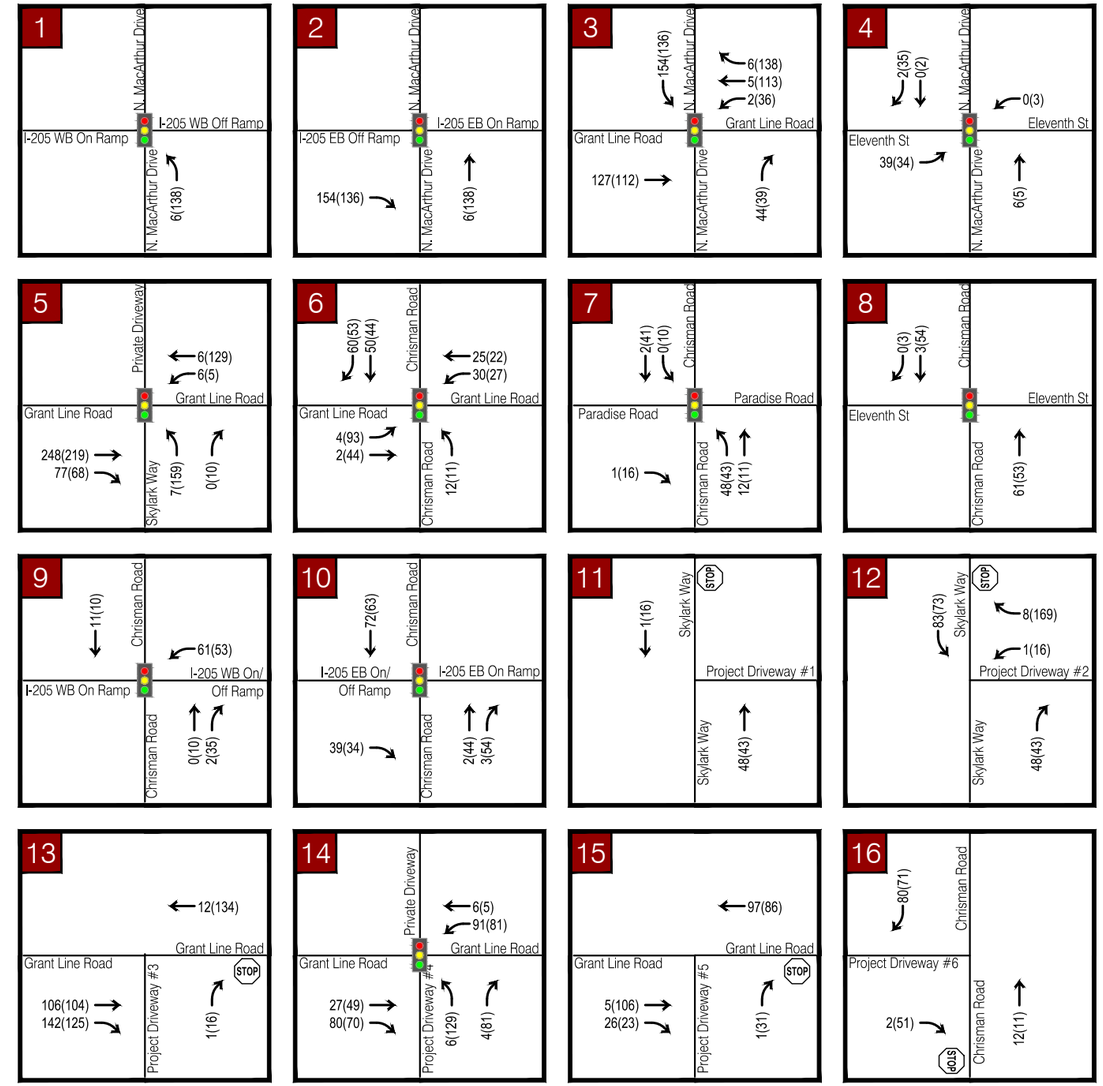

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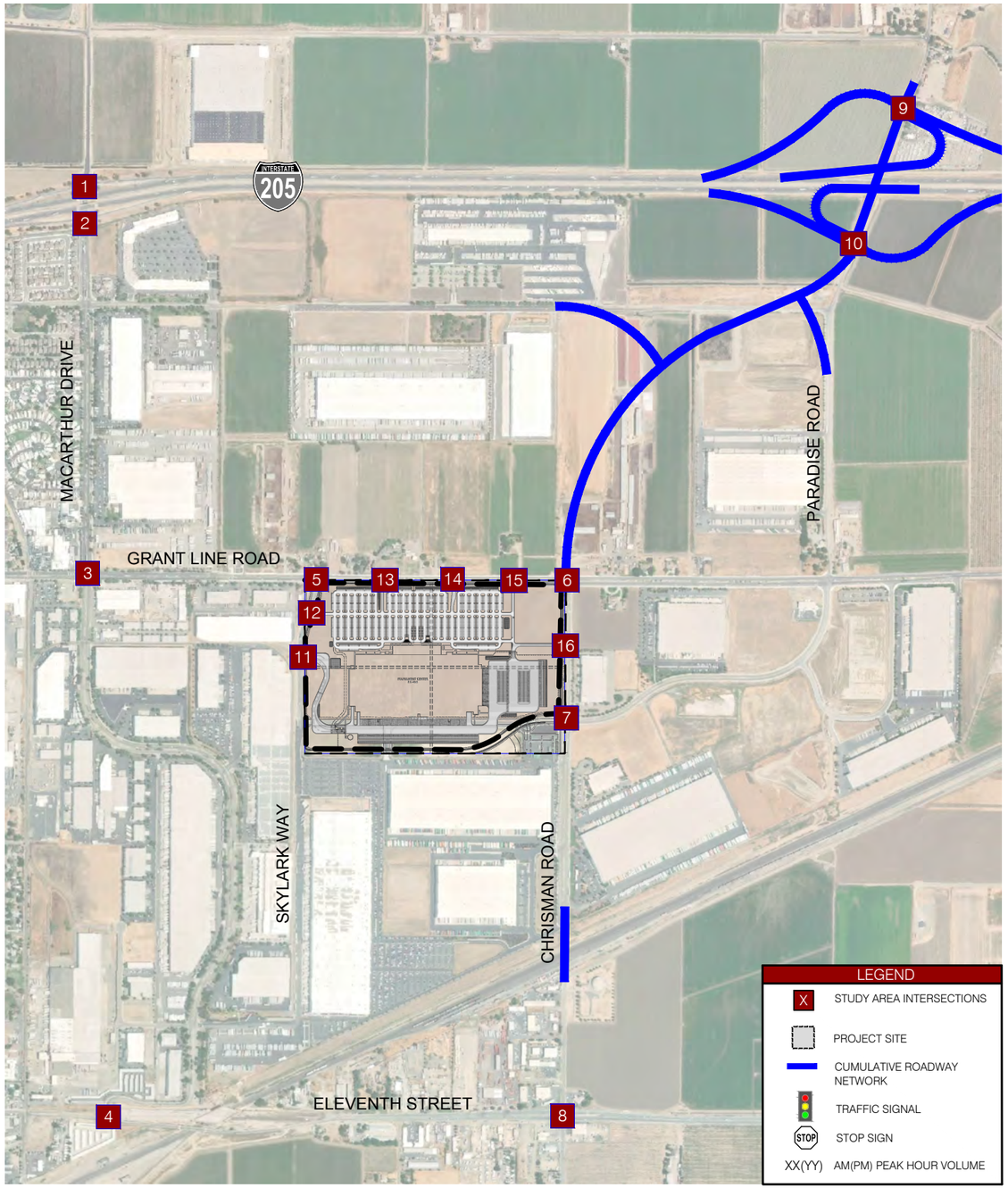
FIGURE 16

CUMULATIVE PROJECT GENERATED PEAK HOUR TURNING MOVEMENT VOLUMES (CAR)



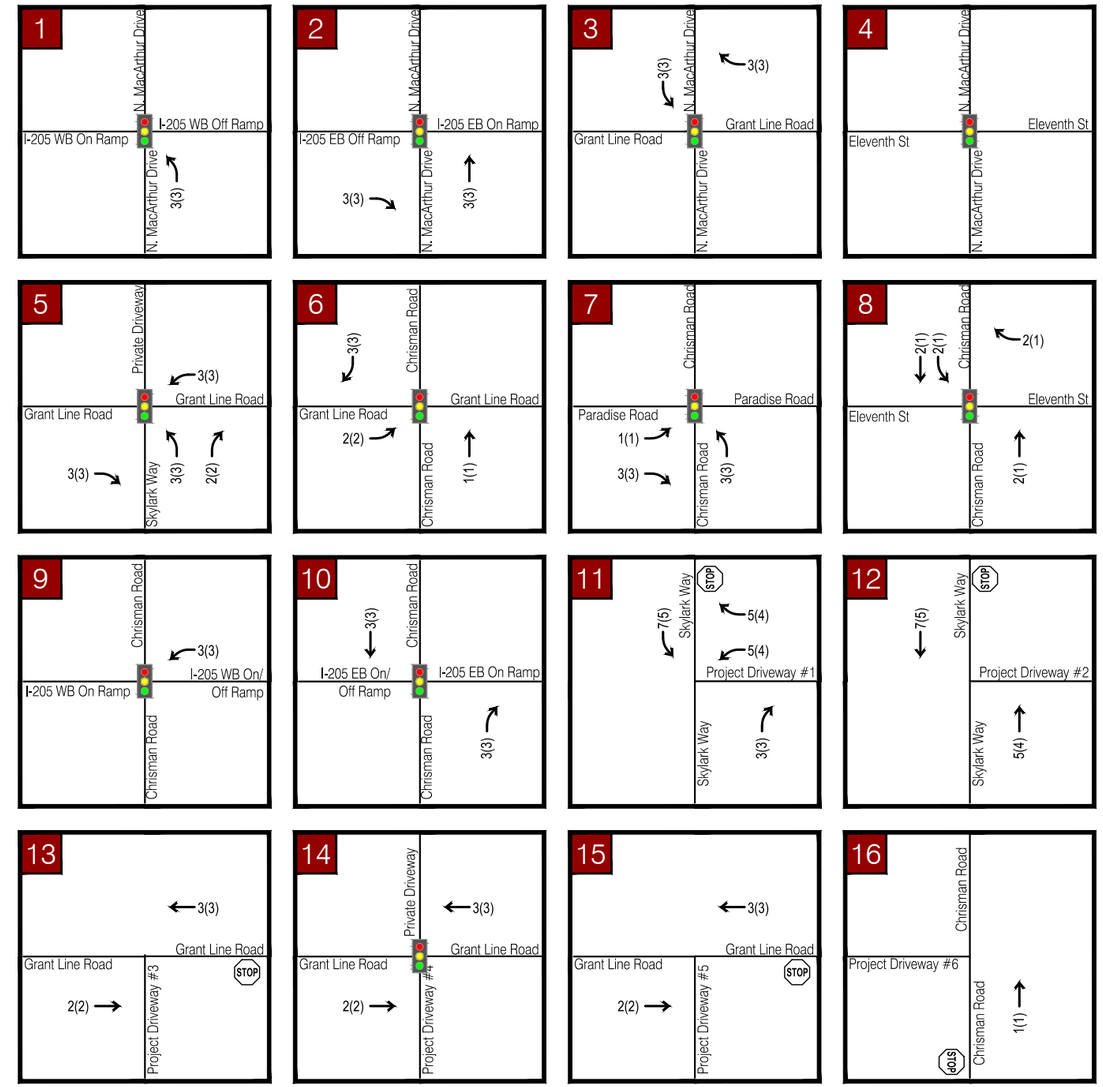


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FIGURE 17

CUMULATIVE PROJECT GENERATED PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCK)

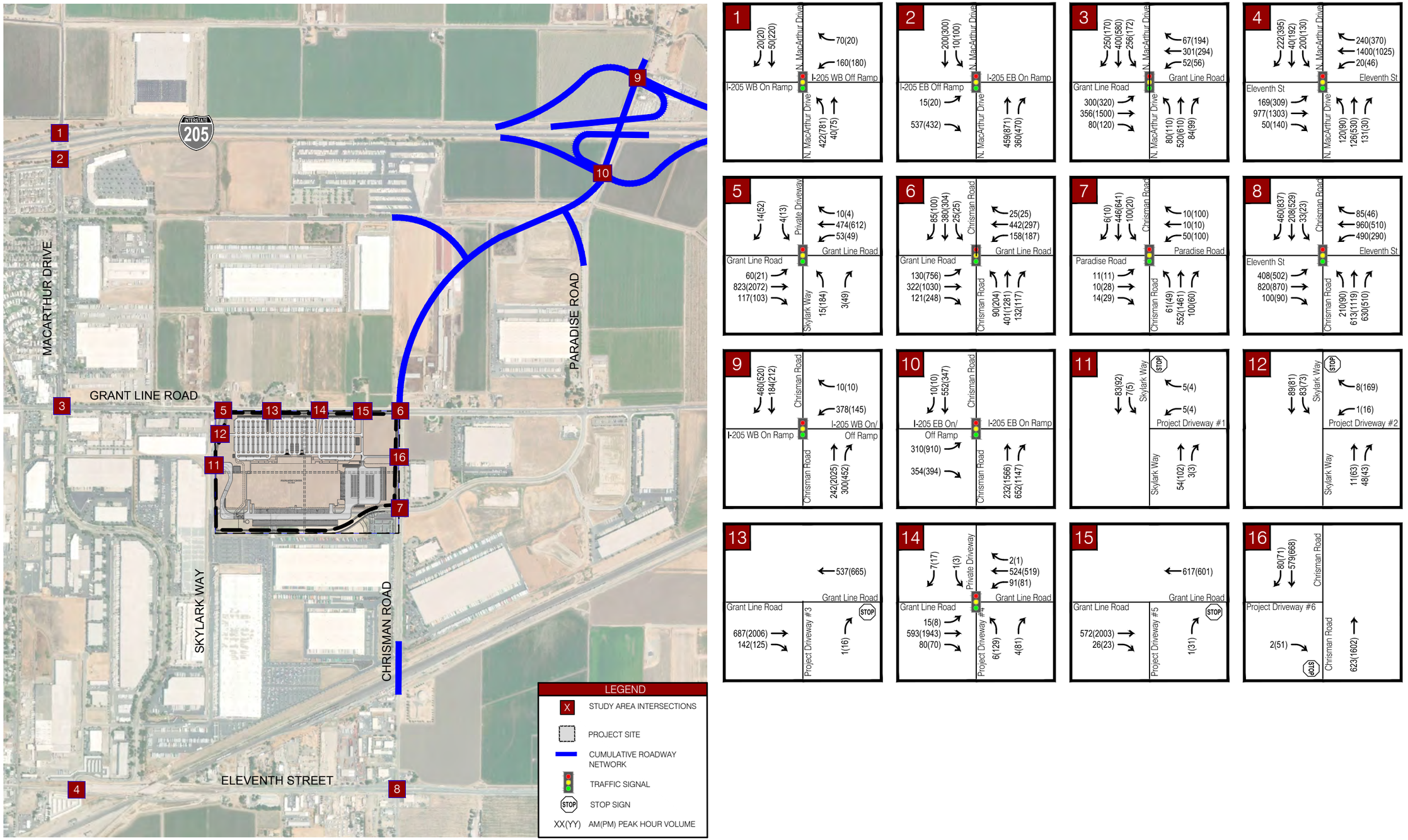

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FIGURE 18

CUMULATIVE PLUS PROJECT PEAK HOUR TURNING MOVEMENT VOLUMES

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Table 10 – Cumulative Plus Project Conditions Level of Service

#	Intersection[1]	LOS Standard	Jurisdiction	Control Type[3]	Cumulative Conditions				Cumulative + Project Conditions					
					AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour		
					LOS	Delay	LOS	Delay	LOS	Delay	Delay Var	LOS	Delay	Delay Var
1	MacArthur Drive & I-205 WB Ramps	C	Caltrans	Signal	B	12.1	B	16.7	B	12.2	0.1	C	20.3	3.6
2	MacArthur Drive & I-205 EB Ramps	C	Caltrans	Signal	B	12.2	B	14.1	C	22.2	10.0	C	23.2	9.1
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	C	24.7	D	36.2	**E**	**55.6**	**30.9**	**E**	**57.5**	**21.3**
4	MacArthur Drive & Eleventh Street	D	Tracy	Signal	C	28.3	D	41.8	C	31.3	3.0	D	53.3	11.5
5	Skylark Way & Grant Line Road	D	Tracy	Signal	B	10.2	C	34.0	B	11.4	1.2	**F**	**107.2**	**73.2**
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	C	22.4	D	47.7	C	23.3	0.9	**E**	**57.1**	**9.4**
7	Chrisman Road & Paradise Road	D	Tracy	Signal	B	12.9	B	13.2	B	14.2	1.3	B	15.0	1.8
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	52.5	**E**	**56.7**	**E**	**56.5**	**4.0**	**E**	**60.9**	**4.2**
9	Chrisman Rd & I-205 WB Ramps	C	Caltrans	-	A	5.6	A	3.9	A	6.1	0.5	A	4.7	0.8
10	Chrisman Rd & I-205 EB Ramps	C	Caltrans	-	A	6.0	B	13.8	A	6.2	0.2	B	15.6	1.8
11	Driveway #1 & Skylark Way	D	Tracy	-	Future Project Driveway				A	1.0	1.0	A	0.6	0.6
	Worst Approach								B	10.2	10.2	B	10.5	10.5
12	Driveway #2 & Skylark Way	D	Tracy	-	Future Project Driveway				A	2.9	2.9	A	5.3	5.3
	Worst Approach								A	8.7	8.7	A	9.8	9.8
13	Driveway #3 & Grant Line Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.1	0.1
	Worst Approach								B	12.2	12.2	D	26.2	26.2
14	Driveway #4 & Grant Line Road	D	Tracy	SSSC/ Signal	A	0.2	A	0.1	B	14.5	4.4	C	21.0	10.8
	Worst Approach (SB)				B	10.1	B	10.2						
15	Driveway #5 & Grant Line Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.3	0.3
	Worst Approach								B	11.1	11.1	D	26.0	26.0
16	Driveway #6 & Chrisman Road	D	Tracy	-	Future Project Driveway				A	0.0	0.0	A	0.3	0.3
	Worst Approach								B	11.4	11.4	B	12.5	12.5

Note: Intersections that are operating below acceptable levels are shown in BOLD.
1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy intersections is LOS D and for Caltrans intersections is LOS C.
3. SSSC - Side Street Stop Control and AWSC – All-Way Stop Control.
4. Delay indicated in seconds/vehicle. In addition to average control delay, which is reported for signalized, AWSC, and SSSC intersections, the delay for the worst movement is also reported for SSSC intersections.
5. Intersection #14 will be a SSSC in Cumulative Conditions and will be signalized in Cumulative Plus Project Conditions

7.3 Cumulative Plus Project Recommended Improvements

The following improvements are recommended at the deficient intersections under Cumulative Plus Project Conditions:

- #3 – MacArthur Drive / Grant Line Road – It is recommended to optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS C and LOS D in the AM and PM peak hour, respectively.
- #5 – Skylark Way & Grant Line Road – It is recommended to optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS D in the PM peak hour.
- #6 – Chrisman Road & Grant Line Road – It is recommended to optimize the cycle length at this intersection. With the improvement, the intersection will operate at an acceptable LOS D in the PM peak hour.
- #8 – Chrisman Road & Eleventh Street – It is recommended that an additional second westbound left turn lane be constructed and the signal timing be modified to allow lagging phase for the eastbound left turn and northbound left turn. With the improvement, the intersection will operate at an acceptable LOS D in the AM and PM peak hours.

A summary of the traffic operations with the improvements are provided in **Table 11**.

Analysis sheets are provided in the **Appendix**.

Table 11 – Cumulative Plus Project Conditions Level of Service (With Improvements)

#	Intersection	LOS Standard	Jurisdiction	Control Type	Cumulative Conditions				Cumulative + Project Conditions					
					AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour		
					LOS	Delay	LOS	Delay	LOS	Delay	Delay Var	LOS	Delay	Delay Var
3	MacArthur Drive & Grant Line Road	D	Tracy	Signal	C	24.7	D	36.2	C	30.7	6.0	D	48.0	11.8
5	Skylark Way & Grant Line Road	D	Tracy	Signal	B	10.2	C	34.0				D	51.6	17.6
6	Chrisman Road & Grant Line Road	D	Tracy	Signal	C	22.4	D	47.7				D	49.8	2.1
8	Chrisman Road & Eleventh Street	D	Tracy	Signal	D	52.5	**E**	**56.7**	D	40.9	-11.6	D	45.1	-11.6

Note: Intersections that are operating below acceptable levels are shown in BOLD.

1. Analysis performed using HCM 6th edition methodology.
2. Overall level of service (LOS) standard for City of Tracy intersections is LOS D and for Caltrans intersections is LOS C.
4. Delay indicated in seconds/vehicle. Average control delay is reported for signalized intersections.

8. Fair Share Analysis

Fair share improvement contributions were reviewed at the following intersections:

- MacArthur Drive / Grant Line Road (Intersection #3): Background Plus Project Conditions - add westbound right turn pocket, **44.64%**
- Chrisman Road / Paradise Road (Intersection #7): Cumulative Conditions – add signal, **8.99%**
- Chrisman Road / Eleventh Street (Intersection #8): Cumulative Conditions – add 2nd westbound left turn lane, **3.29%**
- Grant Line Road / Project Driveway #4 (Intersection #14) – Background Plus Project Conditions signal, **Project to pay remainder of cost after FEMA Distribution Center payment**

9. NEI Truck Route Study

A STAA truck route study was conducted for the NEI Specific Plan area as part of the Seefried Project, shown in **Figure 19**. An NEI Truck Route Map, which defines STAA truck routing, indicates the existing and interim truck routes. Truck routes from the City of Tracy Transportation Master Plan (TMP) and the interim routes & proposed signage are shown in **Figure 20,** while the ultimate routes and proposed signage are shown in **Figure 21**. The interim truck routes (excluding the Chrisman Road interchange) would provide access to the primarily existing truck routes and the Chrisman road extension to Paradise Road, and the ultimate truck routes would provide access to the future interchange. For site access and improvement at all intersections and on the roadways, the design shall include turning radii that accommodate STAA trucks. See **Appendix B1. NEI Truck Route Study Turning Templates** for STAA truck turning templates.

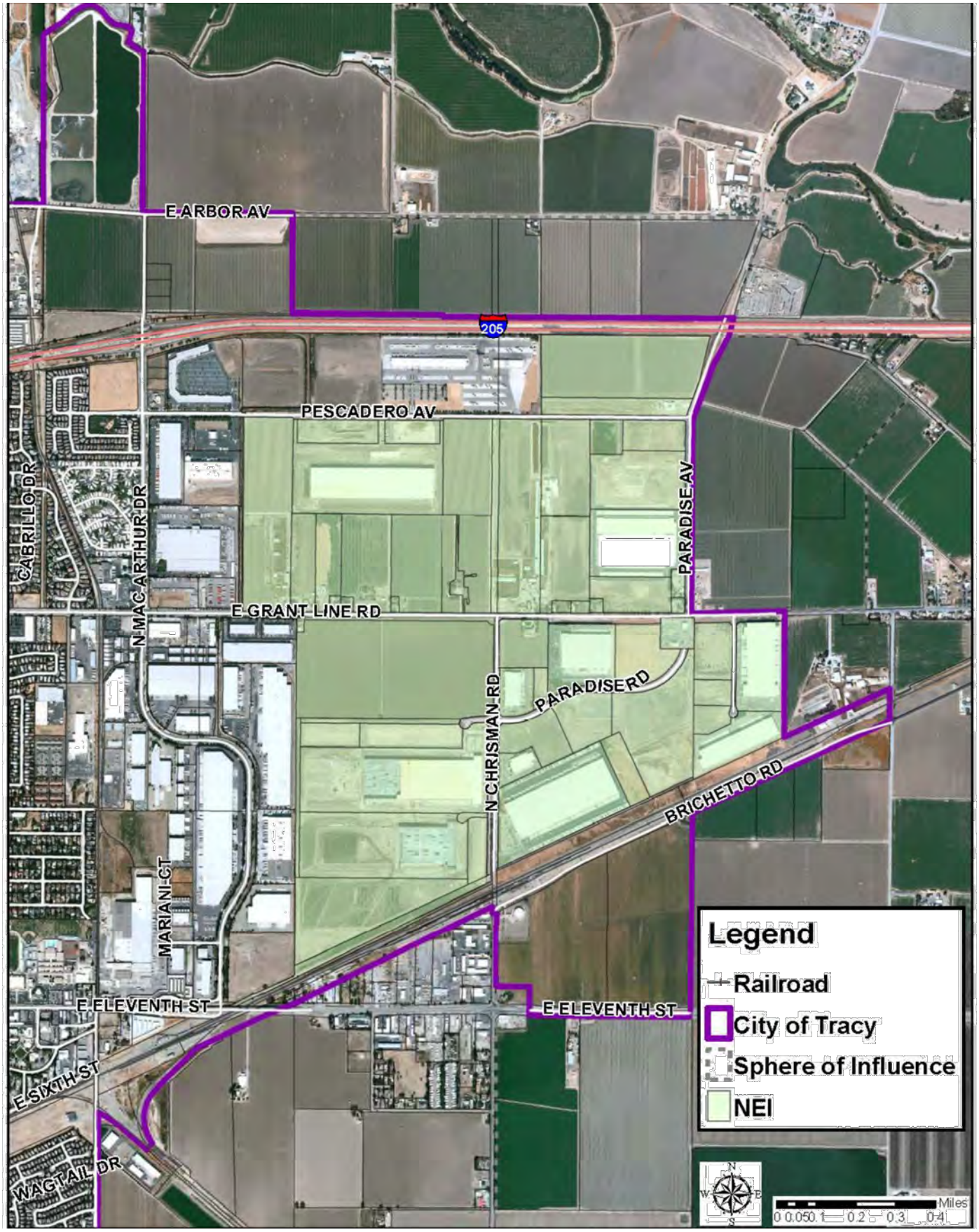

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FIGURE 19
NEI SPECIFIC PLAN MAP

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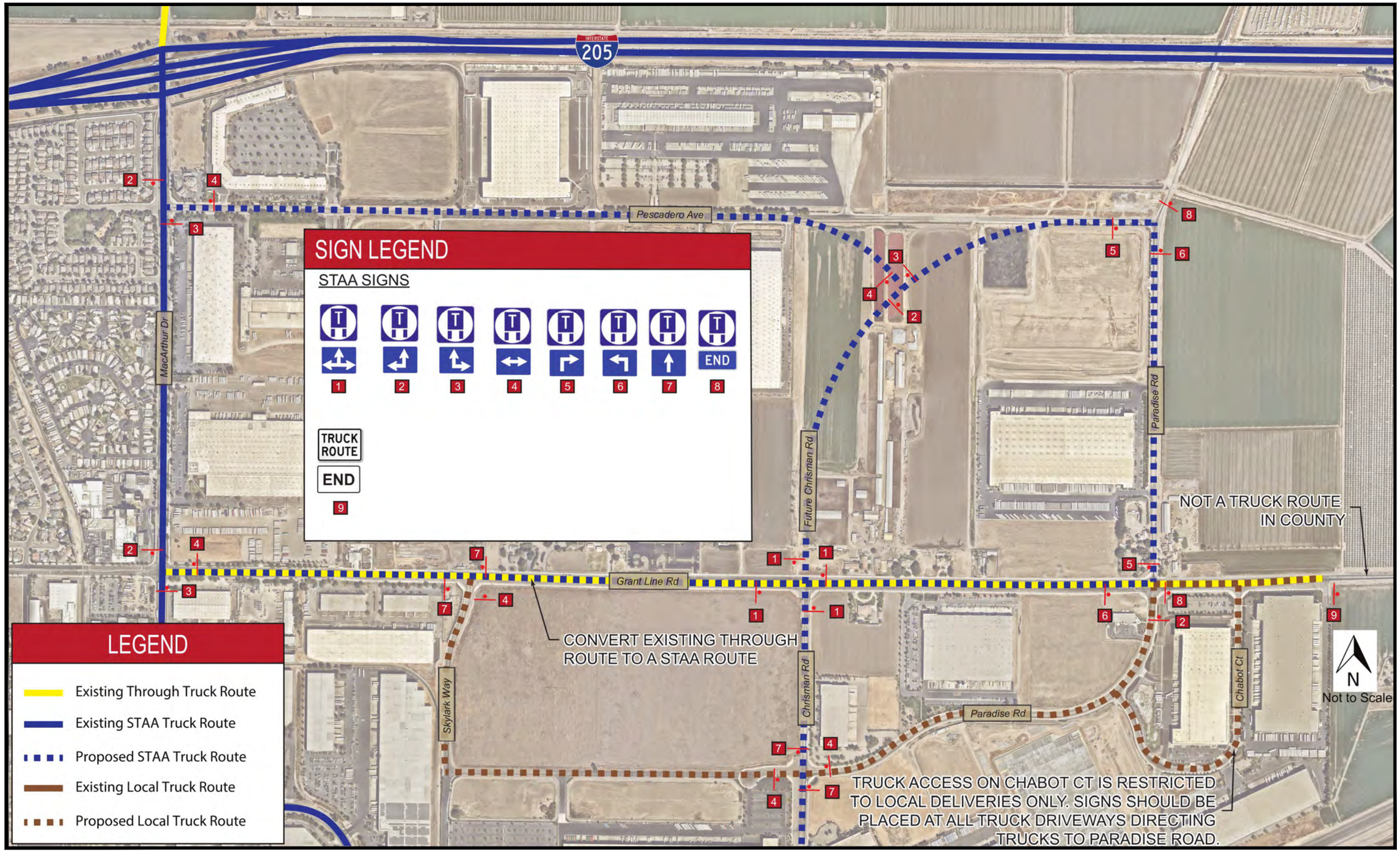

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FIGURE 20
INTERIM NEI TRUCK ROUTE MAP

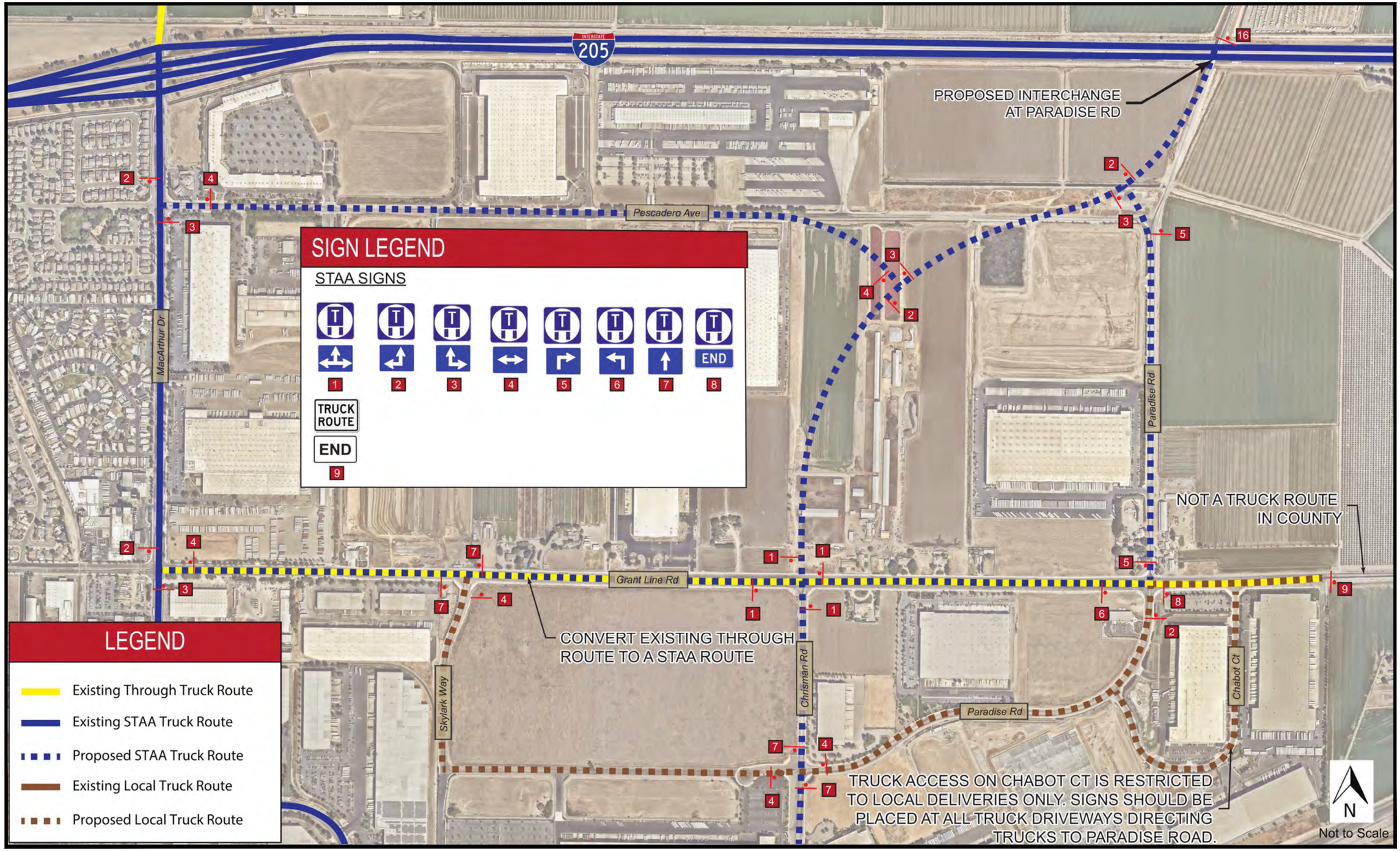

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FIGURE 21
ULTIMATE NEI TRUCK ROUTE MAP

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10. NEI SP Overall Trip Generation Consistency Review

A trip generation analysis was conducted to compare the existing, existing plus Project and future trip generation of the most recent development and vacant land in the NEI Specific Plan area to the previously prepared NEI EIR trip generation estimates.

10.1 NEI Specific Plan Trip Generation

NEI Specific Plan Development Status

Figure 22 maps the current development status of the NEI Specific Plan area. **Table 12** provides the current NEI development status in gross acres organized by transportation analysis zone (TAZ), and **Table 13** provides the list of built, approved and pending projects within the NEI Specific Plan.

Figure 22 – Current NEI Specific Plan Development Status

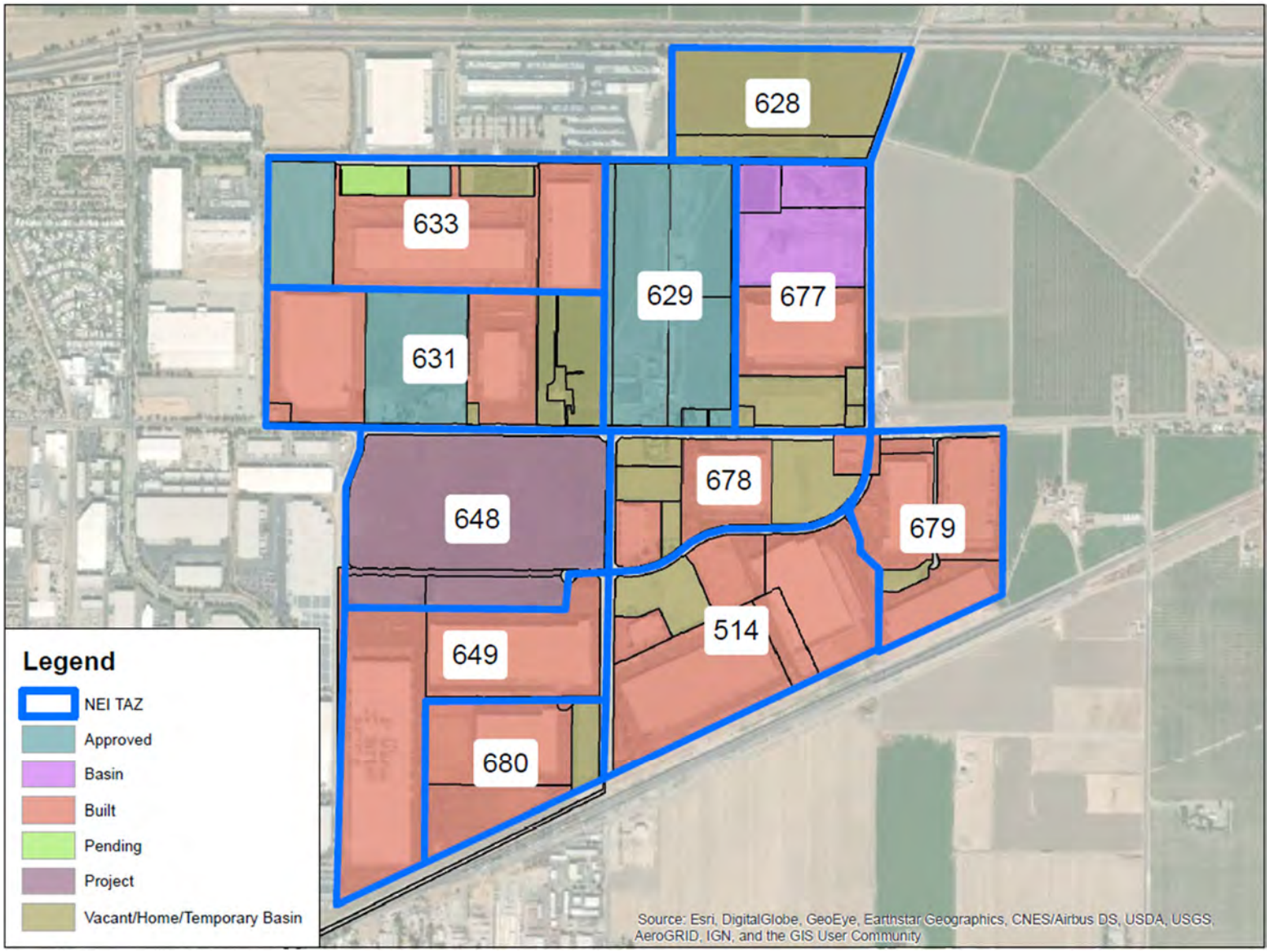


Table 12 – NEI Specific Plan Development Status per TAZ

TAZ	Project Type (Gross Acres)					
	Vacant	Basin	Built	Approved	Pending	Project
514	10.48	0	86.49	0	0	0
628	52.2	0	0	0	0	0
629	0	0	0	78.33	0	0
631	20.52	0	48.06	29.27	0	0
633	5.35	0	63.49	21.4	4.73	0
648	0	0	0	0	0	94.14
649	0	0	90.43	0	0	0
677	14.66	35.07	25.15	0	0	0
678	23.83	0	28.53	0	0	0
679	2.18	0	51.33	0	0	0
680	9.18	0	44.97	0	0	0
Total	138.4	35.07	438.45	129	4.73	94.14
Percentage of Specific Plan	17%	4%	52%	15%	1%	11%
Specific Plan Area (Gross Acres)[1]						845

Notes:

1. The total above excludes the existing or proposed roadways (25.9 acres).

Table 12 shows that NEI has currently developed 52% of available land with 15% more approved and 1% further pending approval. With inclusion of the future basin and the Project, NEI will have developed 83% of available land. Therefore, only 17% will remain either vacant or currently occupied by a single-family dwelling unit.

Table 13 – Built, Approved and Pending Projects

Type	Projects
Built	o Kellogg's o Katerra o Pacific Medical o FEMA o IPT 2 o Home Depot o Ridgeline o Crate & Barrel o Amazon Fulfillment Center o Animal Shelter o Barbosa Cabinets o Top Shelf o Bossard o BestBuy o SSA o WSID
Approved	o Seefried o IPT 4 o Central Plastics o Home Depot Parking
Pending	o Interstate Truck Center

10.2 Trip Generation Analysis

Trip generation for existing uses, planned uses (approved and pending), and vacant land were calculated. The floor area for all existing buildings was estimated by measuring the building footprint on an aerial. Site plans or traffic studies were available for approved and pending projects. Trip generation for built, approved and pending buildings was analyzed using TMP employment densities and peak hour trip rates and is shown in **Table 14.**

Table 14 – Employment and Trip Rate Assumptions

Type	Employment Density	AM Trip Rate per ksf	PM Trip Rate per ksf
High-cube Warehouse	1 employee per ksf	0.12	0.14
Warehouse	1 employee per ksf	0.17	0.33
Office	3 employees per ksf	0.66	1.26
NEI EIR	0.5 employee per ksf	0.16	0.16

Total trip generation for the NEI Specific Plan area with the Project is provided in **Table 15**. The built/approved/pending trip generation is 1,269 trips in the AM peak hour and 1,650 in the PM peak hour. The Project is anticipated to add 593 AM peak hour trips and 995 PM peak hour trips. With the addition of the Project trips, NEI trip generation remains well below the EIR buildout estimates.

Next, trip generation was estimated for the remaining undeveloped parcels using the NEI EIR assumptions for employment density and trip rates. The estimated future trip generation is 443 trips for both AM and PM peak hours. With the addition of the future trips to the built/approved/pending plus Project trips, the NEI trip generation remains below the EIR buildout estimates.

Therefore, the Project is consistent with NEI traffic circulation analysis assumptions.

Table 15 – Trip Generation with TMP Assumption

TAZ	Projects	Project Size		AM Peak Hour	PM Peak Hour
Built/Approved/Pending Projects					
514	Built – Kellogg's, Katerra, Pacific Medical	1,383	KSF	199	262
628	Vacant				
629	Approved - Seefried	1,028	KSF	124	144
631	Built - FEMA, IPT 2 Approved - IPT 4	1,415	KSF	247	276
633	Built - Home Depot, Ridgeline Approved - Central Plastics, Home Depot Parking Pending - Interstate Truck Center	1,133	KSF	134	180
648	Project				
649	Built - Crate & Barrel, Amazon Fulfillment Center	1,921	KSF	231	269
677	Built - Hollingsworth	537	KSF	91	177
678	Built - Animal Shelter, Barbosa Cabinets, Top Shelf	416	KSF	76	147
679	Built - Bossard, Best Buy, SSA	993	KSF	119	139
680	Crate & Barrel, WSID, Amazon Parking	400	KSF	48	56
	Built/Approved/Pending Subtotal			**1,269**	**1,650**
Project					
NEI Phase 3				593	995
Future Development[1]					
		2767	KSF	443	443
NEI EIR Trip Generation					
NEI EIR Trip Generation				3,000	5,241
Trip Generation Summary					
Built/Approved/Pending Net Total				**1,269**	**1,650**
Built/Approved/Pending + Project				**1,862**	**2,645**
Built/Approved/Pending + Project + Future				**2,305**	**3,088**
(Approved + Project) - NEI Trip Generation[2]				**-1,138**	**-2,596**
(Built/Approved/Pending + Project + Future) - NEI Trip Generation[2]				**-695**	**-2,153**

Notes:

1. It was also assumed that all current and future developments were industrial since no commercial land uses are shown in the City's *General Plan* (2011, 2016 update).

11. Appendix

A1. Turning Movement Counts
A2. Existing Synchro Outputs
A3. Existing Plus Background Synchro Outputs
A4. Employee Shift Data
A5. Existing Plus Background Plus Project Synchro Outputs
A6. Existing Plus Background Plus Project with Improvements Synchro Outputs
A7. Peak Hour Signal Warrants
A8. Cumulative Synchro Outputs
A9. Cumulative Plus Project Synchro Outputs
A10. Cumulative Plus Project with Improvements Synchro Outputs
B1. NEI Truck Route Study Turning Templates

A1. Turning Movement Counts

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	EB Left	EB Thru	EB Right	205 WB Ramp_A WB Left	WB Thru	WB Right	MacArthur Dr NB Left	NB Thru	NB Right	N. MacArthur Dr_A SB Left	SB Thru	SB Right	Total
00: All Day (12am-12am)	-	-	-	5,685	880	639	4,595	680	-	-	924	306	13,709
01: 12am (12am-1am)	-	-	-	25	7	4	36	1	-	-	3	2	78
02: 1am (1am-2am)	-	-	-	25	5	5	31	2	-	-	4	-	72
03: 2am (2am-3am)	-	-	-	31	10	3	47	7	-	-	6	2	106
04: 3am (3am-4am)	-	-	-	78	40	7	129	1	-	-	1	9	265
05: 4am (4am-5am)	-	-	-	263	45	8	141	5	-	-	13	8	483
06: 5am (5am-6am)	-	-	-	422	58	30	144	28	-	-	11	20	713
07: 6am (6am-7am)	-	-	-	315	43	53	160	15	-	-	38	25	649
08: 7am (7am-8am)	-	-	-	544	50	35	170	21	-	-	82	21	923
09: 8am (8am-9am)	-	-	-	364	45	44	233	25	-	-	28	22	761
10: 9am (9am-10am)	-	-	-	283	60	31	200	18	-	-	32	19	643
11: 10am (10am-11am)	-	-	-	259	55	62	246	27	-	-	47	20	716
12: 11am (11am-12noon)	-	-	-	228	51	28	261	30	-	-	52	22	672
13: 12pm (12noon-1pm)	-	-	-	285	59	40	277	51	-	-	59	15	786
14: 1pm (1pm-2pm)	-	-	-	289	48	27	270	40	-	-	55	16	745
15: 2pm (2pm-3pm)	-	-	-	335	46	42	239	56	-	-	70	20	808
16: 3pm (3pm-4pm)	-	-	-	416	34	43	315	92	-	-	91	18	1,009
17: 4pm (4pm-5pm)	-	-	-	309	25	47	337	63	-	-	133	14	928
18: 5pm (5pm-6pm)	-	-	-	339	67	44	333	52	-	-	62	14	911
19: 6pm (6pm-7pm)	-	-	-	268	40	23	324	54	-	-	47	12	768
20: 7pm (7pm-8pm)	-	-	-	167	26	22	198	25	-	-	39	6	483
21: 8pm (8pm-9pm)	-	-	-	150	28	12	153	24	-	-	32	8	407
22: 9pm (9pm-10pm)	-	-	-	152	27	16	182	29	-	-	14	10	430
23: 10pm (10pm-11pm)	-	-	-	92	11	6	79	8	-	-	4	1	201
24: 11pm (11pm-12am)	-	-	-	40	15	9	69	3	-	-	4	2	142

TURNING MOVEMENT PERCENTAGE

Day Part	EB Left	EB Thru	EB Right	205 WB Ramp_A WB Left	WB Thru	WB Right	MacArthur Dr NB Left	NB Thru	NB Right	N. MacArthur Dr_A SB Left	SB Thru	SB Right
00: All Day (12am-12am)	-	-	-	79%	12%	9%	87%	13%	0%	0%	75%	25%
01: 12am (12am-1am)	-	-	-	69%	19%	11%	97%	3%	0%	0%	60%	40%
02: 1am (1am-2am)	-	-	-	71%	14%	14%	94%	6%	0%	0%	100%	0%
03: 2am (2am-3am)	-	-	-	70%	23%	7%	87%	13%	0%	0%	75%	25%
04: 3am (3am-4am)	-	-	-	62%	32%	6%	99%	1%	0%	0%	10%	90%
05: 4am (4am-5am)	-	-	-	83%	14%	3%	97%	3%	0%	0%	62%	38%
06: 5am (5am-6am)	-	-	-	83%	11%	6%	84%	16%	0%	0%	35%	65%
07: 6am (6am-7am)	-	-	-	77%	10%	13%	91%	9%	0%	0%	60%	40%
08: 7am (7am-8am)	-	-	-	86%	8%	6%	89%	11%	0%	0%	80%	20%
09: 8am (8am-9am)	-	-	-	80%	10%	10%	90%	10%	0%	0%	56%	44%
10: 9am (9am-10am)	-	-	-	76%	16%	8%	92%	8%	0%	0%	63%	37%
11: 10am (10am-11am)	-	-	-	69%	15%	16%	90%	10%	0%	0%	70%	30%
12: 11am (11am-12noon)	-	-	-	74%	17%	9%	90%	10%	0%	0%	70%	30%
13: 12pm (12noon-1pm)	-	-	-	74%	15%	10%	84%	16%	0%	0%	80%	20%
14: 1pm (1pm-2pm)	-	-	-	79%	13%	7%	87%	13%	0%	0%	77%	23%
15: 2pm (2pm-3pm)	-	-	-	79%	11%	10%	81%	19%	0%	0%	78%	22%
16: 3pm (3pm-4pm)	-	-	-	84%	7%	9%	77%	23%	0%	0%	83%	17%
17: 4pm (4pm-5pm)	-	-	-	81%	7%	12%	84%	16%	0%	0%	90%	10%
18: 5pm (5pm-6pm)	-	-	-	75%	15%	10%	86%	14%	0%	0%	82%	18%
19: 6pm (6pm-7pm)	-	-	-	81%	12%	7%	86%	14%	0%	0%	80%	20%
20: 7pm (7pm-8pm)	-	-	-	78%	12%	10%	89%	11%	0%	0%	87%	13%
21: 8pm (8pm-9pm)	-	-	-	79%	15%	6%	86%	14%	0%	0%	80%	20%
22: 9pm (9pm-10pm)	-	-	-	78%	14%	8%	86%	14%	0%	0%	58%	42%
23: 10pm (10pm-11pm)	-	-	-	84%	10%	6%	91%	9%	0%	0%	80%	20%
24: 11pm (11pm-12am)	-	-	-	63%	23%	14%	96%	4%	0%	0%	67%	33%

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	EB 205_A						MacAurthur Dr_2			MacArthur Dr			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	601	1,674	4,517	-	-	-	-	4,748	7,248	500	6,199	-	25,487
01: 12am (12am-1am)	2	23	32	-	-	-	-	33	65	2	24	-	181
02: 1am (1am-2am)	2	20	48	-	-	-	-	29	98	3	24	-	224
03: 2am (2am-3am)	2	11	31	-	-	-	-	42	191	2	32	-	311
04: 3am (3am-4am)	5	13	28	-	-	-	-	110	91	1	72	-	320
05: 4am (4am-5am)	4	15	89	-	-	-	-	104	147	5	274	-	638
06: 5am (5am-6am)	10	21	163	-	-	-	-	146	242	5	439	-	1,026
07: 6am (6am-7am)	7	36	226	-	-	-	-	157	278	15	331	-	1,050
08: 7am (7am-8am)	17	52	281	-	-	-	-	183	422	36	605	-	1,596
09: 8am (8am-9am)	20	67	281	-	-	-	-	229	302	17	370	-	1,286
10: 9am (9am-10am)	15	48	197	-	-	-	-	203	287	18	298	-	1,066
11: 10am (10am-11am)	29	57	179	-	-	-	-	239	280	36	275	-	1,095
12: 11am (11am-12noon)	23	87	224	-	-	-	-	264	313	22	254	-	1,187
13: 12pm (12noon-1pm)	41	81	247	-	-	-	-	294	359	19	319	-	1,360
14: 1pm (1pm-2pm)	41	95	342	-	-	-	-	268	386	31	309	-	1,472
15: 2pm (2pm-3pm)	82	126	286	-	-	-	-	262	606	33	384	-	1,779
16: 3pm (3pm-4pm)	63	162	227	-	-	-	-	402	627	69	471	-	2,021
17: 4pm (4pm-5pm)	61	159	293	-	-	-	-	370	681	82	378	-	2,024
18: 5pm (5pm-6pm)	51	131	319	-	-	-	-	364	563	33	383	-	1,844
19: 6pm (6pm-7pm)	52	132	268	-	-	-	-	343	486	25	303	-	1,609
20: 7pm (7pm-8pm)	22	106	270	-	-	-	-	216	256	22	190	-	1,082
21: 8pm (8pm-9pm)	33	98	188	-	-	-	-	146	214	17	166	-	862
22: 9pm (9pm-10pm)	16	66	147	-	-	-	-	185	146	10	162	-	732
23: 10pm (10pm-11pm)	6	47	77	-	-	-	-	84	112	7	95	-	428
24: 11pm (11pm-12am)	8	28	65	-	-	-	-	71	87	3	37	-	299

TURNING MOVEMENT PERCENTAGE

Day Part	EB 205_A						MacAurthur Dr_2			MacArthur Dr		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	9%	25%	67%	-	-	-	0%	40%	60%	7%	93%	0%
01: 12am (12am-1am)	4%	40%	56%	-	-	-	0%	34%	66%	8%	92%	0%
02: 1am (1am-2am)	3%	29%	69%	-	-	-	0%	23%	77%	11%	89%	0%
03: 2am (2am-3am)	5%	25%	70%	-	-	-	0%	18%	82%	6%	94%	0%
04: 3am (3am-4am)	11%	28%	61%	-	-	-	0%	55%	45%	1%	99%	0%
05: 4am (4am-5am)	4%	14%	82%	-	-	-	0%	41%	59%	2%	98%	0%
06: 5am (5am-6am)	5%	11%	84%	-	-	-	0%	38%	62%	1%	99%	0%
07: 6am (6am-7am)	3%	13%	84%	-	-	-	0%	36%	64%	4%	96%	0%
08: 7am (7am-8am)	5%	15%	80%	-	-	-	0%	30%	70%	6%	94%	0%
09: 8am (8am-9am)	5%	18%	76%	-	-	-	0%	43%	57%	4%	96%	0%
10: 9am (9am-10am)	6%	18%	76%	-	-	-	0%	41%	59%	6%	94%	0%
11: 10am (10am-11am)	11%	22%	68%	-	-	-	0%	46%	54%	12%	88%	0%
12: 11am (11am-12noon)	7%	26%	67%	-	-	-	0%	46%	54%	8%	92%	0%
13: 12pm (12noon-1pm)	11%	22%	67%	-	-	-	0%	45%	55%	6%	94%	0%
14: 1pm (1pm-2pm)	9%	20%	72%	-	-	-	0%	41%	59%	9%	91%	0%
15: 2pm (2pm-3pm)	17%	26%	58%	-	-	-	0%	30%	70%	8%	92%	0%
16: 3pm (3pm-4pm)	14%	36%	50%	-	-	-	0%	39%	61%	13%	87%	0%
17: 4pm (4pm-5pm)	12%	31%	57%	-	-	-	0%	35%	65%	18%	82%	0%
18: 5pm (5pm-6pm)	10%	26%	64%	-	-	-	0%	39%	61%	8%	92%	0%
19: 6pm (6pm-7pm)	12%	29%	59%	-	-	-	0%	41%	59%	8%	92%	0%
20: 7pm (7pm-8pm)	6%	27%	68%	-	-	-	0%	46%	54%	10%	90%	0%
21: 8pm (8pm-9pm)	10%	31%	59%	-	-	-	0%	41%	59%	9%	91%	0%
22: 9pm (9pm-10pm)	7%	29%	64%	-	-	-	0%	56%	44%	6%	94%	0%
23: 10pm (10pm-11pm)	5%	36%	59%	-	-	-	0%	43%	57%	7%	93%	0%
24: 11pm (11pm-12am)	8%	28%	64%	-	-	-	0%	45%	55%	8%	93%	0%

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W. Grant Line_A			E. Grant Line_A			S. MacArthur_A			N. MacArthur Dr_A			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	4,001	2,957	797	649	2,953	2,361	549	3,807	408	2,221	3,698	3,730	28,131
01: 12am (12am-1am)	10	18	1	6	12	12	14	51	15	19	28	17	203
02: 1am (1am-2am)	11	7	3	2	4	12	5	91	5	14	19	19	192
03: 2am (2am-3am)	11	8	3	6	11	21	6	131	7	12	19	14	249
04: 3am (3am-4am)	47	6	1	34	33	39	7	48	9	14	50	31	319
05: 4am (4am-5am)	62	77	7	52	58	56	11	47	33	71	106	108	688
06: 5am (5am-6am)	89	76	24	45	90	164	6	55	12	143	263	95	1,062
07: 6am (6am-7am)	126	144	34	28	80	67	5	100	12	228	154	115	1,093
08: 7am (7am-8am)	259	243	48	20	257	106	27	128	14	210	309	426	2,047
09: 8am (8am-9am)	201	88	71	32	186	115	14	161	12	125	211	163	1,379
10: 9am (9am-10am)	158	76	20	24	125	120	16	149	13	98	196	131	1,126
11: 10am (10am-11am)	171	109	40	15	146	147	33	150	19	95	150	157	1,232
12: 11am (11am-12noon)	174	131	44	26	188	152	53	180	14	104	147	164	1,377
13: 12pm (12noon-1pm)	217	216	64	13	172	131	46	203	16	113	197	182	1,570
14: 1pm (1pm-2pm)	198	155	56	26	196	139	37	228	31	150	183	205	1,604
15: 2pm (2pm-3pm)	225	223	48	73	170	180	25	324	51	114	239	262	1,934
16: 3pm (3pm-4pm)	336	281	126	88	310	215	57	389	30	87	272	268	2,459
17: 4pm (4pm-5pm)	397	380	59	20	244	144	44	415	32	138	183	242	2,298
18: 5pm (5pm-6pm)	398	304	53	24	262	192	58	289	28	164	205	267	2,244
19: 6pm (6pm-7pm)	315	176	30	11	155	155	40	257	21	100	229	329	1,818
20: 7pm (7pm-8pm)	243	100	37	23	102	50	17	147	16	63	165	193	1,156
21: 8pm (8pm-9pm)	183	82	18	25	68	37	14	88	14	65	166	153	913
22: 9pm (9pm-10pm)	86	22	7	24	33	43	7	86	3	32	102	106	551
23: 10pm (10pm-11pm)	57	25	5	4	14	34	4	46	3	24	52	57	325
24: 11pm (11pm-12am)	21	21	11	26	35	26	3	43	10	18	48	31	293

TURNING MOVEMENT PERCENTAGE

Day Part	W. Grant Line_A			E. Grant Line_A			S. MacArthur_A			N. MacArthur Dr_A		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	52%	38%	10%	11%	50%	40%	12%	80%	9%	23%	38%	39%
01: 12am (12am-1am)	34%	62%	3%	20%	40%	40%	18%	64%	19%	30%	44%	27%
02: 1am (1am-2am)	52%	33%	14%	11%	22%	67%	5%	90%	5%	27%	37%	37%
03: 2am (2am-3am)	50%	36%	14%	16%	29%	55%	4%	91%	5%	27%	42%	31%
04: 3am (3am-4am)	87%	11%	2%	32%	31%	37%	11%	75%	14%	15%	53%	33%
05: 4am (4am-5am)	42%	53%	5%	31%	35%	34%	12%	52%	36%	25%	37%	38%
06: 5am (5am-6am)	47%	40%	13%	15%	30%	55%	8%	75%	16%	29%	52%	19%
07: 6am (6am-7am)	41%	47%	11%	16%	46%	38%	4%	85%	10%	46%	31%	23%
08: 7am (7am-8am)	47%	44%	9%	5%	67%	28%	16%	76%	8%	22%	33%	45%
09: 8am (8am-9am)	56%	24%	20%	10%	56%	35%	7%	86%	6%	25%	42%	33%
10: 9am (9am-10am)	62%	30%	8%	9%	46%	45%	9%	84%	7%	23%	46%	31%
11: 10am (10am-11am)	53%	34%	13%	5%	47%	48%	16%	74%	9%	24%	37%	39%
12: 11am (11am-12noon)	50%	38%	13%	7%	51%	42%	21%	73%	6%	25%	35%	40%
13: 12pm (12noon-1pm)	44%	43%	13%	4%	54%	41%	17%	77%	6%	23%	40%	37%
14: 1pm (1pm-2pm)	48%	38%	14%	7%	54%	39%	13%	77%	10%	28%	34%	38%
15: 2pm (2pm-3pm)	45%	45%	10%	17%	40%	43%	6%	81%	13%	19%	39%	43%
16: 3pm (3pm-4pm)	45%	38%	17%	14%	51%	35%	12%	82%	6%	14%	43%	43%
17: 4pm (4pm-5pm)	47%	45%	7%	5%	60%	35%	9%	85%	7%	25%	33%	43%
18: 5pm (5pm-6pm)	53%	40%	7%	5%	55%	40%	15%	77%	7%	26%	32%	42%
19: 6pm (6pm-7pm)	60%	34%	6%	3%	48%	48%	13%	81%	7%	15%	35%	50%
20: 7pm (7pm-8pm)	64%	26%	10%	13%	58%	29%	9%	82%	9%	15%	39%	46%
21: 8pm (8pm-9pm)	65%	29%	6%	19%	52%	28%	12%	76%	12%	17%	43%	40%
22: 9pm (9pm-10pm)	75%	19%	6%	24%	33%	43%	7%	90%	3%	13%	43%	44%
23: 10pm (10pm-11pm)	66%	29%	6%	8%	27%	65%	8%	87%	6%	18%	39%	43%
24: 11pm (11pm-12am)	40%	40%	21%	30%	40%	30%	5%	77%	18%	19%	49%	32%

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W. 11th Street_A			E 11th Street_A						N. MacArthur_A			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	1,217	7,478	-	-	7,224	1,692	-	-	-	1,682	-	1,294	20,587
01: 12am (12am-1am)	4	20	-	-	28	14	-	-	-	26	-	11	103
02: 1am (1am-2am)	1	15	-	-	30	15	-	-	-	12	-	5	78
03: 2am (2am-3am)	3	17	-	-	27	25	-	-	-	20	-	9	101
04: 3am (3am-4am)	7	13	-	-	169	26	-	-	-	19	-	10	244
05: 4am (4am-5am)	44	35	-	-	242	81	-	-	-	17	-	32	451
06: 5am (5am-6am)	24	66	-	-	299	72	-	-	-	21	-	36	518
07: 6am (6am-7am)	34	154	-	-	444	78	-	-	-	56	-	18	784
08: 7am (7am-8am)	15	467	-	-	1,074	125	-	-	-	96	-	54	1,831
09: 8am (8am-9am)	61	306	-	-	461	107	-	-	-	55	-	33	1,023
10: 9am (9am-10am)	39	240	-	-	356	76	-	-	-	50	-	49	810
11: 10am (10am-11am)	52	290	-	-	326	72	-	-	-	75	-	35	850
12: 11am (11am-12noon)	43	315	-	-	316	86	-	-	-	81	-	55	896
13: 12pm (12noon-1pm)	47	357	-	-	300	78	-	-	-	80	-	61	923
14: 1pm (1pm-2pm)	69	389	-	-	309	107	-	-	-	89	-	73	1,036
15: 2pm (2pm-3pm)	93	537	-	-	323	91	-	-	-	126	-	74	1,244
16: 3pm (3pm-4pm)	165	1,022	-	-	454	151	-	-	-	203	-	95	2,090
17: 4pm (4pm-5pm)	133	821	-	-	446	92	-	-	-	169	-	129	1,790
18: 5pm (5pm-6pm)	114	756	-	-	563	100	-	-	-	122	-	91	1,746
19: 6pm (6pm-7pm)	139	585	-	-	351	76	-	-	-	102	-	113	1,366
20: 7pm (7pm-8pm)	75	421	-	-	248	72	-	-	-	73	-	106	995
21: 8pm (8pm-9pm)	32	335	-	-	195	55	-	-	-	84	-	132	833
22: 9pm (9pm-10pm)	23	167	-	-	154	37	-	-	-	38	-	44	463
23: 10pm (10pm-11pm)	16	80	-	-	77	19	-	-	-	34	-	9	235
24: 11pm (11pm-12am)	7	50	-	-	50	12	-	-	-	30	-	25	174

TURNING MOVEMENT PERCENTAGE

Day Part	W. 11th Street_A			E 11th Street_A						N. MacArthur_A		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	14%	86%	0%	0%	81%	19%	-	-	-	57%	0%	43%
01: 12am (12am-1am)	17%	83%	0%	0%	67%	33%	-	-	-	70%	0%	30%
02: 1am (1am-2am)	6%	94%	0%	0%	67%	33%	-	-	-	71%	0%	29%
03: 2am (2am-3am)	15%	85%	0%	0%	52%	48%	-	-	-	69%	0%	31%
04: 3am (3am-4am)	35%	65%	0%	0%	87%	13%	-	-	-	66%	0%	34%
05: 4am (4am-5am)	56%	44%	0%	0%	75%	25%	-	-	-	35%	0%	65%
06: 5am (5am-6am)	27%	73%	0%	0%	81%	19%	-	-	-	37%	0%	63%
07: 6am (6am-7am)	18%	82%	0%	0%	85%	15%	-	-	-	76%	0%	24%
08: 7am (7am-8am)	3%	97%	0%	0%	90%	10%	-	-	-	64%	0%	36%
09: 8am (8am-9am)	17%	83%	0%	0%	81%	19%	-	-	-	63%	0%	38%
10: 9am (9am-10am)	14%	86%	0%	0%	82%	18%	-	-	-	51%	0%	49%
11: 10am (10am-11am)	15%	85%	0%	0%	82%	18%	-	-	-	68%	0%	32%
12: 11am (11am-12noon)	12%	88%	0%	0%	79%	21%	-	-	-	60%	0%	40%
13: 12pm (12noon-1pm)	12%	88%	0%	0%	79%	21%	-	-	-	57%	0%	43%
14: 1pm (1pm-2pm)	15%	85%	0%	0%	74%	26%	-	-	-	55%	0%	45%
15: 2pm (2pm-3pm)	15%	85%	0%	0%	78%	22%	-	-	-	63%	0%	37%
16: 3pm (3pm-4pm)	14%	86%	0%	0%	75%	25%	-	-	-	68%	0%	32%
17: 4pm (4pm-5pm)	14%	86%	0%	0%	83%	17%	-	-	-	57%	0%	43%
18: 5pm (5pm-6pm)	13%	87%	0%	0%	85%	15%	-	-	-	57%	0%	43%
19: 6pm (6pm-7pm)	19%	81%	0%	0%	82%	18%	-	-	-	47%	0%	53%
20: 7pm (7pm-8pm)	15%	85%	0%	0%	78%	23%	-	-	-	41%	0%	59%
21: 8pm (8pm-9pm)	9%	91%	0%	0%	78%	22%	-	-	-	39%	0%	61%
22: 9pm (9pm-10pm)	12%	88%	0%	0%	81%	19%	-	-	-	46%	0%	54%
23: 10pm (10pm-11pm)	17%	83%	0%	0%	80%	20%	-	-	-	79%	0%	21%
24: 11pm (11pm-12am)	12%	88%	0%	0%	81%	19%	-	-	-	55%	0%	45%

Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W. Grantline_A			E. Grant Line_A			Skylark_A						Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	-	5,007	252	179	4,846	-	280	-	176	-	-	-	10,740
01: 12am (12am-1am)	-	68	-	-	21	-	3	-	2	-	-	-	94
03: 2am (2am-3am)	-	27	-	-	31	-	4	-	1	-	-	-	63
04: 3am (3am-4am)	-	22	1	1	92	-	2	-	3	-	-	-	121
05: 4am (4am-5am)	-	161	13	1	123	-	26	-	28	-	-	-	352
06: 5am (5am-6am)	-	174	4	2	196	-	59	-	10	-	-	-	445
07: 6am (6am-7am)	-	252	41	63	174	-	4	-	2	-	-	-	536
08: 7am (7am-8am)	-	358	37	39	319	-	5	-	1	-	-	-	759
09: 8am (8am-9am)	-	187	9	3	324	-	1	-	3	-	-	-	527
10: 9am (9am-10am)	-	160	6	5	252	-	3	-	2	-	-	-	428
11: 10am (10am-11am)	-	200	9	3	260	-	9	-	1	-	-	-	482
12: 11am (11am-12noon)	-	235	9	1	299	-	11	-	5	-	-	-	560
13: 12pm (12noon-1pm)	-	320	7	1	251	-	10	-	7	-	-	-	596
14: 1pm (1pm-2pm)	-	280	12	3	315	-	7	-	1	-	-	-	618
15: 2pm (2pm-3pm)	-	378	10	3	328	-	17	-	9	-	-	-	745
16: 3pm (3pm-4pm)	-	389	7	3	454	-	37	-	13	-	-	-	903
17: 4pm (4pm-5pm)	-	541	13	2	351	-	9	-	8	-	-	-	924
18: 5pm (5pm-6pm)	-	497	32	40	362	-	22	-	36	-	-	-	989
19: 6pm (6pm-7pm)	-	281	25	19	231	-	47	-	33	-	-	-	636
20: 7pm (7pm-8pm)	-	165	1	1	149	-	2	-	3	-	-	-	321
21: 8pm (8pm-9pm)	-	128	6	-	101	-	3	-	3	-	-	-	241
22: 9pm (9pm-10pm)	-	-	-	-	-	-	-	-	-	-	-	-	-
23: 10pm (10pm-11pm)	-	42	2	-	33	-	2	-	2	-	-	-	81
24: 11pm (11pm-12am)	-	51	1	1	73	-	3	-	2	-	-	-	131
02: 1am (1am-2am)	-	27	-	-	13	-	1	-	3	-	-	-	44

TURNING MOVEMENT PERCENTAGE

Day Part	W. Grantline_A			E. Grant Line_A			Skylark_A					
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	0%	95%	5%	4%	96%	0%	61%	0%	39%	-	-	-
01: 12am (12am-1am)	0%	100%	0%	0%	100%	0%	60%	0%	40%	-	-	-
03: 2am (2am-3am)	0%	100%	0%	0%	100%	0%	80%	0%	20%	-	-	-
04: 3am (3am-4am)	0%	96%	4%	1%	99%	0%	40%	0%	60%	-	-	-
05: 4am (4am-5am)	0%	93%	7%	1%	99%	0%	48%	0%	52%	-	-	-
06: 5am (5am-6am)	0%	98%	2%	1%	99%	0%	86%	0%	14%	-	-	-
07: 6am (6am-7am)	0%	86%	14%	27%	73%	0%	67%	0%	33%	-	-	-
08: 7am (7am-8am)	0%	91%	9%	11%	89%	0%	83%	0%	17%	-	-	-
09: 8am (8am-9am)	0%	95%	5%	1%	99%	0%	25%	0%	75%	-	-	-
10: 9am (9am-10am)	0%	96%	4%	2%	98%	0%	60%	0%	40%	-	-	-
11: 10am (10am-11am)	0%	96%	4%	1%	99%	0%	90%	0%	10%	-	-	-
12: 11am (11am-12noon)	0%	96%	4%	0%	100%	0%	69%	0%	31%	-	-	-
13: 12pm (12noon-1pm)	0%	98%	2%	0%	100%	0%	59%	0%	41%	-	-	-
14: 1pm (1pm-2pm)	0%	96%	4%	1%	99%	0%	88%	0%	13%	-	-	-
15: 2pm (2pm-3pm)	0%	97%	3%	1%	99%	0%	65%	0%	35%	-	-	-
16: 3pm (3pm-4pm)	0%	98%	2%	1%	99%	0%	74%	0%	26%	-	-	-
17: 4pm (4pm-5pm)	0%	98%	2%	1%	99%	0%	53%	0%	47%	-	-	-
18: 5pm (5pm-6pm)	0%	94%	6%	10%	90%	0%	38%	0%	62%	-	-	-
19: 6pm (6pm-7pm)	0%	92%	8%	8%	92%	0%	59%	0%	41%	-	-	-
20: 7pm (7pm-8pm)	0%	99%	1%	1%	99%	0%	40%	0%	60%	-	-	-
21: 8pm (8pm-9pm)	0%	96%	4%	0%	100%	0%	50%	0%	50%	-	-	-
22: 9pm (9pm-10pm)	-	-	-	-	-	-	-	-	-	-	-	-
23: 10pm (10pm-11pm)	0%	95%	5%	0%	100%	0%	50%	0%	50%	-	-	-
24: 11pm (11pm-12am)	0%	98%	2%	1%	99%	0%	60%	0%	40%	-	-	-
02: 1am (1am-2am)	0%	100%	0%	0%	100%	0%	25%	0%	75%	-	-	-

Prepared by National Data & Surveying Services

Chrisman Rd & Grant Line Rd

Peak Hour Turning Movement Count

ID: 19-08103-001
City: Tracy

Day: Thursday
Date: 02/28/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Chrisman Rd)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Grant Line Rd)

AM	NOON	PM		
305	0	301		
0	0	0	0	
0	0	0	1	
217	0	359	3	
77	0	39	0	
AM	NOON	PM		

WESTBOUND (Grant Line Rd)

PM	NOON	AM	
0	0	0	0
205	0	287	3
45	0	55	1
1	0	15	0
388	0	238	
PM	NOON	AM	

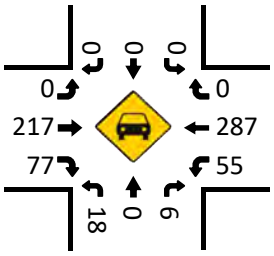
NORTHBOUND (Chrisman Rd)

PM	84	0	96	0	28	PM
NOON	0	0	0	0	0	NOON
AM	132	0	18	0	6	AM

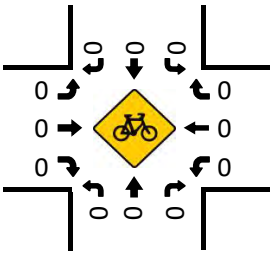
0 0 0 0 | 0 1 0 1

CONTROL			
Signalized			
TEV	675 AM	0 NOON	773 PM
PHF	0.80		0.85

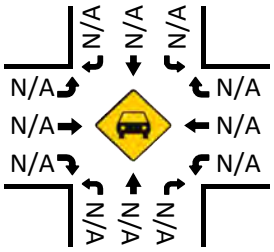
Total Vehicles (AM)



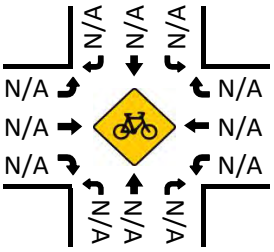
Bikes (AM)



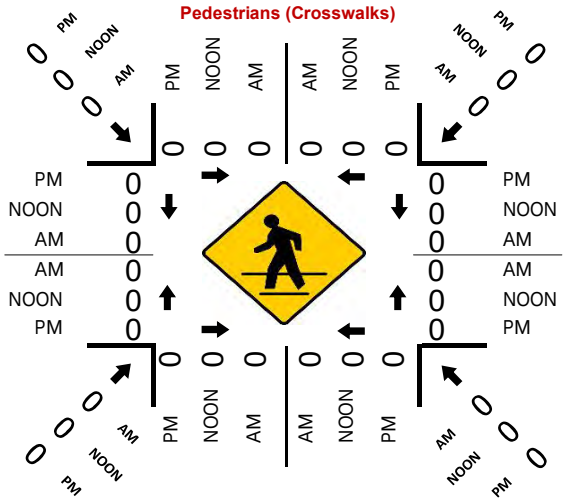
Total Vehicles (Noon)



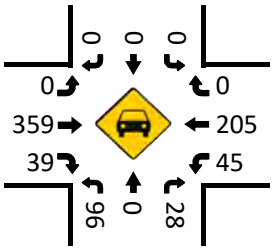
Bikes (NOON)



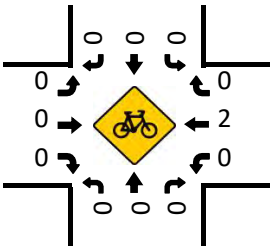
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Chrisman Rd & Paradise Rd

Peak Hour Turning Movement Count

ID: 18-08075-001
City: Tracy

Day: Tuesday
Date: 02/27/2018

PEAK HOURS

06:30 AM - 07:30 AM
NONE
05:30 PM - 06:30 PM

COUNT PERIODS

06:30 AM - 09:00 AM
NONE
04:30 PM - 06:30 PM

Chrisman Rd — SOUTHBOUND

AM	5	262	2	0	20	AM
NOON	0	0	0	0	0	NOON
PM	5	175	2	0	117	PM

Paradise Rd — EASTBOUND

AM	NOON	PM	
12	0	9	
0	0	0	0
0	0	6	1
0	0	28	0.5
2	0	0	0.5
AM	NOON	PM	

Paradise Rd — WESTBOUND

PM	NOON	AM	
2	0	3	0.5
1	0	7	0.5
245	0	275	1
0	0	1	0
336	0	35	
PM	NOON	AM	

Chrisman Rd — NORTHBOUND

PM	420	0	3	109	306	PM
NOON	0	0	0	0	0	NOON
AM	539	0	0	17	32	AM

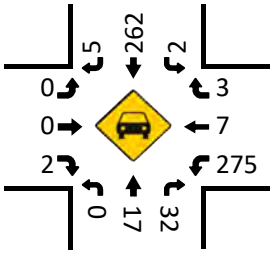
Turning factors: 0.5 0.5 1 0 (southbound approach); 0.5 0.5 1 0 (westbound approach); 0 1 0.5 0.5 (northbound approach)

CONTROL

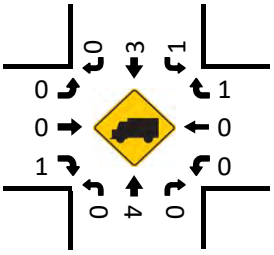
4-Way Stop

TEV	606 AM	0 NOON	882 PM
PHF	0.89		0.64

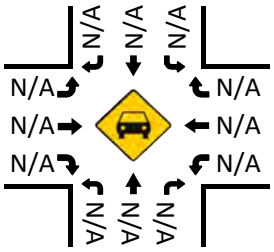
Total Vehicles (AM)



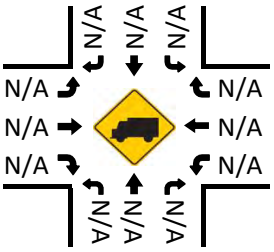
HT (AM)



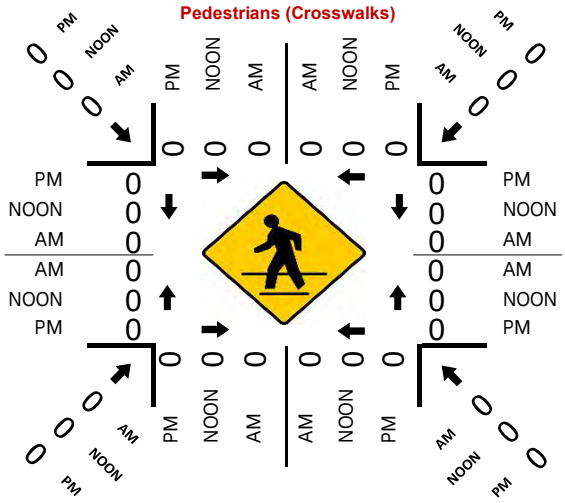
Total Vehicles (Noon)



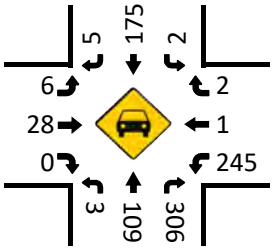
HT (NOON)



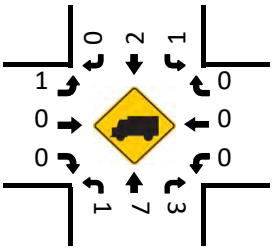
Pedestrians (Crosswalks)



Total Vehicles (PM)



HT (PM)



Day Type

1: Weekday (Tu-Th)

TURNING MOVEMENT COUNTS

Day Part	W 11th St_A			E. 11th St_A			S. Chrisman_A			N. Chrisman_A			Total
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	
00: All Day (12am-12am)	895	6,536	1,582	4,602	6,782	460	1,500	451	5,077	270	411	410	28,976
01: 12am (12am-1am)	1	32	6	22	39	1	4	1	15	-	2	1	124
02: 1am (1am-2am)	-	26	4	46	39	2	4	-	12	-	12	2	147
03: 2am (2am-3am)	1	37	2	11	39	-	11	-	4	1	8	2	116
04: 3am (3am-4am)	2	24	9	17	202	10	4	-	12	1	-	2	283
05: 4am (4am-5am)	5	40	11	51	331	8	8	4	26	-	-	-	484
06: 5am (5am-6am)	9	74	18	227	360	20	33	17	136	2	7	2	905
07: 6am (6am-7am)	14	138	55	476	501	47	79	7	259	9	60	1	1,646
08: 7am (7am-8am)	108	369	59	287	682	31	448	29	487	20	21	21	2,562
09: 8am (8am-9am)	65	269	40	220	438	35	81	19	341	15	18	34	1,575
10: 9am (9am-10am)	42	196	31	169	344	34	47	34	242	15	15	29	1,198
11: 10am (10am-11am)	38	264	62	149	322	22	51	31	265	24	18	13	1,259
12: 11am (11am-12noon)	49	246	63	162	297	19	61	25	225	14	18	13	1,192
13: 12pm (12noon-1pm)	50	301	64	176	276	32	52	22	204	18	19	15	1,229
14: 1pm (1pm-2pm)	39	364	68	209	318	31	62	28	253	12	15	22	1,421
15: 2pm (2pm-3pm)	74	509	64	212	297	27	58	20	406	19	15	32	1,733
16: 3pm (3pm-4pm)	106	705	427	256	399	25	134	44	604	27	39	37	2,803
17: 4pm (4pm-5pm)	62	767	148	392	421	37	62	43	414	34	27	54	2,461
18: 5pm (5pm-6pm)	81	686	112	419	475	40	120	39	393	20	29	37	2,451
19: 6pm (6pm-7pm)	49	528	100	274	305	13	60	27	316	16	19	36	1,743
20: 7pm (7pm-8pm)	36	343	87	202	227	21	36	42	178	8	8	26	1,214
21: 8pm (8pm-9pm)	26	308	86	282	207	8	29	10	120	9	14	13	1,112
22: 9pm (9pm-10pm)	17	144	40	187	146	12	13	4	92	6	35	9	705
23: 10pm (10pm-11pm)	8	96	15	108	72	-	12	6	82	1	3	9	412
24: 11pm (11pm-12am)	-	58	11	55	47	-	8	-	15	2	2	3	201

TURNING MOVEMENT PERCENTAGE

Day Part	W 11th St_A			E. 11th St_A			S. Chrisman_A			N. Chrisman_A		
	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right
00: All Day (12am-12am)	10%	73%	18%	39%	57%	4%	21%	6%	72%	25%	38%	38%
01: 12am (12am-1am)	3%	82%	15%	35%	63%	2%	20%	5%	75%	0%	67%	33%
02: 1am (1am-2am)	0%	87%	13%	53%	45%	2%	25%	0%	75%	0%	86%	14%
03: 2am (2am-3am)	3%	93%	5%	22%	78%	0%	73%	0%	27%	9%	73%	18%
04: 3am (3am-4am)	6%	69%	26%	7%	88%	4%	25%	0%	75%	33%	0%	67%
05: 4am (4am-5am)	9%	71%	20%	13%	85%	2%	21%	11%	68%	-	-	-
06: 5am (5am-6am)	9%	73%	18%	37%	59%	3%	18%	9%	73%	18%	64%	18%
07: 6am (6am-7am)	7%	67%	27%	46%	49%	5%	23%	2%	75%	13%	86%	1%
08: 7am (7am-8am)	20%	69%	11%	29%	68%	3%	46%	3%	51%	32%	34%	34%
09: 8am (8am-9am)	17%	72%	11%	32%	63%	5%	18%	4%	77%	22%	27%	51%
10: 9am (9am-10am)	16%	73%	12%	31%	63%	6%	15%	11%	75%	25%	25%	49%
11: 10am (10am-11am)	10%	73%	17%	30%	65%	4%	15%	9%	76%	44%	33%	24%
12: 11am (11am-12noon)	14%	69%	18%	34%	62%	4%	20%	8%	72%	31%	40%	29%
13: 12pm (12noon-1pm)	12%	73%	15%	36%	57%	7%	19%	8%	73%	35%	37%	29%
14: 1pm (1pm-2pm)	8%	77%	14%	37%	57%	6%	18%	8%	74%	24%	31%	45%
15: 2pm (2pm-3pm)	11%	79%	10%	40%	55%	5%	12%	4%	84%	29%	23%	48%
16: 3pm (3pm-4pm)	9%	57%	34%	38%	59%	4%	17%	6%	77%	26%	38%	36%
17: 4pm (4pm-5pm)	6%	79%	15%	46%	50%	4%	12%	8%	80%	30%	23%	47%
18: 5pm (5pm-6pm)	9%	78%	13%	45%	51%	4%	22%	7%	71%	23%	34%	43%
19: 6pm (6pm-7pm)	7%	78%	15%	46%	52%	2%	15%	7%	78%	23%	27%	51%
20: 7pm (7pm-8pm)	8%	74%	19%	45%	50%	5%	14%	16%	70%	19%	19%	62%
21: 8pm (8pm-9pm)	6%	73%	20%	57%	42%	2%	18%	6%	75%	25%	39%	36%
22: 9pm (9pm-10pm)	8%	72%	20%	54%	42%	3%	12%	4%	84%	12%	70%	18%
23: 10pm (10pm-11pm)	7%	81%	13%	60%	40%	0%	12%	6%	82%	8%	23%	69%
24: 11pm (11pm-12am)	0%	84%	16%	54%	46%	0%	35%	0%	65%	29%	29%	43%

A2. Existing Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	557	50	35	178	22	0	0	84	21
Future Volume (veh/h)	0	0	0	557	50	35	178	22	0	0	84	21
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				619	56	39	198	24	0	0	93	23
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				677	61	43	256	621	0	0	144	36
Arrive On Green				0.47	0.47	0.47	0.15	0.35	0.00	0.00	0.11	0.11
Sat Flow, veh/h				1442	130	91	1668	1752	0	0	1356	335
Grp Volume(v), veh/h				714	0	0	198	24	0	0	0	116
Grp Sat Flow(s),veh/h/ln				1663	0	0	1668	1752	0	0	0	1691
Q Serve(g_s), s				20.6	0.0	0.0	5.9	0.5	0.0	0.0	0.0	3.4
Cycle Q Clear(g_c), s				20.6	0.0	0.0	5.9	0.5	0.0	0.0	0.0	3.4
Prop In Lane				0.87		0.05	1.00		0.00	0.00		0.20
Lane Grp Cap(c), veh/h				781	0	0	256	621	0	0	0	180
V/C Ratio(X)				0.91	0.00	0.00	0.77	0.04	0.00	0.00	0.00	0.65
Avail Cap(c_a), veh/h				1126	0	0	968	847	0	0	0	818
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				12.7	0.0	0.0	21.0	10.9	0.0	0.0	0.0	22.2
Incr Delay (d2), s/veh				6.8	0.0	0.0	3.7	0.0	0.0	0.0	0.0	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.1	0.0	0.0	2.2	0.1	0.0	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.5	0.0	0.0	24.8	10.9	0.0	0.0	0.0	23.6
LnGrp LOS				B	A	A	C	B	A	A	A	C
Approach Vol, veh/h					714			222			116	
Approach Delay, s/veh					19.5			23.3			23.6	
Approach LOS					B			C			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		23.2			12.8	10.4		28.5				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		2.5			7.9	5.4		22.6				
Green Ext Time (p_c), s		0.0			0.5	0.1		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	52	281	0	0	0	0	183	422	36	605	0
Future Volume (veh/h)	17	52	281	0	0	0	0	183	422	36	605	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	18	57	305				0	199	459	39	658	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	105	333	376				0	730	618	71	958	0
Arrive On Green	0.25	0.25	0.25				0.00	0.42	0.42	0.04	0.55	0.00
Sat Flow, veh/h	415	1316	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	75	0	305				0	199	459	39	658	0
Grp Sat Flow(s),veh/h/ln	1731	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	1.5	0.0	8.8				0.0	3.4	11.9	1.0	12.4	0.0
Cycle Q Clear(g_c), s	1.5	0.0	8.8				0.0	3.4	11.9	1.0	12.4	0.0
Prop In Lane	0.24		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	438	0	376				0	730	618	71	958	0
V/C Ratio(X)	0.17	0.00	0.81				0.00	0.27	0.74	0.55	0.69	0.00
Avail Cap(c_a), veh/h	950	0	815				0	2115	1792	549	2115	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	0.0	16.0				0.0	8.8	11.2	21.4	7.5	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.6				0.0	0.3	2.5	6.4	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.6				0.0	1.0	3.1	0.5	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	0.0	17.6				0.0	9.0	13.8	27.8	8.7	0.0
LnGrp LOS	B	A	B				A	A	B	C	A	A
Approach Vol, veh/h		380						658			697	
Approach Delay, s/veh		16.8						12.3			9.8	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.9	23.9		15.7		29.8
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	3.5	13.9		10.8		14.4
Green Ext Time (p_c), s	0.1	5.1		0.8		5.2

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	243	48	20	257	106	27	128	14	210	309	426
Future Volume (veh/h)	259	243	48	20	257	106	27	128	14	210	309	426
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	282	264	52	22	279	115	29	139	15	228	336	463
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	324	1041	464	50	500	211	65	762	340	267	1173	554
Arrive On Green	0.18	0.30	0.30	0.03	0.14	0.14	0.04	0.23	0.23	0.16	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	282	264	52	22	279	115	29	139	15	228	336	463
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	11.1	4.1	1.7	0.9	5.3	5.2	1.2	2.4	0.6	9.5	5.2	19.4
Cycle Q Clear(g_c), s	11.1	4.1	1.7	0.9	5.3	5.2	1.2	2.4	0.6	9.5	5.2	19.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1041	464	50	500	211	65	762	340	267	1173	554
V/C Ratio(X)	0.87	0.25	0.11	0.44	0.56	0.55	0.45	0.18	0.04	0.85	0.29	0.84
Avail Cap(c_a), veh/h	370	1475	658	349	1475	621	370	1392	621	349	1392	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	19.2	18.4	34.2	28.7	28.6	33.8	22.2	21.5	29.3	16.7	21.3
Incr Delay (d2), s/veh	16.5	0.2	0.2	2.3	1.7	3.7	1.8	0.2	0.1	12.0	0.2	9.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	1.6	0.6	0.4	2.2	1.9	0.5	0.9	0.2	4.4	1.8	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	19.5	18.6	36.5	30.3	32.4	35.6	22.4	21.6	41.3	17.0	30.5
LnGrp LOS	D	B	B	D	C	C	D	C	C	D	B	C
Approach Vol, veh/h		598			416			183			1027	
Approach Delay, s/veh		31.4			31.2			24.5			28.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	21.9	7.1	26.2	7.6	30.8	18.1	15.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	11.1	4.4	2.9	6.1	3.2	21.4	13.1	7.3
Green Ext Time (p_c), s	0.1	1.1	0.0	2.3	0.0	3.9	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	467	0	0	1074	125	0	0	0	96	0	54
Future Volume (veh/h)	15	467	0	0	1074	125	0	0	0	96	0	54
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	16	508	0	0	1167	136	0	0	0	104	0	59
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	57	2145	0	0	1680	708	0	337	0	415	0	303
Arrive On Green	0.03	0.61	0.00	0.00	0.48	0.48	0.00	0.00	0.00	0.19	0.00	0.19
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	16	508	0	0	1167	136	0	0	0	104	0	59
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	0.4	3.0	0.0	0.0	11.7	2.4	0.0	0.0	0.0	3.1	0.0	1.4
Cycle Q Clear(g_c), s	0.4	3.0	0.0	0.0	11.7	2.4	0.0	0.0	0.0	3.1	0.0	1.4
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	57	2145	0	0	1680	708	0	337	0	415	0	303
V/C Ratio(X)	0.28	0.24	0.00	0.00	0.69	0.19	0.00	0.00	0.00	0.25	0.00	0.19
Avail Cap(c_a), veh/h	1172	3898	0	0	3898	1642	0	969	0	1187	0	1217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.4	4.1	0.0	0.0	9.3	6.8	0.0	0.0	0.0	16.0	0.0	15.3
Incr Delay (d2), s/veh	1.0	0.1	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.1	0.0	0.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.0	0.0	3.1	0.5	0.0	0.0	0.0	0.9	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	4.1	0.0	0.0	9.8	6.9	0.0	0.0	0.0	16.1	0.0	15.4
LnGrp LOS	C	A	A	A	A	A	A	A	A	B	A	B
Approach Vol, veh/h		524			1303			0			163	
Approach Delay, s/veh		4.7			9.5			0.0			15.9	
Approach LOS		A			A						B	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.0		13.2	6.0	26.1		13.2
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	50.0		35.0	30.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	5.0		5.1	2.4	13.7		0.0
Green Ext Time (p_c), s	2.4		0.5	0.0	7.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	358	37	45	369	0	5	0	1	0	0	0
Future Volume (veh/h)	0	358	37	45	369	0	5	0	1	0	0	0
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	0	389	40	49	401	0	5	0	1	0	0	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	6	1285	131	94	2058	0	11	0	24	6	6	0
Arrive On Green	0.00	0.42	0.42	0.06	0.62	0.00	0.01	0.00	0.02	0.00	0.00	0.00
Sat Flow, veh/h	1668	3048	312	1668	3416	0	1668	0	1485	1668	1752	0
Grp Volume(v), veh/h	0	211	218	49	401	0	5	0	1	0	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1696	1668	1664	0	1668	0	1485	1668	1752	0
Q Serve(g_s), s	0.0	2.4	2.4	0.8	1.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	2.4	2.4	0.8	1.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.18	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	6	701	715	94	2058	0	11	0	24	6	6	0
V/C Ratio(X)	0.00	0.30	0.30	0.52	0.19	0.00	0.44	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	879	2630	2680	1465	7015	0	1172	0	2347	879	2154	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	5.5	5.5	13.1	2.4	0.0	14.1	0.0	13.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	1.7	0.0	0.0	9.6	0.0	0.3	0.0	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.5	5.6	14.7	2.4	0.0	23.7	0.0	14.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	C	A	B	A	A	A
Approach Vol, veh/h		429			450			6			0	
Approach Delay, s/veh		5.5			3.7			22.1			0.0	
Approach LOS		A			A			C				

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	17.8	0.0	5.1	0.0	23.4	4.2	0.9
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	2.8	4.4	0.0	2.0	0.0	3.5	2.1	0.0
Green Ext Time (p_c), s	0.0	1.4	0.0	0.0	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Future Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	0	0	2	310	8	3	0	19	36	2	294	6
Number of Lanes	1	1	0	1	1	0	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	8.8	16.4	9.2	14.6
HCM LOS	A	C	A	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	100%	0%	0%	70%	0%	98%
Vol Right, %	0%	0%	100%	0%	100%	0%	30%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	17	32	0	2	276	10	2	267
LT Vol	0	0	0	0	0	276	0	2	0
Through Vol	0	17	0	0	0	0	7	0	262
RT Vol	0	0	32	0	2	0	3	0	5
Lane Flow Rate	0	19	36	0	2	310	11	2	300
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0	0.035	0.059	0	0.004	0.551	0.018	0.004	0.5
Departure Headway (Hd)	6.643	6.643	5.932	6.766	6.056	6.392	5.678	6.517	5.999
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	539	604	0	591	564	632	550	603
Service Time	4.38	4.38	3.669	4.506	3.795	4.114	3.4	4.243	3.725
HCM Lane V/C Ratio	0	0.035	0.06	0	0.003	0.55	0.017	0.004	0.498
HCM Control Delay	9.4	9.6	9	9.5	8.8	16.7	8.5	9.3	14.6
HCM Lane LOS	N	A	A	N	A	C	A	A	B
HCM 95th-tile Q	0	0.1	0.2	0	0	3.3	0.1	0	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	369	59	287	682	31	448	29	487	20	21	21
Future Volume (veh/h)	108	369	59	287	682	31	448	29	487	20	21	21
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	117	401	64	312	741	34	487	32	0	22	23	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	186	717	320	354	1052	469	532	30		340	332	
Arrive On Green	0.11	0.22	0.22	0.21	0.32	0.32	0.36	0.36	0.00	0.36	0.36	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	1256	82	1485	772	929	1485
Grp Volume(v), veh/h	117	401	64	312	741	34	519	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1338	0	1485	1701	0	1485
Q Serve(g_s), s	5.6	9.0	3.0	15.2	16.4	1.3	28.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.6	9.0	3.0	15.2	16.4	1.3	30.0	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	186	717	320	354	1052	469	562	0		673	0	
V/C Ratio(X)	0.63	0.56	0.20	0.88	0.70	0.07	0.92	0.00		0.07	0.00	
Avail Cap(c_a), veh/h	995	1985	885	398	1985	885	562	0		673	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	35.6	29.3	27.0	32.0	25.2	20.1	27.9	0.0	0.0	17.7	0.0	0.0
Incr Delay (d2), s/veh	7.3	1.5	0.7	20.9	1.9	0.1	22.6	0.0	0.0	0.2	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	3.5	1.0	7.5	6.0	0.4	13.2	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	30.8	27.6	52.9	27.1	20.2	50.5	0.0	0.0	17.9	0.0	0.0
LnGrp LOS	D	C	C	D	C	C	D	A		B	A	
Approach Vol, veh/h		582			1087			519	A		45	A
Approach Delay, s/veh		32.9			34.3			50.5			17.9	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.8	24.1		36.0	15.3	32.5		36.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	17.2	11.0		3.4	7.6	18.4		32.0
Green Ext Time (p_c), s	0.6	4.7		0.3	1.0	8.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	15	344	0	0	0	406	2	0	0	0	0	0	8
Future Vol, veh/h	15	344	0	0	0	406	2	0	0	0	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10	10	0	0	0	10	10	10
Mvmt Flow	16	374	0	0	0	441	2	0	0	0	0	0	9

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	443	0	-	273	-	-	0			-	-	222
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	1059	-	0	1057	0	-	-			0	0	758
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	1059	-	-	1057	-	-	-			-	0	758
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	1059	-	1057	-	-	758
HCM Lane V/C Ratio	0.015	-	-	-	-	0.011
HCM Control Delay (s)	8.5	-	0	-	-	9.8
HCM Lane LOS	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	-	0	-	-	0

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	0	254	90	95	390	18	6
Future Volume (vph)	0	254	90	95	390	18	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0
Lane Util. Factor		0.91		1.00	0.91	1.00	1.00
Frt		0.96		1.00	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		4530		1641	4715	1641	1468
Flt Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		4530		1641	4715	1641	1468
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	318	112	119	488	22	8
RTOR Reduction (vph)	0	69	0	0	0	0	8
Lane Group Flow (vph)	0	362	0	119	488	23	0
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%
Turn Type	Prot	NA		Prot	NA	Prot	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		17.1		8.0	31.1	0.8	0.8
Effective Green, g (s)		17.1		8.0	31.1	0.8	0.8
Actuated g/C Ratio		0.39		0.18	0.71	0.02	0.02
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)		2.0		3.0	2.0	1.0	1.0
Lane Grp Cap (vph)		1764		299	3340	29	26
v/s Ratio Prot		c0.08		c0.07	0.10	c0.01	
v/s Ratio Perm							0.00
v/c Ratio		0.21		0.40	0.15	0.79	0.01
Uniform Delay, d1		8.9		15.8	2.1	21.5	21.2
Progression Factor		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.0		0.9	0.0	79.5	0.0
Delay (s)		8.9		16.7	2.1	101.0	21.2
Level of Service		A		B	A	F	C
Approach Delay (s)		8.9			5.0	80.4	
Approach LOS		A			A	F	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	43.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	322	25	47	363	68	0	0	138	14
Future Volume (veh/h)	0	0	0	322	25	47	363	68	0	0	138	14
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				358	28	52	403	76	0	0	153	16
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				415	32	60	478	905	0	0	211	22
Arrive On Green				0.31	0.31	0.31	0.29	0.52	0.00	0.00	0.14	0.14
Sat Flow, veh/h				1348	105	196	1668	1752	0	0	1559	163
Grp Volume(v), veh/h				438	0	0	403	76	0	0	0	169
Grp Sat Flow(s),veh/h/ln				1649	0	0	1668	1752	0	0	0	1722
Q Serve(g_s), s				13.0	0.0	0.0	11.8	1.1	0.0	0.0	0.0	4.9
Cycle Q Clear(g_c), s				13.0	0.0	0.0	11.8	1.1	0.0	0.0	0.0	4.9
Prop In Lane				0.82		0.12	1.00		0.00	0.00		0.09
Lane Grp Cap(c), veh/h				508	0	0	478	905	0	0	0	233
V/C Ratio(X)				0.86	0.00	0.00	0.84	0.08	0.00	0.00	0.00	0.72
Avail Cap(c_a), veh/h				1114	0	0	966	905	0	0	0	831
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				16.9	0.0	0.0	17.4	6.3	0.0	0.0	0.0	21.5
Incr Delay (d2), s/veh				1.7	0.0	0.0	3.1	0.0	0.0	0.0	0.0	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.3	0.0	0.0	4.1	0.3	0.0	0.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				18.6	0.0	0.0	20.5	6.3	0.0	0.0	0.0	23.1
LnGrp LOS				B	A	A	C	A	A	A	A	C
Approach Vol, veh/h					438			479			169	
Approach Delay, s/veh					18.6			18.2			23.1	
Approach LOS					B			B			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		31.7			19.8	11.9		20.1				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		3.1			13.8	6.9		15.0				
Green Ext Time (p_c), s		0.1			1.1	0.1		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	159	293	0	0	0	0	370	681	82	378	0
Future Volume (veh/h)	61	159	293	0	0	0	0	370	681	82	378	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	66	173	318				0	402	740	89	411	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	114	298	353				0	958	812	113	1156	0
Arrive On Green	0.24	0.24	0.24				0.00	0.55	0.55	0.07	0.66	0.00
Sat Flow, veh/h	477	1251	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	239	0	318				0	402	740	89	411	0
Grp Sat Flow(s),veh/h/ln	1728	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	10.9	0.0	18.5				0.0	12.0	40.1	4.7	9.3	0.0
Cycle Q Clear(g_c), s	10.9	0.0	18.5				0.0	12.0	40.1	4.7	9.3	0.0
Prop In Lane	0.28		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	411	0	353				0	958	812	113	1156	0
V/C Ratio(X)	0.58	0.00	0.90				0.00	0.42	0.91	0.78	0.36	0.00
Avail Cap(c_a), veh/h	485	0	417				0	1082	917	281	1156	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.0	0.0	32.9				0.0	11.9	18.2	40.8	6.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	18.4				0.0	0.4	12.7	11.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	8.2				0.0	4.2	14.5	2.2	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	51.3				0.0	12.3	30.9	52.0	7.0	0.0
LnGrp LOS	C	A	D				A	B	C	D	A	A
Approach Vol, veh/h		557						1142			500	
Approach Delay, s/veh		42.4						24.4			15.0	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.1	53.6		25.4		63.6
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	6.7	42.1		20.5		11.3
Green Ext Time (p_c), s	0.1	6.6		0.7		2.8

Intersection Summary	
HCM 6th Ctrl Delay	26.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	380	59	20	244	144	44	415	32	138	183	242
Future Volume (veh/h)	397	380	59	20	244	144	44	415	32	138	183	242
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	432	413	64	22	265	157	48	451	35	150	199	263
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	383	1261	563	50	603	254	92	683	305	185	879	415
Arrive On Green	0.22	0.36	0.36	0.03	0.17	0.17	0.05	0.21	0.21	0.11	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	432	413	64	22	265	157	48	451	35	150	199	263
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	15.0	5.9	1.9	0.9	4.7	6.8	1.8	8.6	1.3	6.1	3.2	10.2
Cycle Q Clear(g_c), s	15.0	5.9	1.9	0.9	4.7	6.8	1.8	8.6	1.3	6.1	3.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	1261	563	50	603	254	92	683	305	185	879	415
V/C Ratio(X)	1.13	0.33	0.11	0.44	0.44	0.62	0.52	0.66	0.11	0.81	0.23	0.63
Avail Cap(c_a), veh/h	383	1527	681	361	1527	643	383	1442	643	361	1442	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	16.2	14.9	33.0	25.7	26.6	32.0	25.3	22.4	30.1	19.9	22.5
Incr Delay (d2), s/veh	85.7	0.3	0.2	2.3	0.9	4.2	1.7	1.9	0.3	3.2	0.2	2.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	2.2	0.6	0.4	1.8	2.5	0.8	3.3	0.4	2.4	1.2	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.8	16.4	15.0	35.3	26.6	30.8	33.6	27.2	22.7	33.2	20.2	25.2
LnGrp LOS	F	B	B	D	C	C	C	C	C	C	C	C
Approach Vol, veh/h		909			444			534			612	
Approach Delay, s/veh		62.1			28.5			27.5			25.6	
Approach LOS		E			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	19.7	7.1	29.8	8.6	23.8	20.0	16.8
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	8.1	10.6	2.9	7.9	3.8	12.2	17.0	8.8
Green Ext Time (p_c), s	0.1	3.6	0.0	3.6	0.0	3.3	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	821	0	0	446	92	0	0	0	169	0	129
Future Volume (veh/h)	133	821	0	0	446	92	0	0	0	169	0	129
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	145	892	0	0	485	100	0	0	0	184	0	140
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	177	2614	0	0	2095	882	0	289	0	294	0	259
Arrive On Green	0.10	0.74	0.00	0.00	0.59	0.59	0.00	0.00	0.00	0.16	0.00	0.16
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	145	892	0	0	485	100	0	0	0	184	0	140
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	7.7	8.4	0.0	0.0	6.2	2.8	0.0	0.0	0.0	12.9	0.0	7.8
Cycle Q Clear(g_c), s	7.7	8.4	0.0	0.0	6.2	2.8	0.0	0.0	0.0	12.9	0.0	7.8
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	177	2614	0	0	2095	882	0	289	0	294	0	259
V/C Ratio(X)	0.82	0.34	0.00	0.00	0.23	0.11	0.00	0.00	0.00	0.63	0.00	0.54
Avail Cap(c_a), veh/h	285	2614	0	0	2095	882	0	520	0	469	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.3	4.3	0.0	0.0	9.2	8.5	0.0	0.0	0.0	38.9	0.0	36.8
Incr Delay (d2), s/veh	4.1	0.4	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.8	0.0	0.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.4	0.0	0.0	2.2	0.9	0.0	0.0	0.0	4.3	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	4.7	0.0	0.0	9.4	8.7	0.0	0.0	0.0	39.7	0.0	37.4
LnGrp LOS	D	A	A	A	A	A	A	A	A	D	A	D
Approach Vol, veh/h		1037			585			0			324	
Approach Delay, s/veh		10.5			9.3			0.0			38.7	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		75.7		20.3	14.1	61.5		20.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		58.5		28.5	15.5	38.5		28.5
Max Q Clear Time (g_c+I1), s		10.4		14.9	9.7	8.2		0.0
Green Ext Time (p_c), s		4.8		0.9	0.1	2.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	504	32	44	401	0	22	0	37	0	0	0
Future Volume (veh/h)	0	504	32	44	401	0	22	0	37	0	0	0
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	0	548	35	48	436	0	24	0	40	0	0	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	5	1171	75	90	1816	0	50	0	200	5	5	0
Arrive On Green	0.00	0.37	0.37	0.05	0.55	0.00	0.03	0.00	0.13	0.00	0.00	0.00
Sat Flow, veh/h	1668	3177	203	1668	3416	0	1668	0	1485	1668	1752	0
Grp Volume(v), veh/h	0	287	296	48	436	0	24	0	40	0	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1715	1668	1664	0	1668	0	1485	1668	1752	0
Q Serve(g_s), s	0.0	4.3	4.3	0.9	2.2	0.0	0.5	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.3	4.3	0.9	2.2	0.0	0.5	0.0	0.8	0.0	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	5	613	632	90	1816	0	50	0	200	5	5	0
V/C Ratio(X)	0.00	0.47	0.47	0.53	0.24	0.00	0.48	0.00	0.20	0.00	0.00	0.00
Avail Cap(c_a), veh/h	769	2300	2371	1281	6134	0	1025	0	2052	769	1883	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.8	7.8	15.0	3.9	0.0	15.5	0.0	12.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	1.8	0.0	0.0	2.6	0.0	0.2	0.0	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.8	0.3	0.1	0.0	0.2	0.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	8.0	16.8	3.9	0.0	18.2	0.0	12.7	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	A	A	B	A	B	A	A	A
Approach Vol, veh/h		583			484			64			0	
Approach Delay, s/veh		8.0			5.2			14.8			0.0	
Approach LOS		A			A			B				

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	17.8	0.0	9.0	0.0	23.6	5.0	4.0
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	2.9	6.3	0.0	2.8	0.0	4.2	2.5	0.0
Green Ext Time (p_c), s	0.0	2.0	0.0	0.1	0.0	1.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Intersection	
Intersection Delay, s/veh	45.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	28	0	245	1	2	3	109	306	2	175	5
Future Vol, veh/h	6	28	0	245	1	2	3	109	306	2	175	5
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	9	44	0	383	2	3	5	170	478	3	273	8
Number of Lanes	1	1	0	1	1	0	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	13.9	59.4	48.2	28
HCM LOS	B	F	E	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	33%	0%	97%
Vol Right, %	0%	0%	100%	0%	0%	0%	67%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	109	306	6	28	245	3	2	180
LT Vol	3	0	0	6	0	245	0	2	0
Through Vol	0	109	0	0	28	0	1	0	175
RT Vol	0	0	306	0	0	0	2	0	5
Lane Flow Rate	5	170	478	9	44	383	5	3	281
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.011	0.38	0.97	0.027	0.12	0.937	0.01	0.008	0.681
Departure Headway (Hd)	8.535	8.022	7.303	10.374	9.854	8.815	7.828	9.249	8.711
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	450	497	345	364	413	459	387	416
Service Time	6.259	5.745	5.026	8.144	7.624	6.539	5.551	6.999	6.461
HCM Lane V/C Ratio	0.012	0.378	0.962	0.026	0.121	0.927	0.011	0.008	0.675
HCM Control Delay	11.4	15.6	60.2	13.4	14	60	10.6	12.1	28.2
HCM Lane LOS	B	C	F	B	B	F	B	B	D
HCM 95th-tile Q	0	1.8	12.5	0.1	0.4	10.5	0	0	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	767	148	392	421	37	62	43	414	34	27	54
Future Volume (veh/h)	62	767	148	392	421	37	62	43	414	34	27	54
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	67	834	161	426	458	40	67	47	0	37	29	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	165	1262	563	434	1797	802	173	95		167	109	
Arrive On Green	0.10	0.38	0.38	0.26	0.54	0.54	0.13	0.13	0.00	0.13	0.13	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	777	747	1485	737	853	1485
Grp Volume(v), veh/h	67	834	161	426	458	40	114	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1524	0	1485	1590	0	1485
Q Serve(g_s), s	2.9	16.0	5.8	19.5	5.6	1.0	2.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	16.0	5.8	19.5	5.6	1.0	5.2	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.59		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	165	1262	563	434	1797	802	268	0		275	0	
V/C Ratio(X)	0.41	0.66	0.29	0.98	0.25	0.05	0.43	0.00		0.24	0.00	
Avail Cap(c_a), veh/h	1084	2163	965	434	2163	965	649	0		655	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.5	19.8	16.6	28.3	9.4	8.4	31.5	0.0	0.0	30.5	0.0	0.0
Incr Delay (d2), s/veh	3.4	1.3	0.6	38.7	0.2	0.1	3.8	0.0	0.0	1.6	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.6	1.8	11.4	1.6	0.2	2.1	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	21.1	17.2	67.0	9.6	8.4	35.3	0.0	0.0	32.1	0.0	0.0
LnGrp LOS	D	C	B	E	A	A	D	A		C	A	
Approach Vol, veh/h		1062			924			114	A		66	A
Approach Delay, s/veh		21.4			36.0			35.3			32.1	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.0	35.2		15.8	13.6	47.6		15.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	21.5	18.0		4.7	4.9	7.6		7.2
Green Ext Time (p_c), s	0.0	11.2		0.5	0.5	5.0		1.0

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	8	533	0	0	0	425	1	0	0	0	0	0	20
Future Vol, veh/h	8	533	0	0	0	425	1	0	0	0	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10	10	0	0	0	10	10	10
Mvmt Flow	9	579	0	0	0	462	1	0	0	0	0	0	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	463	0	-	423	-	-	0			-	-	232
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	1040	-	0	871	0	-	-			0	0	746
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	1040	-	-	871	-	-	-			-	0	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	1040	-	871	-	-	746
HCM Lane V/C Ratio	0.008	-	-	-	-	0.029
HCM Control Delay (s)	8.5	-	0	-	-	10
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0	-	-	0.1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	0	481	52	74	330	96	28
Future Volume (vph)	0	481	52	74	330	96	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	6.0	6.0
Lane Util. Factor		0.91		1.00	0.91	1.00	1.00
Frt		0.99		1.00	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)		4646		1641	4715	1641	1468
Flt Permitted		1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)		4646		1641	4715	1641	1468
Peak-hour factor, PHF	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	0	601	65	92	412	120	35
RTOR Reduction (vph)	0	18	0	0	0	0	31
Lane Group Flow (vph)	0	648	0	93	413	120	4
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%
Turn Type	Prot	NA		Prot	NA	Prot	Perm
Protected Phases	5	2		1	6	8	
Permitted Phases							8
Actuated Green, G (s)		15.5		5.6	27.1	5.2	5.2
Effective Green, g (s)		15.5		5.6	27.1	5.2	5.2
Actuated g/C Ratio		0.35		0.13	0.61	0.12	0.12
Clearance Time (s)		6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)		2.0		3.0	2.0	1.0	1.0
Lane Grp Cap (vph)		1625		207	2884	192	172
v/s Ratio Prot		c0.14		c0.06	0.09	c0.07	
v/s Ratio Perm							0.00
v/c Ratio		0.40		0.45	0.14	0.62	0.02
Uniform Delay, d1		10.9		17.9	3.7	18.6	17.3
Progression Factor		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1		1.6	0.0	4.5	0.0
Delay (s)		10.9		19.5	3.7	23.1	17.3
Level of Service		B		B	A	C	B
Approach Delay (s)		10.9			6.6	21.8	
Approach LOS		B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	44.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

A3. Existing Plus Background Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	638	50	35	216	22	0	0	84	21
Future Volume (veh/h)	0	0	0	638	50	35	216	22	0	0	84	21
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				709	56	39	240	24	0	0	93	23
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				744	59	41	295	616	0	0	134	33
Arrive On Green				0.51	0.51	0.51	0.18	0.35	0.00	0.00	0.10	0.10
Sat Flow, veh/h				1467	116	81	1668	1752	0	0	1356	335
Grp Volume(v), veh/h				804	0	0	240	24	0	0	0	116
Grp Sat Flow(s),veh/h/ln				1664	0	0	1668	1752	0	0	0	1691
Q Serve(g_s), s				29.7	0.0	0.0	8.9	0.6	0.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s				29.7	0.0	0.0	8.9	0.6	0.0	0.0	0.0	4.3
Prop In Lane				0.88		0.05	1.00		0.00	0.00		0.20
Lane Grp Cap(c), veh/h				843	0	0	295	616	0	0	0	167
V/C Ratio(X)				0.95	0.00	0.00	0.81	0.04	0.00	0.00	0.00	0.69
Avail Cap(c_a), veh/h				905	0	0	778	681	0	0	0	657
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				15.1	0.0	0.0	25.5	13.7	0.0	0.0	0.0	28.0
Incr Delay (d2), s/veh				18.5	0.0	0.0	4.1	0.0	0.0	0.0	0.0	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.2	0.0	0.0	3.5	0.2	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				33.6	0.0	0.0	29.5	13.7	0.0	0.0	0.0	30.0
LnGrp LOS				C	A	A	C	B	A	A	A	C
Approach Vol, veh/h					804			264			116	
Approach Delay, s/veh					33.6			28.1			30.0	
Approach LOS					C			C			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		27.5			16.3	11.3		36.8				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		2.6			10.9	6.3		31.7				
Green Ext Time (p_c), s		0.0			0.6	0.1		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	52	372	0	0	0	0	221	453	36	686	0
Future Volume (veh/h)	17	52	372	0	0	0	0	221	453	36	686	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	18	57	404				0	240	492	39	746	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	128	406	459				0	738	626	67	932	0
Arrive On Green	0.31	0.31	0.31				0.00	0.42	0.42	0.04	0.53	0.00
Sat Flow, veh/h	415	1316	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	75	0	404				0	240	492	39	746	0
Grp Sat Flow(s),veh/h/ln	1731	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	1.8	0.0	14.8				0.0	5.2	16.4	1.3	19.8	0.0
Cycle Q Clear(g_c), s	1.8	0.0	14.8				0.0	5.2	16.4	1.3	19.8	0.0
Prop In Lane	0.24		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	535	0	459				0	738	626	67	932	0
V/C Ratio(X)	0.14	0.00	0.88				0.00	0.33	0.79	0.58	0.80	0.00
Avail Cap(c_a), veh/h	757	0	649				0	1686	1429	438	1686	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	18.8				0.0	11.1	14.3	26.9	10.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	7.7				0.0	0.4	3.2	7.6	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	5.4				0.0	1.7	4.8	0.6	5.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	26.5				0.0	11.4	17.5	34.6	13.2	0.0
LnGrp LOS	B	A	C				A	B	B	C	B	A
Approach Vol, veh/h		479						732			785	
Approach Delay, s/veh		24.6						15.5			14.3	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.3	29.0		21.9		35.3
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	3.3	18.4		16.8		21.8
Green Ext Time (p_c), s	0.0	5.7		0.9		6.1

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	325	48	50	289	146	27	163	93	305	319	440
Future Volume (veh/h)	294	325	48	50	289	146	27	163	93	305	319	440
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	353	52	54	314	159	29	177	101	332	347	478
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	336	1077	480	88	593	250	63	640	285	317	1153	545
Arrive On Green	0.19	0.31	0.31	0.05	0.17	0.17	0.04	0.19	0.19	0.19	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	353	52	54	314	159	29	177	101	332	347	478
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	14.1	6.1	1.9	2.5	6.4	7.9	1.3	3.6	4.7	15.0	6.0	22.5
Cycle Q Clear(g_c), s	14.1	6.1	1.9	2.5	6.4	7.9	1.3	3.6	4.7	15.0	6.0	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1077	480	88	593	250	63	640	285	317	1153	545
V/C Ratio(X)	0.95	0.33	0.11	0.61	0.53	0.64	0.46	0.28	0.35	1.05	0.30	0.88
Avail Cap(c_a), veh/h	336	1339	597	317	1339	564	336	1265	564	317	1265	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	21.2	19.7	36.6	30.0	30.6	37.3	27.2	27.6	32.0	18.8	24.2
Incr Delay (d2), s/veh	36.5	0.3	0.2	2.6	1.3	4.6	1.9	0.4	1.3	63.5	0.2	14.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	2.4	0.6	1.0	2.6	2.9	0.6	1.4	1.6	11.2	2.2	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	21.5	19.9	39.2	31.2	35.1	39.2	27.6	28.9	95.5	19.1	38.3
LnGrp LOS	E	C	B	D	C	D	D	C	C	F	B	D
Approach Vol, veh/h		725			527			307			1157	
Approach Delay, s/veh		42.0			33.2			29.1			49.0	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	20.7	9.2	29.1	7.8	32.9	20.0	18.3
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	17.0	6.7	4.5	8.1	3.3	24.5	16.1	9.9
Green Ext Time (p_c), s	0.0	2.0	0.0	3.0	0.0	2.8	0.0	3.4

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	467	0	0	1074	159	0	0	0	109	0	81
Future Volume (veh/h)	95	467	0	0	1074	159	0	0	0	109	0	81
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	103	508	0	0	1167	173	0	0	0	118	0	88
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	206	2311	0	0	1605	676	0	310	0	369	0	279
Arrive On Green	0.12	0.66	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.18	0.00	0.18
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	103	508	0	0	1167	173	0	0	0	118	0	88
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	2.9	3.1	0.0	0.0	14.5	3.9	0.0	0.0	0.0	4.3	0.0	2.6
Cycle Q Clear(g_c), s	2.9	3.1	0.0	0.0	14.5	3.9	0.0	0.0	0.0	4.3	0.0	2.6
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	2311	0	0	1605	676	0	310	0	369	0	279
V/C Ratio(X)	0.50	0.22	0.00	0.00	0.73	0.26	0.00	0.00	0.00	0.32	0.00	0.32
Avail Cap(c_a), veh/h	985	3274	0	0	3274	1379	0	813	0	997	0	1022
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.3	3.7	0.0	0.0	11.9	9.0	0.0	0.0	0.0	20.0	0.0	19.3
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0	0.6	0.2	0.0	0.0	0.0	0.2	0.0	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.6	0.0	0.0	4.6	1.0	0.0	0.0	0.0	1.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	3.8	0.0	0.0	12.6	9.2	0.0	0.0	0.0	20.2	0.0	19.5
LnGrp LOS	C	A	A	A	B	A	A	A	A	C	A	B
Approach Vol, veh/h		611			1340			0			206	
Approach Delay, s/veh		7.0			12.1			0.0			19.9	
Approach LOS		A			B						B	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.8		14.0	10.8	29.0		14.0
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	50.0		35.0	30.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	5.1		6.3	4.9	16.5		0.0
Green Ext Time (p_c), s	2.4		0.7	0.2	8.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	497	37	45	454	10	5	0	1	4	0	14
Future Volume (veh/h)	60	497	37	45	454	10	5	0	1	4	0	14
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	65	540	40	49	493	11	5	0	1	4	0	15
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	112	1125	83	90	1149	26	11	0	78	9	0	76
Arrive On Green	0.07	0.36	0.36	0.05	0.35	0.35	0.01	0.00	0.05	0.01	0.00	0.05
Sat Flow, veh/h	1668	3142	232	1668	3328	74	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	65	285	295	49	246	258	5	0	1	4	0	15
Grp Sat Flow(s),veh/h/ln	1668	1664	1710	1668	1664	1738	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.3	4.6	4.6	1.0	4.0	4.0	0.1	0.0	0.0	0.1	0.0	0.3
Cycle Q Clear(g_c), s	1.3	4.6	4.6	1.0	4.0	4.0	0.1	0.0	0.0	0.1	0.0	0.3
Prop In Lane	1.00		0.14	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	112	596	612	90	575	600	11	0	78	9	0	76
V/C Ratio(X)	0.58	0.48	0.48	0.54	0.43	0.43	0.44	0.00	0.01	0.44	0.00	0.20
Avail Cap(c_a), veh/h	720	2155	2214	1200	2873	3001	960	0	1922	720	0	1495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	8.6	8.6	16.0	8.7	8.7	17.2	0.0	15.6	17.2	0.0	15.8
Incr Delay (d2), s/veh	1.8	0.2	0.2	1.9	0.2	0.2	9.7	0.0	0.0	11.9	0.0	0.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.9	1.0	0.3	0.8	0.9	0.1	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	8.9	8.9	17.9	8.9	8.9	26.9	0.0	15.6	29.1	0.0	16.3
LnGrp LOS	B	A	A	B	A	A	C	A	B	C	A	B
Approach Vol, veh/h		645			553			6			19	
Approach Delay, s/veh		9.7			9.7			25.0			19.0	
Approach LOS		A			A			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	18.2	4.2	6.4	6.3	17.8	4.2	6.4
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	3.3	6.6	2.1	2.0	3.3	6.0	2.1	2.3
Green Ext Time (p_c), s	0.0	2.0	0.0	0.0	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	380	90	96	469	53	18	0	6	28	0	16
Future Volume (veh/h)	17	380	90	96	469	53	18	0	6	28	0	16
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	21	475	112	120	586	66	22	0	8	35	0	20
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	68	971	223	277	1795	557	137	0	122	72	0	64
Arrive On Green	0.04	0.25	0.25	0.17	0.38	0.38	0.08	0.00	0.08	0.04	0.00	0.04
Sat Flow, veh/h	1668	3888	892	1668	4782	1485	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	21	387	200	120	586	66	22	0	8	35	0	20
Grp Sat Flow(s),veh/h/ln	1668	1594	1591	1668	1594	1485	1668	0	1485	1668	0	1485
Q Serve(g_s), s	0.6	5.0	5.2	3.1	4.2	1.4	0.6	0.0	0.2	1.0	0.0	0.6
Cycle Q Clear(g_c), s	0.6	5.0	5.2	3.1	4.2	1.4	0.6	0.0	0.2	1.0	0.0	0.6
Prop In Lane	1.00		0.56	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	797	398	277	1795	557	137	0	122	72	0	64
V/C Ratio(X)	0.31	0.49	0.50	0.43	0.33	0.12	0.16	0.00	0.07	0.48	0.00	0.31
Avail Cap(c_a), veh/h	278	1925	961	347	3087	958	1251	0	1113	625	0	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	15.4	15.4	18.0	10.7	9.8	20.5	0.0	20.3	22.4	0.0	22.3
Incr Delay (d2), s/veh	0.9	0.2	0.4	1.1	0.0	0.0	0.2	0.0	0.1	5.0	0.0	2.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.5	1.1	1.1	0.3	0.2	0.0	0.1	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	15.5	15.8	19.0	10.7	9.8	20.7	0.0	20.4	27.4	0.0	25.0
LnGrp LOS	C	B	B	B	B	A	C	A	C	C	A	C
Approach Vol, veh/h		608			772			30			55	
Approach Delay, s/veh		15.9			11.9			20.6			26.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.0	18.0		6.1	8.0	24.0		10.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	29.0		18.0	8.0	31.0		36.0
Max Q Clear Time (g_c+I1), s	5.1	7.2		3.0	2.6	6.2		2.6
Green Ext Time (p_c), s	0.1	1.3		0.1	0.0	1.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Future Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	0	0	2	310	8	3	0	19	36	2	294	6
Number of Lanes	1	1	0	1	1	0	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	8.8	16.4	9.2	14.6
HCM LOS	A	C	A	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	0%	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	100%	0%	100%	0%	0%	70%	0%	98%
Vol Right, %	0%	0%	100%	0%	100%	0%	30%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	17	32	0	2	276	10	2	267
LT Vol	0	0	0	0	0	276	0	2	0
Through Vol	0	17	0	0	0	0	7	0	262
RT Vol	0	0	32	0	2	0	3	0	5
Lane Flow Rate	0	19	36	0	2	310	11	2	300
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0	0.035	0.059	0	0.004	0.551	0.018	0.004	0.5
Departure Headway (Hd)	6.643	6.643	5.932	6.766	6.056	6.392	5.678	6.517	5.999
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	539	604	0	591	564	632	550	603
Service Time	4.38	4.38	3.669	4.506	3.795	4.114	3.4	4.243	3.725
HCM Lane V/C Ratio	0	0.035	0.06	0	0.003	0.55	0.017	0.004	0.498
HCM Control Delay	9.4	9.6	9	9.5	8.8	16.7	8.5	9.3	14.6
HCM Lane LOS	N	A	A	N	A	C	A	A	B
HCM 95th-tile Q	0	0.1	0.2	0	0	3.3	0.1	0	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	375	66	287	698	31	466	29	487	20	21	21
Future Volume (veh/h)	108	375	66	287	698	31	466	29	487	20	21	21
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	117	408	72	312	759	34	507	32	0	22	23	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	185	735	328	353	1071	478	529	28		338	330	
Arrive On Green	0.11	0.22	0.22	0.21	0.32	0.32	0.35	0.35	0.00	0.35	0.35	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	1258	79	1485	773	930	1485
Grp Volume(v), veh/h	117	408	72	312	759	34	539	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1337	0	1485	1703	0	1485
Q Serve(g_s), s	5.7	9.2	3.4	15.3	16.9	1.3	28.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	9.2	3.4	15.3	16.9	1.3	30.0	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	185	735	328	353	1071	478	557	0		667	0	
V/C Ratio(X)	0.63	0.56	0.22	0.88	0.71	0.07	0.97	0.00		0.07	0.00	
Avail Cap(c_a), veh/h	986	1968	878	395	1968	878	557	0		667	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.0	29.3	27.0	32.3	25.2	19.9	28.9	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	7.5	1.4	0.7	21.3	1.9	0.1	30.7	0.0	0.0	0.2	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.6	1.2	7.7	6.1	0.4	15.2	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	30.7	27.7	53.6	27.1	20.0	59.6	0.0	0.0	18.2	0.0	0.0
LnGrp LOS	D	C	C	D	C	C	E	A		B	A	
Approach Vol, veh/h		597			1105			539	A		45	A
Approach Delay, s/veh		32.8			34.4			59.6			18.2	
Approach LOS		C			C			E			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.9	24.7		36.0	15.4	33.2		36.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	17.3	11.2		3.4	7.7	18.9		32.0
Green Ext Time (p_c), s	0.6	4.9		0.3	1.0	8.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	15	487	0	0	0	501	2	0	0	0	0	0	8
Future Vol, veh/h	15	487	0	0	0	501	2	0	0	0	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10	10	0	0	0	10	10	10
Mvmt Flow	16	529	0	0	0	545	2	0	0	0	0	0	9

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	547	0	-	386	-	-	0			-	-	274
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	965	-	0	913	0	-	-			0	0	700
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	965	-	-	913	-	-	-			-	0	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	965	-	913	-	-	700
HCM Lane V/C Ratio	0.017	-	-	-	-	0.012
HCM Control Delay (s)	8.8	-	0	-	-	10.2
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	358	25	47	460	68	0	0	138	14
Future Volume (veh/h)	0	0	0	358	25	47	460	68	0	0	138	14
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				398	28	52	511	76	0	0	153	16
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				443	31	58	567	947	0	0	198	21
Arrive On Green				0.32	0.32	0.32	0.34	0.54	0.00	0.00	0.13	0.13
Sat Flow, veh/h				1374	97	180	1668	1752	0	0	1559	163
Grp Volume(v), veh/h				478	0	0	511	76	0	0	0	169
Grp Sat Flow(s),veh/h/ln				1651	0	0	1668	1752	0	0	0	1722
Q Serve(g_s), s				18.3	0.0	0.0	19.3	1.4	0.0	0.0	0.0	6.3
Cycle Q Clear(g_c), s				18.3	0.0	0.0	19.3	1.4	0.0	0.0	0.0	6.3
Prop In Lane				0.83		0.11	1.00		0.00	0.00		0.09
Lane Grp Cap(c), veh/h				532	0	0	567	947	0	0	0	219
V/C Ratio(X)				0.90	0.00	0.00	0.90	0.08	0.00	0.00	0.00	0.77
Avail Cap(c_a), veh/h				871	0	0	755	947	0	0	0	649
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				21.4	0.0	0.0	20.8	7.3	0.0	0.0	0.0	28.0
Incr Delay (d2), s/veh				4.6	0.0	0.0	10.8	0.0	0.0	0.0	0.0	2.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.0	0.0	0.0	8.2	0.4	0.0	0.0	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				26.1	0.0	0.0	31.6	7.3	0.0	0.0	0.0	30.2
LnGrp LOS				C	A	A	C	A	A	A	A	C
Approach Vol, veh/h					478			587			169	
Approach Delay, s/veh					26.1			28.5			30.2	
Approach LOS					C			C			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		40.8			27.4	13.3		25.6				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		3.4			21.3	8.3		20.3				
Green Ext Time (p_c), s		0.1			1.2	0.1		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			27.8									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	159	334	0	0	0	0	467	760	82	414	0
Future Volume (veh/h)	61	159	334	0	0	0	0	467	760	82	414	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	66	173	363				0	508	826	89	450	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	119	313	372				0	965	818	113	1154	0
Arrive On Green	0.25	0.25	0.25				0.00	0.55	0.55	0.07	0.66	0.00
Sat Flow, veh/h	477	1251	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	239	0	363				0	508	826	89	450	0
Grp Sat Flow(s),veh/h/ln	1728	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	12.0	0.0	24.2				0.0	18.3	55.0	5.2	11.8	0.0
Cycle Q Clear(g_c), s	12.0	0.0	24.2				0.0	18.3	55.0	5.2	11.8	0.0
Prop In Lane	0.28		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	433	0	372				0	965	818	113	1154	0
V/C Ratio(X)	0.55	0.00	0.98				0.00	0.53	1.01	0.79	0.39	0.00
Avail Cap(c_a), veh/h	433	0	372				0	965	818	251	1154	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.6	0.0	37.1				0.0	14.2	22.4	45.8	7.8	0.0
Incr Delay (d2), s/veh	0.9	0.0	40.2				0.0	0.7	34.0	11.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	12.6				0.0	6.7	24.3	2.5	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	0.0	77.3				0.0	14.9	56.4	57.4	8.1	0.0
LnGrp LOS	C	A	E				A	B	F	E	A	A
Approach Vol, veh/h		602						1334			539	
Approach Delay, s/veh		59.9						40.6			16.3	
Approach LOS		E						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	59.9		29.2		70.6
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	7.2	57.0		26.2		13.8
Green Ext Time (p_c), s	0.1	0.0		0.0		3.1

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	419	59	114	344	253	44	434	69	176	205	266
Future Volume (veh/h)	416	419	59	114	344	253	44	434	69	176	205	266
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	452	455	64	124	374	275	48	472	75	191	223	289
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	314	1159	517	154	859	362	85	670	299	225	958	453
Arrive On Green	0.18	0.33	0.33	0.09	0.24	0.24	0.05	0.20	0.20	0.13	0.29	0.29
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	452	455	64	124	374	275	48	472	75	191	223	289
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	15.0	8.4	2.4	6.1	7.6	14.5	2.2	11.1	3.6	9.4	4.3	13.5
Cycle Q Clear(g_c), s	15.0	8.4	2.4	6.1	7.6	14.5	2.2	11.1	3.6	9.4	4.3	13.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	1159	517	154	859	362	85	670	299	225	958	453
V/C Ratio(X)	1.44	0.39	0.12	0.80	0.44	0.76	0.57	0.70	0.25	0.85	0.23	0.64
Avail Cap(c_a), veh/h	314	1253	559	297	1253	528	314	1183	528	297	1183	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	21.8	19.8	37.5	27.0	29.6	39.3	31.4	28.4	35.7	22.9	26.2
Incr Delay (d2), s/veh	214.9	0.4	0.2	3.7	0.6	6.0	2.2	2.3	0.7	13.1	0.2	2.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.8	3.3	0.8	2.5	3.0	5.4	1.0	4.5	1.3	4.5	1.6	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	249.6	22.2	20.0	41.2	27.6	35.6	41.5	33.7	29.1	48.8	23.2	28.9
LnGrp LOS	F	C	C	D	C	D	D	C	C	D	C	C
Approach Vol, veh/h		971			773			595			703	
Approach Delay, s/veh		127.9			32.6			33.8			32.5	
Approach LOS		F			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	22.5	12.8	32.7	9.1	29.8	20.0	25.6
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	11.4	13.1	8.1	10.4	4.2	15.5	17.0	16.5
Green Ext Time (p_c), s	0.1	3.8	0.1	3.8	0.0	3.3	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	63.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	821	0	0	446	105	0	0	0	201	0	213
Future Volume (veh/h)	176	821	0	0	446	105	0	0	0	201	0	213
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	191	892	0	0	485	114	0	0	0	218	0	232
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	225	2517	0	0	1904	802	0	337	0	330	0	302
Arrive On Green	0.13	0.71	0.00	0.00	0.54	0.54	0.00	0.00	0.00	0.19	0.00	0.19
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	191	892	0	0	485	114	0	0	0	218	0	232
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	10.2	9.3	0.0	0.0	7.0	3.7	0.0	0.0	0.0	15.2	0.0	13.4
Cycle Q Clear(g_c), s	10.2	9.3	0.0	0.0	7.0	3.7	0.0	0.0	0.0	15.2	0.0	13.4
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	2517	0	0	1904	802	0	337	0	330	0	302
V/C Ratio(X)	0.85	0.35	0.00	0.00	0.25	0.14	0.00	0.00	0.00	0.66	0.00	0.77
Avail Cap(c_a), veh/h	285	2517	0	0	1904	802	0	520	0	469	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.0	5.3	0.0	0.0	11.8	11.0	0.0	0.0	0.0	37.5	0.0	36.7
Incr Delay (d2), s/veh	14.7	0.4	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.8	0.0	1.6
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	2.8	0.0	0.0	2.7	1.2	0.0	0.0	0.0	5.0	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	5.7	0.0	0.0	12.1	11.4	0.0	0.0	0.0	38.3	0.0	38.3
LnGrp LOS	E	A	A	A	B	B	A	A	A	D	A	D
Approach Vol, veh/h		1083			599			0			450	
Approach Delay, s/veh		14.5			12.0			0.0			38.3	
Approach LOS		B			B						D	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		73.0		23.0	16.7	56.3		23.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		58.5		28.5	15.5	38.5		28.5
Max Q Clear Time (g_c+I1), s		11.3		17.2	12.2	9.0		0.0
Green Ext Time (p_c), s		4.8		1.2	0.1	2.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	592	32	44	590	4	22	0	37	13	0	52
Future Volume (veh/h)	21	592	32	44	590	4	22	0	37	13	0	52
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	23	643	35	48	641	4	24	0	40	14	0	57
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	47	943	51	86	1075	7	49	0	277	30	0	260
Arrive On Green	0.03	0.29	0.29	0.05	0.32	0.32	0.03	0.00	0.19	0.02	0.00	0.18
Sat Flow, veh/h	1668	3210	175	1668	3391	21	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	23	333	345	48	315	330	24	0	40	14	0	57
Grp Sat Flow(s),veh/h/ln	1668	1664	1720	1668	1664	1748	1668	0	1485	1668	0	1485
Q Serve(g_s), s	0.6	7.2	7.2	1.1	6.5	6.5	0.6	0.0	0.9	0.3	0.0	1.3
Cycle Q Clear(g_c), s	0.6	7.2	7.2	1.1	6.5	6.5	0.6	0.0	0.9	0.3	0.0	1.3
Prop In Lane	1.00		0.10	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	47	489	505	86	528	554	49	0	277	30	0	260
V/C Ratio(X)	0.49	0.68	0.68	0.56	0.60	0.60	0.49	0.00	0.14	0.47	0.00	0.22
Avail Cap(c_a), veh/h	613	1833	1895	1021	2444	2567	817	0	1635	613	0	1272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	12.7	12.7	18.9	11.7	11.8	19.5	0.0	13.9	19.9	0.0	14.4
Incr Delay (d2), s/veh	2.9	0.6	0.6	2.1	0.4	0.4	2.8	0.0	0.1	4.1	0.0	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.9	2.0	0.4	1.7	1.8	0.2	0.0	0.3	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	13.4	13.4	21.0	12.2	12.1	22.4	0.0	14.0	24.0	0.0	14.6
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	A	B
Approach Vol, veh/h		701			693			64			71	
Approach Delay, s/veh		13.7			12.8			17.1			16.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.1	17.8	4.7	12.2	5.1	18.8	5.2	11.8
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	3.1	9.2	2.3	2.9	2.6	8.5	2.6	3.3
Green Ext Time (p_c), s	0.0	2.4	0.0	0.1	0.0	2.3	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	570	52	76	483	44	96	0	28	53	0	40
Future Volume (veh/h)	12	570	52	76	483	44	96	0	28	53	0	40
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	15	712	65	95	604	55	120	0	35	66	0	50
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	50	964	87	228	1546	480	322	0	287	111	0	99
Arrive On Green	0.03	0.22	0.22	0.14	0.32	0.32	0.19	0.00	0.19	0.07	0.00	0.07
Sat Flow, veh/h	1668	4462	405	1668	4782	1485	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	15	507	270	95	604	55	120	0	35	66	0	50
Grp Sat Flow(s),veh/h/ln	1668	1594	1679	1668	1594	1485	1668	0	1485	1668	0	1485
Q Serve(g_s), s	0.5	8.4	8.5	3.0	5.6	1.5	3.6	0.0	1.1	2.2	0.0	1.8
Cycle Q Clear(g_c), s	0.5	8.4	8.5	3.0	5.6	1.5	3.6	0.0	1.1	2.2	0.0	1.8
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	689	363	228	1546	480	322	0	287	111	0	99
V/C Ratio(X)	0.30	0.74	0.74	0.42	0.39	0.11	0.37	0.00	0.12	0.59	0.00	0.51
Avail Cap(c_a), veh/h	235	1628	858	294	2611	811	1058	0	941	529	0	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	20.7	20.8	22.4	14.9	13.5	19.9	0.0	18.9	25.7	0.0	25.6
Incr Delay (d2), s/veh	1.3	0.6	1.1	1.2	0.1	0.0	0.3	0.0	0.1	5.0	0.0	3.9
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	2.9	1.1	1.7	0.4	1.2	0.0	0.3	0.9	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	21.3	21.9	23.6	14.9	13.5	20.2	0.0	19.0	30.7	0.0	29.5
LnGrp LOS	C	C	C	C	B	B	C	A	B	C	A	C
Approach Vol, veh/h		792			754			155			116	
Approach Delay, s/veh		21.7			15.9			19.9			30.2	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	18.3		7.8	7.7	24.3		17.0
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	29.0		18.0	8.0	31.0		36.0
Max Q Clear Time (g_c+I1), s	5.0	10.5		4.2	2.5	7.6		5.6
Green Ext Time (p_c), s	0.1	1.8		0.3	0.0	1.7		0.2

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	45.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	28	0	245	1	2	3	109	306	2	175	5
Future Vol, veh/h	6	28	0	245	1	2	3	109	306	2	175	5
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	9	44	0	383	2	3	5	170	478	3	273	8
Number of Lanes	1	1	0	1	1	0	1	1	1	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	2	2	2
HCM Control Delay	13.9	59.4	48.2	28
HCM LOS	B	F	E	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	33%	0%	97%
Vol Right, %	0%	0%	100%	0%	0%	0%	67%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	109	306	6	28	245	3	2	180
LT Vol	3	0	0	6	0	245	0	2	0
Through Vol	0	109	0	0	28	0	1	0	175
RT Vol	0	0	306	0	0	0	2	0	5
Lane Flow Rate	5	170	478	9	44	383	5	3	281
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.011	0.38	0.97	0.027	0.12	0.937	0.01	0.008	0.681
Departure Headway (Hd)	8.535	8.022	7.303	10.374	9.854	8.815	7.828	9.249	8.711
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	450	497	345	364	413	459	387	416
Service Time	6.259	5.745	5.026	8.144	7.624	6.539	5.551	6.999	6.461
HCM Lane V/C Ratio	0.012	0.378	0.962	0.026	0.121	0.927	0.011	0.008	0.675
HCM Control Delay	11.4	15.6	60.2	13.4	14	60	10.6	12.1	28.2
HCM Lane LOS	B	C	F	B	B	F	B	B	D
HCM 95th-tile Q	0	1.8	12.5	0.1	0.4	10.5	0	0	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	782	165	392	427	37	69	43	414	34	27	54
Future Volume (veh/h)	62	782	165	392	427	37	69	43	414	34	27	54
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	67	850	179	426	464	40	75	47	0	37	29	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	164	1283	572	429	1811	808	181	85		165	108	
Arrive On Green	0.10	0.39	0.39	0.26	0.54	0.54	0.13	0.13	0.00	0.13	0.13	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	841	674	1485	737	852	1485
Grp Volume(v), veh/h	67	850	179	426	464	40	122	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1515	0	1485	1588	0	1485
Q Serve(g_s), s	2.9	16.4	6.6	19.8	5.7	1.0	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	16.4	6.6	19.8	5.7	1.0	5.7	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.61		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	164	1283	572	429	1811	808	266	0		273	0	
V/C Ratio(X)	0.41	0.66	0.31	0.99	0.26	0.05	0.46	0.00		0.24	0.00	
Avail Cap(c_a), veh/h	1072	2138	954	429	2138	954	639	0		648	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.0	19.7	16.7	28.8	9.4	8.3	32.1	0.0	0.0	30.9	0.0	0.0
Incr Delay (d2), s/veh	3.5	1.3	0.7	41.8	0.2	0.1	4.4	0.0	0.0	1.6	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.8	2.1	11.9	1.6	0.3	2.3	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	21.0	17.4	70.6	9.6	8.4	36.5	0.0	0.0	32.5	0.0	0.0
LnGrp LOS	D	C	B	E	A	A	D	A		C	A	
Approach Vol, veh/h		1096			930			122	A		66	A
Approach Delay, s/veh		21.4			37.5			36.5			32.5	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.0	36.0		15.8	13.7	48.3		15.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	21.8	18.4		4.7	4.9	7.7		7.7
Green Ext Time (p_c), s	0.0	11.6		0.5	0.5	5.1		1.1

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	8	634	0	0	0	618	1	0	0	0	0	0	20
Future Vol, veh/h	8	634	0	0	0	618	1	0	0	0	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10	10	0	0	0	10	10	10
Mvmt Flow	9	689	0	0	0	672	1	0	0	0	0	0	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	673	0	-	503	-	-	0			-	-	337
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	862	-	0	785	0	-	-			0	0	636
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	862	-	-	785	-	-	-			-	0	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	862	-	785	-	-	636
HCM Lane V/C Ratio	0.01	-	-	-	-	0.034
HCM Control Delay (s)	9.2	-	0	-	-	10.9
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0	-	-	0.1

A4. Employee Shift Data

Headcount

	Total
Headcount - Day Shift	754
Headcount - Night Shift	754

Shift Structure

	Start	End
Day Shift - Inbound Employees	7:00:00 AM	5:30:00 PM
Day Shift - Outbound Employees	7:30:00 AM	6:00:00 PM
Night Shift - Inbound Employees	6:00:00 PM	4:30:00 AM
Night Shift - Outbound Employees	6:30:00 PM	5:00:00 AM

Adjustment below accounts for mass transit and carpool users. Adjust as needed for jurisdiction

Net Cars Factor 100%

Cars
Average Weekday

Time	In	Out	Total
00:00	3	5	8
01:00	1	3	4
02:00	4	11	15
03:00	6	11	17
04:00	14	144	158
05:00	30	382	412
06:00	22	13	35
06:15	59	14	73
06:30	102	8	110
06:45	137	5	142
07:00	135	7	142
07:15	176	3	179
07:30	26	5	31
07:45	6	4	10
08:00	20	14	34
09:00	13	8	21
10:00	16	14	30
11:00	31	33	64
12:00	9	14	23
13:00	11	11	22
14:00	9	20	29
15:00	24	30	54
16:00	36	26	62
17:00	21	26	47
17:15	40	12	52
17:30	89	103	192
17:45	115	59	174
18:00	143	198	341
18:15	139	133	272
18:30	18	89	107
18:45	4	33	37
19:00	15	28	43
20:00	6	6	12
21:00	12	12	24
22:00	14	17	31
23:00	2	4	6
	1,508	1,508	3,013

Trucks
Average Weekday

Time	In	Out	Total
00:00	10	10	21
01:00	17	17	35
02:00	7	7	14
03:00	14	14	28
04:00	7	7	14
05:00	10	10	21
06:00	2	2	5
06:15	2	2	5
06:30	2	2	5
06:45	2	2	5
07:00	3	3	7
07:15	3	3	7
07:30	3	3	7
07:45	3	3	7
08:00	14	14	28
09:00	24	24	49
10:00	14	14	28
11:00	15	15	30
12:00	15	15	30
13:00	9	9	19
14:00	9	9	19
15:00	9	9	19
16:00	10	10	21
17:00	2	2	5
17:15	2	2	5
17:30	2	2	5
17:45	2	2	5
18:00	2	2	5
18:15	2	2	5
18:30	2	2	5
18:45	2	2	5
19:00	8	8	16
20:00	13	13	25
21:00	9	9	19
22:00	13	13	25
23:00	9	9	19
	280	280	560

Total Vehicles
Cars + Trucks Average Weekday

	In	Out	Total
00:00	13	15	29
01:00	18	20	39
02:00	11	18	29
03:00	20	25	45
04:00	21	151	172
05:00	40	392	433
06:00	24	15	40
06:15	61	16	78
06:30	104	10	115
06:45	139	7	147
07:00	138	10	149
07:15	179	6	186
07:30	29	8	38
07:45	9	7	17
08:00	34	28	62
09:00	37	32	70
10:00	30	28	58
11:00	46	48	94
12:00	24	29	53
13:00	20	20	41
14:00	18	29	48
15:00	33	39	73
16:00	46	36	83
17:00	23	28	52
17:15	42	14	57
17:30	91	105	197
17:45	117	61	179
18:00	145	200	346
18:15	141	135	277
18:30	20	91	112
18:45	6	35	42
19:00	23	36	59
20:00	19	19	37
21:00	21	21	43
22:00	27	30	56
23:00	11	13	25
	1,788	1,785	3,573

Morning Peak Hour of Generator

	Enter	Exit	Total
06:30-07:30	562	35	596

Evening Peak Hour of Generator

	Enter	Exit	Total
17:30-18:30	495	502	998

A5. Existing Plus Background Plus Project Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	702	50	35	222	22	0	0	84	21
Future Volume (veh/h)	0	0	0	702	50	35	222	22	0	0	84	21
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				780	56	39	247	24	0	0	93	23
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				766	55	38	300	612	0	0	132	33
Arrive On Green				0.52	0.52	0.52	0.18	0.35	0.00	0.00	0.10	0.10
Sat Flow, veh/h				1484	107	74	1668	1752	0	0	1356	335
Grp Volume(v), veh/h				875	0	0	247	24	0	0	0	116
Grp Sat Flow(s),veh/h/ln				1664	0	0	1668	1752	0	0	0	1691
Q Serve(g_s), s				35.0	0.0	0.0	9.7	0.6	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s				35.0	0.0	0.0	9.7	0.6	0.0	0.0	0.0	4.5
Prop In Lane				0.89		0.04	1.00		0.00	0.00		0.20
Lane Grp Cap(c), veh/h				859	0	0	300	612	0	0	0	165
V/C Ratio(X)				1.02	0.00	0.00	0.82	0.04	0.00	0.00	0.00	0.70
Avail Cap(c_a), veh/h				859	0	0	738	646	0	0	0	624
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				16.4	0.0	0.0	26.8	14.5	0.0	0.0	0.0	29.6
Incr Delay (d2), s/veh				35.3	0.0	0.0	4.3	0.0	0.0	0.0	0.0	2.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.1	0.0	0.0	3.9	0.2	0.0	0.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				51.7	0.0	0.0	31.0	14.6	0.0	0.0	0.0	31.7
LnGrp LOS				F	A	A	C	B	A	A	A	C
Approach Vol, veh/h					875			271			116	
Approach Delay, s/veh					51.7			29.6			31.7	
Approach LOS					D			C			C	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		28.6			17.1	11.5		39.2				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		2.6			11.7	6.5		37.0				
Green Ext Time (p_c), s		0.0			0.6	0.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			45.1
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	52	458	0	0	0	0	227	459	36	750	0
Future Volume (veh/h)	17	52	458	0	0	0	0	227	459	36	750	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	18	57	498				0	247	499	39	815	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	144	456	515				0	761	645	63	924	0
Arrive On Green	0.35	0.35	0.35				0.00	0.43	0.43	0.04	0.53	0.00
Sat Flow, veh/h	415	1316	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	75	0	498				0	247	499	39	815	0
Grp Sat Flow(s),veh/h/ln	1731	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	2.1	0.0	23.8				0.0	6.7	20.7	1.7	29.7	0.0
Cycle Q Clear(g_c), s	2.1	0.0	23.8				0.0	6.7	20.7	1.7	29.7	0.0
Prop In Lane	0.24		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	600	0	515				0	761	645	63	924	0
V/C Ratio(X)	0.13	0.00	0.97				0.00	0.32	0.77	0.62	0.88	0.00
Avail Cap(c_a), veh/h	600	0	515				0	1336	1132	347	1336	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	23.2				0.0	13.4	17.4	34.2	15.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	31.3				0.0	0.3	2.9	9.7	6.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	12.0				0.0	2.4	6.5	0.8	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	54.5				0.0	13.8	20.3	43.9	21.1	0.0
LnGrp LOS	B	A	D				A	B	C	D	C	A
Approach Vol, veh/h		573						746			854	
Approach Delay, s/veh		49.5						18.1			22.2	
Approach LOS		D						B			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	6.7	36.2		29.2		42.9
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	3.7	22.7		25.8		31.7
Green Ext Time (p_c), s	0.0	5.7		0.0		6.4

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	573	48	55	299	159	27	163	135	455	319	440
Future Volume (veh/h)	294	573	48	55	299	159	27	163	135	455	319	440
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	623	52	60	325	173	29	177	147	495	347	478
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	330	1091	487	92	626	264	63	642	286	312	1146	541
Arrive On Green	0.19	0.31	0.31	0.06	0.18	0.18	0.04	0.19	0.19	0.19	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	623	52	60	325	173	29	177	147	495	347	478
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	14.4	11.9	1.9	2.8	6.7	8.7	1.3	3.6	7.1	15.0	6.1	23.0
Cycle Q Clear(g_c), s	14.4	11.9	1.9	2.8	6.7	8.7	1.3	3.6	7.1	15.0	6.1	23.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1091	487	92	626	264	63	642	286	312	1146	541
V/C Ratio(X)	0.97	0.57	0.11	0.65	0.52	0.66	0.46	0.28	0.51	1.59	0.30	0.88
Avail Cap(c_a), veh/h	330	1319	588	312	1319	555	330	1245	555	312	1245	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	23.2	19.8	37.1	29.9	30.7	37.9	27.6	29.0	32.6	19.3	24.8
Incr Delay (d2), s/veh	40.7	0.8	0.2	2.9	1.1	4.7	1.9	0.4	2.4	278.8	0.3	15.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	4.7	0.7	1.2	2.7	3.2	0.6	1.4	2.5	29.8	2.2	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.1	24.0	19.9	40.0	31.0	35.4	39.9	28.0	31.4	311.4	19.5	39.7
LnGrp LOS	E	C	B	D	C	D	D	C	C	F	B	D
Approach Vol, veh/h		995			558			353			1320	
Approach Delay, s/veh		39.6			33.3			30.4			136.3	
Approach LOS		D			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	21.0	9.4	29.8	7.9	33.1	20.0	19.3
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	17.0	9.1	4.8	13.9	3.3	25.0	16.4	10.7
Green Ext Time (p_c), s	0.0	2.3	0.0	4.7	0.0	2.6	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	77.1
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	467	0	0	1074	162	0	0	0	112	0	83
Future Volume (veh/h)	134	467	0	0	1074	162	0	0	0	112	0	83
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	146	508	0	0	1167	176	0	0	0	122	0	90
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	229	2338	0	0	1594	671	0	305	0	361	0	274
Arrive On Green	0.13	0.66	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.17	0.00	0.17
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	146	508	0	0	1167	176	0	0	0	122	0	90
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	4.3	3.1	0.0	0.0	15.0	4.1	0.0	0.0	0.0	4.6	0.0	2.8
Cycle Q Clear(g_c), s	4.3	3.1	0.0	0.0	15.0	4.1	0.0	0.0	0.0	4.6	0.0	2.8
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	2338	0	0	1594	671	0	305	0	361	0	274
V/C Ratio(X)	0.64	0.22	0.00	0.00	0.73	0.26	0.00	0.00	0.00	0.34	0.00	0.33
Avail Cap(c_a), veh/h	960	3191	0	0	3191	1344	0	793	0	972	0	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	3.7	0.0	0.0	12.4	9.4	0.0	0.0	0.0	20.8	0.0	20.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	0.7	0.2	0.0	0.0	0.0	0.2	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.6	0.0	0.0	4.8	1.1	0.0	0.0	0.0	1.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	3.7	0.0	0.0	13.1	9.6	0.0	0.0	0.0	21.0	0.0	20.2
LnGrp LOS	C	A	A	A	B	A	A	A	A	C	A	C
Approach Vol, veh/h		654			1343			0			212	
Approach Delay, s/veh		8.2			12.6			0.0			20.7	
Approach LOS		A			B						C	

Timer - Assigned Phs	2		4	5	6		8
Phs Duration (G+Y+Rc), s	41.1		14.1	11.6	29.5		14.1
Change Period (Y+Rc), s	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	50.0		35.0	30.0	50.0		25.0
Max Q Clear Time (g_c+I1), s	5.1		6.6	6.3	17.0		0.0
Green Ext Time (p_c), s	2.4		0.7	0.3	8.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	841	133	55	462	10	25	0	1	4	0	14
Future Volume (veh/h)	60	841	133	55	462	10	25	0	1	4	0	14
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	65	914	145	60	502	11	27	0	1	4	0	15
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	105	1200	190	99	1377	30	53	0	138	9	0	99
Arrive On Green	0.06	0.42	0.42	0.06	0.41	0.41	0.03	0.00	0.09	0.01	0.00	0.07
Sat Flow, veh/h	1668	2877	456	1668	3330	73	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	65	529	530	60	251	262	27	0	1	4	0	15
Grp Sat Flow(s),veh/h/ln	1668	1664	1670	1668	1664	1739	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.6	11.7	11.8	1.5	4.5	4.5	0.7	0.0	0.0	0.1	0.0	0.4
Cycle Q Clear(g_c), s	1.6	11.7	11.8	1.5	4.5	4.5	0.7	0.0	0.0	0.1	0.0	0.4
Prop In Lane	1.00		0.27	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	694	696	99	688	719	53	0	138	9	0	99
V/C Ratio(X)	0.62	0.76	0.76	0.61	0.36	0.36	0.51	0.00	0.01	0.44	0.00	0.15
Avail Cap(c_a), veh/h	578	1730	1736	963	2307	2410	771	0	1543	578	0	1200
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	10.8	10.8	19.9	8.8	8.8	20.6	0.0	17.8	21.5	0.0	19.0
Incr Delay (d2), s/veh	2.2	0.7	0.7	2.2	0.1	0.1	2.7	0.0	0.0	12.1	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.8	2.8	0.5	1.1	1.1	0.3	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	11.4	11.4	22.1	8.9	8.9	23.3	0.0	17.8	33.5	0.0	19.3
LnGrp LOS	C	B	B	C	A	A	C	A	B	C	A	B
Approach Vol, veh/h		1124			573			28			19	
Approach Delay, s/veh		12.1			10.3			23.1			22.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	23.8	4.2	8.6	6.7	23.7	5.4	7.5
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	3.5	13.8	2.1	2.0	3.6	6.5	2.7	2.4
Green Ext Time (p_c), s	0.1	4.3	0.0	0.0	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	386	90	156	519	53	18	0	6	28	8	19
Future Volume (veh/h)	17	386	90	156	519	53	18	0	6	28	8	19
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	21	482	112	195	649	66	22	0	8	35	10	24
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	68	938	212	312	1852	575	137	272	121	82	164	73
Arrive On Green	0.04	0.24	0.24	0.19	0.39	0.39	0.08	0.00	0.08	0.05	0.05	0.05
Sat Flow, veh/h	1668	3899	882	1668	4782	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	21	392	202	195	649	66	22	0	8	35	10	24
Grp Sat Flow(s),veh/h/ln	1668	1594	1593	1668	1594	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	0.6	5.3	5.5	5.4	4.8	1.4	0.6	0.0	0.2	1.0	0.1	0.8
Cycle Q Clear(g_c), s	0.6	5.3	5.5	5.4	4.8	1.4	0.6	0.0	0.2	1.0	0.1	0.8
Prop In Lane	1.00		0.55	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	767	383	312	1852	575	137	272	121	82	164	73
V/C Ratio(X)	0.31	0.51	0.53	0.62	0.35	0.11	0.16	0.00	0.07	0.42	0.06	0.33
Avail Cap(c_a), veh/h	268	1854	926	335	2973	923	1204	2403	1072	602	1201	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	16.4	16.5	18.7	10.8	9.8	21.3	0.0	21.1	23.0	22.6	22.9
Incr Delay (d2), s/veh	1.0	0.2	0.4	3.3	0.0	0.0	0.2	0.0	0.1	3.4	0.2	2.6
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.6	1.7	2.0	1.2	0.3	0.2	0.0	0.1	0.4	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	16.6	16.9	21.9	10.9	9.8	21.5	0.0	21.2	26.5	22.8	25.5
LnGrp LOS	C	B	B	C	B	A	C	A	C	C	C	C
Approach Vol, veh/h		615			910			30			69	
Approach Delay, s/veh		16.9			13.2			21.4			25.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.3	18.0		6.5	8.0	25.3		10.1
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	10.3	29.0		18.0	8.0	31.0		36.0
Max Q Clear Time (g_c+I1), s	7.4	7.5		3.0	2.6	6.8		2.6
Green Ext Time (p_c), s	0.2	1.4		0.1	0.0	1.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Future Vol, veh/h	0	0	2	276	7	3	0	17	32	2	262	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	0	0	2	310	8	3	0	19	36	2	294	6
Number of Lanes	1	1	0	1	1	0	1	2	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	8.8	16.2	9.3	14.3
HCM LOS	A	C	A	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	100%	15%	100%	0%	0%	70%	0%	100%	0%
Vol Right, %	0%	0%	85%	0%	100%	0%	30%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	11	38	0	2	276	10	2	262	5
LT Vol	0	0	0	0	0	276	0	2	0	0
Through Vol	0	11	6	0	0	0	7	0	262	0
RT Vol	0	0	32	0	2	0	3	0	0	5
Lane Flow Rate	0	13	42	0	2	310	11	2	294	6
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0	0.023	0.071	0	0.004	0.547	0.018	0.004	0.493	0.008
Departure Headway (Hd)	6.638	6.638	6.033	6.718	6.011	6.352	5.641	6.535	6.03	5.323
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	0	539	593	0	595	571	636	551	601	676
Service Time	4.377	4.377	3.772	4.46	3.752	4.075	3.364	4.235	3.73	3.023
HCM Lane V/C Ratio	0	0.024	0.071	0	0.003	0.543	0.017	0.004	0.489	0.009
HCM Control Delay	9.4	9.5	9.2	9.5	8.8	16.5	8.5	9.3	14.5	8.1
HCM Lane LOS	N	A	A	N	A	C	A	A	B	A
HCM 95th-tile Q	0	0.1	0.2	0	0	3.3	0.1	0	2.7	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	377	68	287	700	31	468	29	487	20	21	21
Future Volume (veh/h)	108	377	68	287	700	31	468	29	487	20	21	21
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	117	410	74	312	761	34	509	32	0	22	23	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	184	737	329	353	1073	479	528	28		337	330	
Arrive On Green	0.11	0.22	0.22	0.21	0.32	0.32	0.35	0.35	0.00	0.35	0.35	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	1258	79	1485	773	930	1485
Grp Volume(v), veh/h	117	410	74	312	761	34	541	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1337	0	1485	1703	0	1485
Q Serve(g_s), s	5.7	9.3	3.5	15.4	17.0	1.3	28.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.7	9.3	3.5	15.4	17.0	1.3	30.0	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.94		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	184	737	329	353	1073	479	557	0		667	0	
V/C Ratio(X)	0.63	0.56	0.23	0.88	0.71	0.07	0.97	0.00		0.07	0.00	
Avail Cap(c_a), veh/h	985	1966	877	394	1966	877	557	0		667	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.0	29.3	27.0	32.4	25.2	19.9	29.0	0.0	0.0	18.1	0.0	0.0
Incr Delay (d2), s/veh	7.5	1.4	0.7	21.4	1.9	0.1	31.6	0.0	0.0	0.2	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.6	1.2	7.7	6.2	0.4	15.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	30.7	27.7	53.7	27.1	20.0	60.7	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	D	C	C	D	C	C	E	A		B	A	
Approach Vol, veh/h		601			1107			541	A		45	A
Approach Delay, s/veh		32.8			34.4			60.7			18.3	
Approach LOS		C			C			E			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.9	24.7		36.0	15.4	33.3		36.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	17.4	11.3		3.4	7.7	19.0		32.0
Green Ext Time (p_c), s	0.6	4.9		0.3	1.0	8.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	6	0	10	82
Future Vol, veh/h	0	10	6	0	10	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	210	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	100	100	10	100	100	10
Mvmt Flow	0	11	7	0	11	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	118	7	0	0	7	0
Stage 1	7	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	689	849	-	-	1153	-
Stage 1	812	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	849	-	-	1153	-
Mov Cap-2 Maneuver	644	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	849	1153	-
HCM Lane V/C Ratio	-	-	-	0.013	0.009	-
HCM Control Delay (s)	-	-	0	9.3	8.2	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	16	0	97	92
Future Vol, veh/h	0	10	16	0	97	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	10	3	3	10
Mvmt Flow	0	11	17	0	105	100

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	327	17	0	0	17	0
Stage 1	17	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	665	1059	-	-	1594	-
Stage 1	1003	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	618	1059	-	-	1594	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1059	1594	-
HCM Lane V/C Ratio	-	-	0.01	0.066	-
HCM Control Delay (s)	-	-	8.4	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	652	193	0	527	0	1
Future Vol, veh/h	652	193	0	527	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	709	210	0	573	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	460
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	467
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	467
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	467	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-
HCM Control Delay (s)	12.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	531	107	42	512	2	8	0	2	1	0	7
Future Volume (veh/h)	15	531	107	42	512	2	8	0	2	1	0	7
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1856	1752	1752	1856	1856	1856	1752	1752	1752
Adj Flow Rate, veh/h	16	577	116	46	557	2	9	0	2	1	0	8
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
Percent Heavy Veh, %	10	10	10	3	10	10	3	3	3	10	10	10
Cap, veh/h	34	1100	217	87	1033	4	21	0	464	4	0	423
Arrive On Green	0.02	0.27	0.27	0.05	0.30	0.30	0.01	0.00	0.30	0.00	0.00	0.28
Sat Flow, veh/h	1668	4007	791	1767	3402	12	1767	0	1572	1668	0	1485
Grp Volume(v), veh/h	16	457	236	46	272	287	9	0	2	1	0	8
Grp Sat Flow(s),veh/h/ln	1668	1594	1609	1767	1664	1750	1767	0	1572	1668	0	1485
Q Serve(g_s), s	0.4	5.1	5.3	1.1	5.7	5.7	0.2	0.0	0.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.4	5.1	5.3	1.1	5.7	5.7	0.2	0.0	0.0	0.0	0.0	0.2
Prop In Lane	1.00		0.49	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	34	876	442	87	506	531	21	0	464	4	0	423
V/C Ratio(X)	0.47	0.52	0.53	0.53	0.54	0.54	0.43	0.00	0.00	0.25	0.00	0.02
Avail Cap(c_a), veh/h	198	2495	1260	251	1342	1411	210	0	746	198	0	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.4	12.9	13.0	19.6	12.2	12.2	20.7	0.0	10.5	21.0	0.0	10.8
Incr Delay (d2), s/veh	9.9	0.5	1.0	4.9	0.9	0.9	13.3	0.0	0.0	30.5	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.5	0.5	1.6	1.7	0.2	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	13.4	14.0	24.4	13.1	13.1	34.0	0.0	10.5	51.5	0.0	10.9
LnGrp LOS	C	B	B	C	B	B	C	A	B	D	A	B
Approach Vol, veh/h		709			605			11			9	
Approach Delay, s/veh		14.0			14.0			29.7			15.4	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	16.4	6.1	15.6	4.5	16.0	4.9	16.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	20.0	6.0	33.0	5.0	20.0	5.0	34.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	3.1	7.3	2.2	2.2	2.4	7.7
Green Ext Time (p_c), s	0.0	0.0	0.0	4.3	0.0	0.0	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	491	43	0	556	0	2
Future Vol, veh/h	491	43	0	556	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	534	47	0	604	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	291
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	599
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	599
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	599	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-
HCM Control Delay (s)	11	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	24	186	68
Future Vol, veh/h	0	0	0	24	186	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	10	10	10	3
Mvmt Flow	0	0	0	26	202	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	138	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	750	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	750	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	414	25	47	537	68	0	0	138	14
Future Volume (veh/h)	0	0	0	414	25	47	537	68	0	0	138	14
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				460	28	52	597	76	0	0	153	16
Peak Hour Factor				0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				493	30	56	601	947	0	0	189	20
Arrive On Green				0.35	0.35	0.35	0.36	0.54	0.00	0.00	0.12	0.12
Sat Flow, veh/h				1408	86	159	1668	1752	0	0	1559	163
Grp Volume(v), veh/h				540	0	0	597	76	0	0	0	169
Grp Sat Flow(s),veh/h/ln				1653	0	0	1668	1752	0	0	0	1722
Q Serve(g_s), s				26.2	0.0	0.0	29.7	1.7	0.0	0.0	0.0	8.0
Cycle Q Clear(g_c), s				26.2	0.0	0.0	29.7	1.7	0.0	0.0	0.0	8.0
Prop In Lane				0.85		0.10	1.00		0.00	0.00		0.09
Lane Grp Cap(c), veh/h				578	0	0	601	947	0	0	0	209
V/C Ratio(X)				0.93	0.00	0.00	0.99	0.08	0.00	0.00	0.00	0.81
Avail Cap(c_a), veh/h				695	0	0	601	947	0	0	0	517
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				26.1	0.0	0.0	26.5	9.2	0.0	0.0	0.0	35.6
Incr Delay (d2), s/veh				16.6	0.0	0.0	34.7	0.0	0.0	0.0	0.0	2.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				12.2	0.0	0.0	16.4	0.6	0.0	0.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				42.7	0.0	0.0	61.2	9.2	0.0	0.0	0.0	38.5
LnGrp LOS				D	A	A	E	A	A	A	A	D
Approach Vol, veh/h					540			673			169	
Approach Delay, s/veh					42.7			55.3			38.5	
Approach LOS					D			E			D	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		49.9			34.9	15.0		33.3				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.0			30.0	25.0		35.0				
Max Q Clear Time (g_c+I1), s		3.7			31.7	10.0		28.2				
Green Ext Time (p_c), s		0.1			0.0	0.1		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			48.3									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	159	410	0	0	0	0	544	817	82	470	0
Future Volume (veh/h)	61	159	410	0	0	0	0	544	817	82	470	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	66	173	446				0	591	888	89	511	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	119	313	372				0	965	818	113	1154	0
Arrive On Green	0.25	0.25	0.25				0.00	0.55	0.55	0.07	0.66	0.00
Sat Flow, veh/h	477	1251	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	239	0	446				0	591	888	89	511	0
Grp Sat Flow(s),veh/h/ln	1728	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	12.0	0.0	25.0				0.0	22.8	55.0	5.2	14.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	25.0				0.0	22.8	55.0	5.2	14.0	0.0
Prop In Lane	0.28		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	433	0	372				0	965	818	113	1154	0
V/C Ratio(X)	0.55	0.00	1.20				0.00	0.61	1.09	0.79	0.44	0.00
Avail Cap(c_a), veh/h	433	0	372				0	965	818	251	1154	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.6	0.0	37.4				0.0	15.2	22.4	45.8	8.2	0.0
Incr Delay (d2), s/veh	0.9	0.0	113.1				0.0	1.4	57.4	11.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	20.4				0.0	8.5	29.6	2.5	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	0.0	150.5				0.0	16.6	79.8	57.4	8.6	0.0
LnGrp LOS	C	A	F				A	B	F	E	A	A
Approach Vol, veh/h		685						1479			600	
Approach Delay, s/veh		109.7						54.5			15.8	
Approach LOS		F						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	59.9		29.2		70.6
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	7.2	57.0		27.0		16.0
Green Ext Time (p_c), s	0.1	0.0		0.0		3.6

Intersection Summary	
HCM 6th Ctrl Delay	59.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	638	59	152	566	386	44	434	106	307	205	266
Future Volume (veh/h)	416	638	59	152	566	386	44	434	106	307	205	266
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	452	693	64	165	615	420	48	472	115	334	223	289
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	266	1178	525	195	1058	445	78	641	286	252	995	470
Arrive On Green	0.15	0.33	0.33	0.12	0.30	0.30	0.04	0.19	0.19	0.15	0.30	0.30
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	452	693	64	165	615	420	48	472	115	334	223	289
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	15.0	16.2	2.8	9.6	14.7	27.5	2.7	13.3	6.7	15.0	5.0	15.7
Cycle Q Clear(g_c), s	15.0	16.2	2.8	9.6	14.7	27.5	2.7	13.3	6.7	15.0	5.0	15.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	1178	525	195	1058	445	78	641	286	252	995	470
V/C Ratio(X)	1.70	0.59	0.12	0.85	0.58	0.94	0.61	0.74	0.40	1.33	0.22	0.61
Avail Cap(c_a), veh/h	266	1178	525	252	1063	448	266	1004	448	252	1004	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	27.5	23.0	43.1	29.5	34.0	46.7	37.8	35.2	42.2	26.2	30.0
Incr Delay (d2), s/veh	329.1	1.0	0.2	15.4	1.1	29.0	2.9	2.8	1.6	172.4	0.2	3.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.7	6.7	1.0	4.6	6.0	12.8	1.2	5.5	2.5	18.0	1.9	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	371.4	28.5	23.2	58.4	30.6	63.0	49.6	40.7	36.7	214.6	26.4	33.0
LnGrp LOS	F	C	C	E	C	E	D	D	D	F	C	C
Approach Vol, veh/h		1209			1200			635			846	
Approach Delay, s/veh		156.4			45.8			40.6			103.0	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	24.6	16.6	38.2	9.4	35.2	20.0	34.8
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	17.0	15.3	11.6	18.2	4.7	17.7	17.0	29.5
Green Ext Time (p_c), s	0.0	3.9	0.1	4.5	0.0	3.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	91.8
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	821	0	0	446	108	0	0	0	204	0	248
Future Volume (veh/h)	210	821	0	0	446	108	0	0	0	204	0	248
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	0	1856	1752	1752	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	228	892	0	0	485	117	0	0	0	222	0	270
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
Percent Heavy Veh, %	3	3	3	0	3	10	10	10	10	10	10	3
Cap, veh/h	261	2489	0	0	1803	759	0	351	0	341	0	315
Arrive On Green	0.15	0.71	0.00	0.00	0.51	0.51	0.00	0.00	0.00	0.20	0.00	0.20
Sat Flow, veh/h	1767	3618	0	0	3618	1485	0	1752	0	1328	0	1572
Grp Volume(v), veh/h	228	892	0	0	485	117	0	0	0	222	0	270
Grp Sat Flow(s),veh/h/ln	1767	1763	0	0	1763	1485	0	1752	0	1328	0	1572
Q Serve(g_s), s	12.1	9.6	0.0	0.0	7.5	4.0	0.0	0.0	0.0	15.4	0.0	15.9
Cycle Q Clear(g_c), s	12.1	9.6	0.0	0.0	7.5	4.0	0.0	0.0	0.0	15.4	0.0	15.9
Prop In Lane	1.00		0.00	0.00		1.00	0.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	2489	0	0	1803	759	0	351	0	341	0	315
V/C Ratio(X)	0.87	0.36	0.00	0.00	0.27	0.15	0.00	0.00	0.00	0.65	0.00	0.86
Avail Cap(c_a), veh/h	285	2489	0	0	1803	759	0	520	0	469	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.0	5.6	0.0	0.0	13.3	12.4	0.0	0.0	0.0	36.9	0.0	37.1
Incr Delay (d2), s/veh	21.9	0.4	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.8	0.0	6.9
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	3.0	0.0	0.0	2.9	1.3	0.0	0.0	0.0	5.0	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	6.0	0.0	0.0	13.6	12.9	0.0	0.0	0.0	37.6	0.0	44.0
LnGrp LOS	E	A	A	A	B	B	A	A	A	D	A	D
Approach Vol, veh/h		1120			602			0			492	
Approach Delay, s/veh		17.4			13.5			0.0			41.1	
Approach LOS		B			B						D	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		72.3		23.7	18.7	53.6		23.7
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		58.5		28.5	15.5	38.5		28.5
Max Q Clear Time (g_c+I1), s		11.6		17.9	14.1	9.5		0.0
Green Ext Time (p_c), s		4.8		1.3	0.1	2.8		0.0

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	895	116	51	763	4	241	0	47	13	0	52
Future Volume (veh/h)	21	895	116	51	763	4	241	0	47	13	0	52
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	23	973	126	55	829	4	262	0	51	14	0	57
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	43	1147	149	77	1386	7	305	0	435	28	0	189
Arrive On Green	0.03	0.39	0.39	0.05	0.41	0.41	0.18	0.00	0.29	0.02	0.00	0.13
Sat Flow, veh/h	1668	2963	384	1668	3397	16	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	23	546	553	55	406	427	262	0	51	14	0	57
Grp Sat Flow(s),veh/h/ln	1668	1664	1683	1668	1664	1749	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.0	21.5	21.5	2.3	13.7	13.7	10.9	0.0	1.8	0.6	0.0	2.5
Cycle Q Clear(g_c), s	1.0	21.5	21.5	2.3	13.7	13.7	10.9	0.0	1.8	0.6	0.0	2.5
Prop In Lane	1.00		0.23	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	644	651	77	679	713	305	0	435	28	0	189
V/C Ratio(X)	0.54	0.85	0.85	0.71	0.60	0.60	0.86	0.00	0.12	0.49	0.00	0.30
Avail Cap(c_a), veh/h	349	1045	1056	582	1393	1464	465	0	932	349	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.5	20.0	20.0	33.7	16.6	16.6	28.4	0.0	18.6	34.9	0.0	28.4
Incr Delay (d2), s/veh	3.9	1.9	1.9	4.4	0.3	0.3	6.5	0.0	0.0	4.9	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.4	7.5	1.0	4.5	4.7	4.7	0.0	0.6	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	21.9	21.9	38.1	16.9	16.9	34.9	0.0	18.6	39.8	0.0	28.7
LnGrp LOS	D	C	C	D	B	B	C	A	B	D	A	C
Approach Vol, veh/h		1122			888			313			71	
Approach Delay, s/veh		22.2			18.2			32.2			30.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	33.6	5.2	25.6	5.8	35.0	17.1	13.7
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	4.3	23.5	2.6	3.8	3.0	15.7	12.9	4.5
Green Ext Time (p_c), s	0.0	4.3	0.0	0.2	0.0	3.1	0.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	659	52	129	527	44	96	0	28	53	7	43
Future Volume (veh/h)	22	659	52	129	527	44	96	0	28	53	7	43
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	28	824	65	161	659	55	120	0	35	66	9	54
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	83	1070	84	256	1627	505	304	607	271	112	223	100
Arrive On Green	0.05	0.24	0.24	0.15	0.34	0.34	0.18	0.00	0.18	0.07	0.07	0.07
Sat Flow, veh/h	1668	4521	355	1668	4782	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	28	580	309	161	659	55	120	0	35	66	9	54
Grp Sat Flow(s),veh/h/ln	1668	1594	1688	1668	1594	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	1.0	10.4	10.4	5.5	6.4	1.5	3.9	0.0	1.2	2.3	0.2	2.1
Cycle Q Clear(g_c), s	1.0	10.4	10.4	5.5	6.4	1.5	3.9	0.0	1.2	2.3	0.2	2.1
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	83	754	399	256	1627	505	304	607	271	112	223	100
V/C Ratio(X)	0.34	0.77	0.77	0.63	0.40	0.11	0.39	0.00	0.13	0.59	0.04	0.54
Avail Cap(c_a), veh/h	219	1515	802	273	2430	754	984	1964	876	492	982	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	21.7	21.8	24.2	15.4	13.8	22.0	0.0	20.9	27.6	26.6	27.6
Incr Delay (d2), s/veh	0.9	0.6	1.2	4.2	0.1	0.0	0.3	0.0	0.1	4.9	0.1	4.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.4	3.7	2.2	1.9	0.4	1.4	0.0	0.4	1.0	0.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	22.4	23.0	28.4	15.5	13.8	22.3	0.0	21.0	32.5	26.7	32.1
LnGrp LOS	C	C	C	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		917			875			155			129	
Approach Delay, s/veh		22.8			17.7			22.0			31.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.3	20.4		8.1	9.0	26.8		17.1
Change Period (Y+Rc), s	6.0	6.0		4.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	10.0	29.0		18.0	8.0	31.0		36.0
Max Q Clear Time (g_c+I1), s	7.5	12.4		4.3	3.0	8.4		5.9
Green Ext Time (p_c), s	0.1	2.0		0.3	0.0	1.8		0.1

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	57
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	28	0	245	1	2	3	109	306	12	175	5
Future Vol, veh/h	6	28	0	245	1	2	3	109	306	12	175	5
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	9	44	0	383	2	3	5	170	478	19	273	8
Number of Lanes	1	1	0	1	1	0	1	2	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	2
HCM Control Delay	13.6	52.7	77.9	24.6
HCM LOS	B	F	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	11%	0%	100%	0%	33%	0%	100%	0%
Vol Right, %	0%	0%	89%	0%	0%	0%	67%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	3	73	342	6	28	245	3	12	175	5
LT Vol	3	0	0	6	0	245	0	12	0	0
Through Vol	0	73	36	0	28	0	1	0	175	0
RT Vol	0	0	306	0	0	0	2	0	0	5
Lane Flow Rate	5	114	535	9	44	383	5	19	273	8
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.011	0.251	1.086	0.026	0.115	0.903	0.01	0.047	0.641	0.017
Departure Headway (Hd)	8.466	7.951	7.308	10.247	9.733	8.768	7.792	9.28	8.762	8.037
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	454	503	351	371	417	462	388	416	448
Service Time	6.169	5.655	5.011	7.947	7.433	6.468	5.492	6.98	6.462	5.737
HCM Lane V/C Ratio	0.012	0.251	1.064	0.026	0.119	0.918	0.011	0.049	0.656	0.018
HCM Control Delay	11.3	13.3	92.2	13.2	13.7	53.2	10.6	12.4	25.8	10.9
HCM Lane LOS	B	B	F	B	B	F	B	B	D	B
HCM 95th-tile Q	0	1	17.1	0.1	0.4	9.6	0	0.1	4.3	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	783	166	392	428	37	70	43	414	34	27	54
Future Volume (veh/h)	62	783	166	392	428	37	70	43	414	34	27	54
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	67	851	180	426	465	40	76	47	0	37	29	0
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
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	164	1284	573	428	1812	808	182	84		165	107	
Arrive On Green	0.10	0.39	0.39	0.26	0.54	0.54	0.13	0.13	0.00	0.13	0.13	0.00
Sat Flow, veh/h	1668	3328	1485	1668	3328	1485	849	665	1485	736	851	1485
Grp Volume(v), veh/h	67	851	180	426	465	40	123	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1668	1664	1485	1668	1664	1485	1514	0	1485	1586	0	1485
Q Serve(g_s), s	2.9	16.4	6.6	19.8	5.8	1.0	3.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	16.4	6.6	19.8	5.8	1.0	5.8	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.62		1.00	0.56		1.00
Lane Grp Cap(c), veh/h	164	1284	573	428	1812	808	266	0		272	0	
V/C Ratio(X)	0.41	0.66	0.31	0.99	0.26	0.05	0.46	0.00		0.24	0.00	
Avail Cap(c_a), veh/h	1071	2137	953	428	2137	953	638	0		647	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.0	19.7	16.7	28.9	9.4	8.3	32.1	0.0	0.0	30.9	0.0	0.0
Incr Delay (d2), s/veh	3.5	1.3	0.7	42.0	0.2	0.1	4.5	0.0	0.0	1.7	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.8	2.1	11.9	1.6	0.3	2.4	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	21.0	17.4	70.8	9.6	8.4	36.6	0.0	0.0	32.6	0.0	0.0
LnGrp LOS	D	C	B	E	A	A	D	A		C	A	
Approach Vol, veh/h		1098			931			123	A		66	A
Approach Delay, s/veh		21.3			37.5			36.6			32.6	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	26.0	36.0		15.8	13.7	48.4		15.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	20.0	50.0		30.0	50.0	50.0		30.0
Max Q Clear Time (g_c+I1), s	21.8	18.4		4.7	4.9	7.8		7.8
Green Ext Time (p_c), s	0.0	11.6		0.5	0.5	5.1		1.1

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	59	0	8	76
Future Vol, veh/h	0	8	59	0	8	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	210	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	100	100	10	100	100	10
Mvmt Flow	0	9	64	0	9	83

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	165	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	101	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	644	783	-	-	1090	-
Stage 1	759	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	639	783	-	-	1090	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	783	1090	-
HCM Lane V/C Ratio	-	-	-	0.011	0.008	-
HCM Control Delay (s)	-	-	0	9.6	8.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	6.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	221	67	0	86	84
Future Vol, veh/h	0	221	67	0	86	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	10	3	3	10
Mvmt Flow	0	240	73	0	93	91

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	350	73	0	0	73	0
Stage 1	73	-	-	-	-	-
Stage 2	277	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	645	986	-	-	1520	-
Stage 1	947	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	604	986	-	-	1520	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	718	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	986	1520	-
HCM Lane V/C Ratio	-	-	0.244	0.061	-
HCM Control Delay (s)	-	-	9.8	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	1	0.2	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	782	170	0	818	0	15
Future Vol, veh/h	782	170	0	818	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	850	185	0	889	0	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	518
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	428
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	428
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	428	-	-	-
HCM Lane V/C Ratio	0.038	-	-	-
HCM Control Delay (s)	13.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	694	95	37	628	1	173	0	44	3	0	17
Future Volume (veh/h)	8	694	95	37	628	1	173	0	44	3	0	17
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1856	1752	1752	1856	1856	1856	1752	1752	1752
Adj Flow Rate, veh/h	9	754	103	40	683	1	188	0	48	3	0	18
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
Percent Heavy Veh, %	10	10	10	3	10	10	3	3	3	10	10	10
Cap, veh/h	20	1244	169	74	1100	2	236	0	562	7	0	339
Arrive On Green	0.01	0.29	0.29	0.04	0.32	0.32	0.13	0.00	0.36	0.00	0.00	0.23
Sat Flow, veh/h	1668	4259	577	1767	3410	5	1767	0	1572	1668	0	1485
Grp Volume(v), veh/h	9	563	294	40	333	351	188	0	48	3	0	18
Grp Sat Flow(s),veh/h/ln	1668	1594	1648	1767	1664	1751	1767	0	1572	1668	0	1485
Q Serve(g_s), s	0.3	8.0	8.1	1.2	8.9	8.9	5.4	0.0	1.1	0.1	0.0	0.5
Cycle Q Clear(g_c), s	0.3	8.0	8.1	1.2	8.9	8.9	5.4	0.0	1.1	0.1	0.0	0.5
Prop In Lane	1.00		0.35	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	20	931	481	74	537	565	236	0	562	7	0	339
V/C Ratio(X)	0.46	0.60	0.61	0.54	0.62	0.62	0.80	0.00	0.09	0.44	0.00	0.05
Avail Cap(c_a), veh/h	159	1940	1002	168	1012	1065	302	0	658	159	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	16.0	16.0	24.7	15.1	15.1	22.1	0.0	11.2	26.1	0.0	15.9
Incr Delay (d2), s/veh	15.9	0.6	1.3	5.9	1.2	1.1	10.9	0.0	0.1	39.1	0.0	0.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	2.6	0.5	2.8	3.0	2.8	0.0	0.3	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	16.6	17.3	30.6	16.3	16.2	33.0	0.0	11.3	65.2	0.0	15.9
LnGrp LOS	D	B	B	C	B	B	C	A	B	E	A	B
Approach Vol, veh/h		866			724			236			21	
Approach Delay, s/veh		17.1			17.0			28.6			23.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.2	22.8	6.2	19.4	11.0	16.0	4.6	21.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	22.0	5.0	32.0	9.0	18.0	5.0	32.0
Max Q Clear Time (g_c+I1), s	2.1	3.1	3.2	10.1	7.4	2.5	2.3	10.9
Green Ext Time (p_c), s	0.0	0.2	0.0	5.3	0.1	0.0	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	703	38	0	666	0	30
Future Vol, veh/h	703	38	0	666	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	764	41	0	724	0	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	403
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	508
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	508
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	508	-	-	-
HCM Lane V/C Ratio	0.064	-	-	-
HCM Control Delay (s)	12.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	124	128	60
Future Vol, veh/h	0	10	0	124	128	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	10	10	10	3
Mvmt Flow	0	11	0	135	139	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	102	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	790	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	790	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	790	-	-
HCM Lane V/C Ratio	-	0.014	-	-
HCM Control Delay (s)	-	9.6	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	538	48	39	282	146	27	163	97	425	319	440
Future Volume (veh/h)	294	538	48	39	282	146	27	163	97	425	319	440
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	585	52	42	307	159	29	177	105	462	347	478
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	336	1100	491	76	591	249	63	640	285	317	1154	545
Arrive On Green	0.19	0.31	0.31	0.05	0.17	0.17	0.04	0.19	0.19	0.19	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	585	52	42	307	159	29	177	105	462	347	478
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	14.1	10.8	1.9	1.9	6.3	7.9	1.3	3.6	4.9	15.0	6.0	22.5
Cycle Q Clear(g_c), s	14.1	10.8	1.9	1.9	6.3	7.9	1.3	3.6	4.9	15.0	6.0	22.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	1100	491	76	591	249	63	640	285	317	1154	545
V/C Ratio(X)	0.95	0.53	0.11	0.55	0.52	0.64	0.46	0.28	0.37	1.46	0.30	0.88
Avail Cap(c_a), veh/h	336	1341	598	317	1341	565	336	1266	565	317	1266	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	22.4	19.3	36.8	29.9	30.6	37.3	27.2	27.7	31.9	18.8	24.2
Incr Delay (d2), s/veh	36.3	0.7	0.2	2.3	1.2	4.6	1.9	0.4	1.4	222.1	0.2	14.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	4.2	0.6	0.8	2.6	2.9	0.6	1.4	1.7	25.2	2.2	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.9	23.1	19.5	39.1	31.1	35.2	39.2	27.6	29.1	254.1	19.0	38.2
LnGrp LOS	E	C	B	D	C	D	D	C	C	F	B	D
Approach Vol, veh/h		957			508			311			1287	
Approach Delay, s/veh		37.9			33.1			29.2			110.5	
Approach LOS		D			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	20.7	8.6	29.6	7.8	32.8	20.0	18.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	17.0	6.9	3.9	12.8	3.3	24.5	16.1	9.9
Green Ext Time (p_c), s	0.0	2.0	0.0	4.6	0.0	2.8	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	66.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

2: MACARTHUR DRIVE (N) & I-205 EAST OFF RAMP/I-205 EAST ON RAMP

Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	159	394	0	0	0	0	508	788	82	456	0
Future Volume (veh/h)	61	159	394	0	0	0	0	508	788	82	456	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	66	173	428				0	552	857	89	496	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	119	313	372				0	965	818	113	1154	0
Arrive On Green	0.25	0.25	0.25				0.00	0.55	0.55	0.07	0.66	0.00
Sat Flow, veh/h	477	1251	1485				0	1752	1485	1668	1752	0
Grp Volume(v), veh/h	239	0	428				0	552	857	89	496	0
Grp Sat Flow(s),veh/h/ln	1728	0	1485				0	1752	1485	1668	1752	0
Q Serve(g_s), s	12.0	0.0	25.0				0.0	20.6	55.0	5.2	13.5	0.0
Cycle Q Clear(g_c), s	12.0	0.0	25.0				0.0	20.6	55.0	5.2	13.5	0.0
Prop In Lane	0.28		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	433	0	372				0	965	818	113	1154	0
V/C Ratio(X)	0.55	0.00	1.15				0.00	0.57	1.05	0.79	0.43	0.00
Avail Cap(c_a), veh/h	433	0	372				0	965	818	251	1154	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.6	0.0	37.4				0.0	14.7	22.4	45.8	8.1	0.0
Incr Delay (d2), s/veh	0.9	0.0	94.7				0.0	1.0	44.8	11.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	18.5				0.0	7.6	26.8	2.5	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.5	0.0	132.1				0.0	15.7	67.2	57.4	8.5	0.0
LnGrp LOS	C	A	F				A	B	F	E	A	A
Approach Vol, veh/h		667						1409			585	
Approach Delay, s/veh		96.7						47.0			15.9	
Approach LOS		F						D			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.7	59.9		29.2		70.6
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	15.0	55.0		* 25		55.0
Max Q Clear Time (g_c+I1), s	7.2	57.0		27.0		15.5
Green Ext Time (p_c), s	0.1	0.0		0.0		3.5

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	616	59	108	518	354	44	434	86	293	205	266
Future Volume (veh/h)	416	616	59	108	518	354	44	434	86	293	205	266
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	452	670	64	117	563	385	48	472	93	318	223	289
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	271	1263	563	144	1027	433	79	640	285	256	1002	473
Arrive On Green	0.15	0.36	0.36	0.09	0.29	0.29	0.04	0.19	0.19	0.15	0.30	0.30
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	452	670	64	117	563	385	48	472	93	318	223	289
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	15.0	14.7	2.7	6.7	13.2	24.3	2.6	13.1	5.3	15.0	4.9	15.4
Cycle Q Clear(g_c), s	15.0	14.7	2.7	6.7	13.2	24.3	2.6	13.1	5.3	15.0	4.9	15.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	1263	563	144	1027	433	79	640	285	256	1002	473
V/C Ratio(X)	1.67	0.53	0.11	0.81	0.55	0.89	0.61	0.74	0.33	1.24	0.22	0.61
Avail Cap(c_a), veh/h	271	1263	563	256	1081	455	271	1021	455	256	1021	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	24.9	21.0	43.9	29.2	33.2	45.9	37.2	34.0	41.4	25.6	29.3
Incr Delay (d2), s/veh	316.2	0.7	0.2	4.1	0.8	19.5	2.8	2.9	1.1	137.8	0.2	2.9
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.1	5.9	0.9	2.8	5.4	10.5	1.2	5.4	1.9	15.7	1.9	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	357.6	25.5	21.1	48.0	30.1	52.6	48.7	40.0	35.2	179.2	25.8	32.2
LnGrp LOS	F	C	C	D	C	D	D	D	D	F	C	C
Approach Vol, veh/h		1186			1065			613			830	
Approach Delay, s/veh		151.9			40.2			40.0			86.8	
Approach LOS		F			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	24.3	13.5	40.0	9.4	34.9	20.0	33.5
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	17.0	15.1	8.7	16.7	4.6	17.4	17.0	26.3
Green Ext Time (p_c), s	0.0	3.7	0.1	4.7	0.0	3.1	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	86.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

A6. Existing Plus Background Plus Project With Improvement Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	538	48	39	282	146	27	163	97	425	319	440
Future Volume (veh/h)	294	538	48	39	282	146	27	163	97	425	319	440
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	585	52	42	307	159	29	177	105	462	347	478
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	356	1066	476	73	510	655	61	411	183	495	1282	606
Arrive On Green	0.20	0.30	0.30	0.04	0.14	0.14	0.03	0.12	0.12	0.30	0.39	0.39
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	585	52	42	307	159	29	177	105	462	347	478
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	15.5	12.2	2.1	2.2	7.1	5.9	1.4	4.3	5.8	23.6	6.3	23.5
Cycle Q Clear(g_c), s	15.5	12.2	2.1	2.2	7.1	5.9	1.4	4.3	5.8	23.6	6.3	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1066	476	73	510	655	61	411	183	495	1282	606
V/C Ratio(X)	0.90	0.55	0.11	0.57	0.60	0.24	0.47	0.43	0.57	0.93	0.27	0.79
Avail Cap(c_a), veh/h	504	1971	879	171	1328	999	121	1234	551	742	2488	1175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	25.6	22.1	41.1	35.1	15.3	41.5	35.6	36.2	30.0	18.5	23.8
Incr Delay (d2), s/veh	11.7	0.8	0.2	2.6	2.0	0.3	2.1	1.2	4.8	11.4	0.2	4.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	4.9	0.7	0.9	3.0	1.8	0.6	1.8	2.2	10.4	2.3	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	26.3	22.2	43.7	37.1	15.6	43.6	36.8	41.0	41.4	18.7	27.8
LnGrp LOS	D	C	C	D	D	B	D	D	D	D	B	C
Approach Vol, veh/h		957			508			311			1287	
Approach Delay, s/veh		32.6			30.9			38.9			30.2	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	16.3	8.8	31.5	8.0	39.3	22.7	17.7
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	39.0	32.5	9.0	49.0	6.0	65.5	25.0	33.0
Max Q Clear Time (g_c+I1), s	25.6	7.8	4.2	14.2	3.4	25.5	17.5	9.1
Green Ext Time (p_c), s	0.4	2.1	0.0	5.7	0.0	8.2	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	416	616	59	108	518	354	44	434	86	293	205	266
Future Volume (veh/h)	416	616	59	108	518	354	44	434	86	293	205	266
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	452	670	64	117	563	385	48	472	93	318	223	289
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
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	454	1419	633	139	806	626	64	582	260	322	1104	521
Arrive On Green	0.26	0.40	0.40	0.08	0.23	0.23	0.04	0.17	0.17	0.19	0.33	0.33
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	452	670	64	117	563	385	48	472	93	318	223	289
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	35.7	19.6	3.5	9.7	20.5	28.4	3.8	19.1	7.7	26.6	6.7	21.1
Cycle Q Clear(g_c), s	35.7	19.6	3.5	9.7	20.5	28.4	3.8	19.1	7.7	26.6	6.7	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1419	633	139	806	626	64	582	260	322	1104	521
V/C Ratio(X)	0.99	0.47	0.10	0.84	0.70	0.62	0.75	0.81	0.36	0.99	0.20	0.55
Avail Cap(c_a), veh/h	454	1419	633	226	831	636	114	797	355	322	1225	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	30.8	26.0	63.3	49.6	31.6	66.8	55.5	50.8	56.3	33.5	38.3
Incr Delay (d2), s/veh	40.7	0.4	0.1	7.0	3.0	2.3	6.4	6.0	1.4	46.7	0.2	1.6
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.6	8.3	1.3	4.3	9.2	10.2	1.8	8.4	2.9	15.2	2.7	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.6	31.3	26.2	70.2	52.6	33.9	73.2	61.6	52.3	103.1	33.7	39.9
LnGrp LOS	F	C	C	E	D	C	E	E	D	F	C	D
Approach Vol, veh/h		1186			1065			613			830	
Approach Delay, s/veh		54.4			47.8			61.1			62.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.0	30.0	16.7	61.3	10.1	51.9	41.0	37.0
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	27.0	33.5	19.0	50.0	9.0	51.5	36.0	33.0
Max Q Clear Time (g_c+I1), s	28.6	21.1	11.7	21.6	5.8	23.1	37.7	30.4
Green Ext Time (p_c), s	0.0	3.4	0.1	6.5	0.0	4.3	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	55.4
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

A7. Peak Hour Signal Warrants

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Chrisman Road** NB SB # OF APPROACH LANES: **3**

MINOR STREET: **Paradise Road** SB # OF APPROACH LANES: **1**

CITY, STATE: **Tracy, CA**

COMMENTS: **Ex+Back+Project**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N) **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N) **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:00 AM TO 07:00 AM																	
07:00 AM TO 08:00 AM																	
08:00 AM TO 09:00 AM	318	286			Y			Y			Y			Y			
09:00 AM TO 10:00 AM																	
10:00 AM TO 11:00 AM																	
11:00 AM TO 12:00 PM																	
12:00 PM TO 01:00 PM																	
01:00 PM TO 02:00 PM																	
02:00 PM TO 03:00 PM																	
03:00 PM TO 04:00 PM																	
04:00 PM TO 05:00 PM																	
05:00 PM TO 06:00 PM	610	248		Y	Y	**Y**		Y		Y	Y	**Y**		Y			
06:00 PM TO 07:00 PM																	
07:00 PM TO 08:00 PM																	
08:00 PM TO 09:00 PM																	
09:00 PM TO 10:00 PM																	
	928	534		1	2	**1**	0	2	**0**	1	2	**1**	0	2	**0**	**0**	**0**
				8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED for both Condition A & B **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **NOT SATISFIED**

09/09/20
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Grantline Road** NB SB # OF APPROACH LANES: **3**

MINOR STREET: **Project Driveway #4** SB # OF APPROACH LANES: **1**

CITY, STATE: **Tracy, CA**

COMMENTS: **Ex+Back+Project**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N) **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N) **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:00 AM TO 07:00 AM																	
07:00 AM TO 08:00 AM																	
08:00 AM TO 09:00 AM	1,209	10		Y			Y			Y			Y				
09:00 AM TO 10:00 AM																	
10:00 AM TO 11:00 AM																	
11:00 AM TO 12:00 PM																	
12:00 PM TO 01:00 PM																	
01:00 PM TO 02:00 PM																	
02:00 PM TO 03:00 PM																	
03:00 PM TO 04:00 PM																	
04:00 PM TO 05:00 PM																	
05:00 PM TO 06:00 PM	1,463	217		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM																	
07:00 PM TO 08:00 PM																	
08:00 PM TO 09:00 PM																	
09:00 PM TO 10:00 PM																	
	2,672	227		2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

09/09/20
Kimley-Horn and Associates

A8. Cumulative Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	160	0	70	413	40	0	0	50	20
Future Volume (veh/h)	0	0	0	160	0	70	413	40	0	0	50	20
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				160	0	70	413	40	0	0	50	20
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				199	0	87	632	914	0	0	196	79
Arrive On Green				0.18	0.00	0.18	0.20	0.52	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1118	0	489	3237	1752	0	0	1190	476
Grp Volume(v), veh/h				230	0	0	413	40	0	0	0	70
Grp Sat Flow(s),veh/h/ln				1608	0	0	1618	1752	0	0	0	1666
Q Serve(g_s), s				4.2	0.0	0.0	3.6	0.3	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s				4.2	0.0	0.0	3.6	0.3	0.0	0.0	0.0	1.1
Prop In Lane				0.70		0.30	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				286	0	0	632	914	0	0	0	275
V/C Ratio(X)				0.80	0.00	0.00	0.65	0.04	0.00	0.00	0.00	0.25
Avail Cap(c_a), veh/h				467	0	0	972	1277	0	0	0	445
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				12.0	0.0	0.0	11.2	3.5	0.0	0.0	0.0	11.0
Incr Delay (d2), s/veh				2.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				14.0	0.0	0.0	12.1	3.6	0.0	0.0	0.0	11.2
LnGrp LOS				B	A	A	B	A	A	A	A	B
Approach Vol, veh/h					230			453			70	
Approach Delay, s/veh					14.0			11.3			11.2	
Approach LOS					B			B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		20.7			10.8	9.9		9.6				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		22.1			9.1	8.1		8.8				
Max Q Clear Time (g_c+I1), s		2.3			5.6	3.1		6.2				
Green Ext Time (p_c), s		0.0			0.5	0.0		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		12.1
HCM 6th LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	380	0	0	0	0	450	360	10	200	0
Future Volume (veh/h)	15	0	380	0	0	0	0	450	360	10	200	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	15	0	380				0	450	360	10	200	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	506	0	450				0	1161	518	22	1545	0
Arrive On Green	0.30	0.00	0.30				0.00	0.35	0.35	0.01	0.46	0.00
Sat Flow, veh/h	1668	0	1485				0	3416	1485	1668	3416	0
Grp Volume(v), veh/h	15	0	380				0	450	360	10	200	0
Grp Sat Flow(s),veh/h/ln	1668	0	1485				0	1664	1485	1668	1664	0
Q Serve(g_s), s	0.2	0.0	9.4				0.0	4.0	8.2	0.2	1.3	0.0
Cycle Q Clear(g_c), s	0.2	0.0	9.4				0.0	4.0	8.2	0.2	1.3	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	506	0	450				0	1161	518	22	1545	0
V/C Ratio(X)	0.03	0.00	0.84				0.00	0.39	0.70	0.46	0.13	0.00
Avail Cap(c_a), veh/h	768	0	683				0	1608	717	213	2374	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	12.8				0.0	9.6	10.9	19.2	6.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.8				0.0	0.3	2.4	14.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8				0.0	1.0	2.1	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	16.5				0.0	9.9	13.4	33.2	6.0	0.0
LnGrp LOS	A	A	B				A	A	B	C	A	A
Approach Vol, veh/h		395						810			210	
Approach Delay, s/veh		16.3						11.4			7.3	
Approach LOS		B						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.5	18.5		16.1		23.1
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	5.0	18.9		* 18		27.9
Max Q Clear Time (g_c+I1), s	2.2	10.2		11.4		3.3
Green Ext Time (p_c), s	0.0	3.5		0.6		1.2

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	229	80	50	296	58	80	520	40	99	400	250
Future Volume (veh/h)	300	229	80	50	296	58	80	520	40	99	400	250
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	300	229	80	50	296	58	80	520	40	99	400	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	348	1042	465	92	543	229	126	824	368	130	846	400
Arrive On Green	0.20	0.30	0.30	0.06	0.15	0.15	0.07	0.25	0.25	0.08	0.25	0.25
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	300	229	80	50	296	58	80	520	40	99	400	250
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	10.4	3.1	2.4	1.9	4.9	2.2	2.8	8.8	1.3	3.7	6.5	8.9
Cycle Q Clear(g_c), s	10.4	3.1	2.4	1.9	4.9	2.2	2.8	8.8	1.3	3.7	6.5	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	1042	465	92	543	229	126	824	368	130	846	400
V/C Ratio(X)	0.86	0.22	0.17	0.54	0.54	0.25	0.63	0.63	0.11	0.76	0.47	0.63
Avail Cap(c_a), veh/h	474	2280	1017	237	1835	773	167	1759	785	158	1759	831
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	16.8	16.6	29.2	24.8	23.6	28.6	21.3	18.4	28.6	20.0	21.0
Incr Delay (d2), s/veh	9.2	0.2	0.3	1.8	1.5	1.0	1.9	1.4	0.2	12.3	0.7	2.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	1.1	0.8	0.8	2.1	0.8	1.2	3.2	0.4	1.8	2.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	17.0	16.9	31.0	26.2	24.6	30.6	22.6	18.7	40.9	20.7	23.7
LnGrp LOS	C	B	B	C	C	C	C	C	B	D	C	C
Approach Vol, veh/h		609			404			640			749	
Approach Delay, s/veh		25.3			26.6			23.4			24.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	21.2	8.5	23.7	9.5	21.6	17.5	14.8
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	6.0	33.5	9.0	41.0	6.0	33.5	17.0	33.0
Max Q Clear Time (g_c+I1), s	5.7	10.8	3.9	5.1	4.8	10.9	12.4	6.9
Green Ext Time (p_c), s	0.0	4.5	0.0	2.5	0.0	5.2	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	977	50	20	1400	240	120	120	131	200	40	220
Future Volume (veh/h)	130	977	50	20	1400	240	120	120	131	200	40	220
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	130	977	50	20	1400	240	120	120	131	200	40	220
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	10
Cap, veh/h	161	1828	94	29	1610	678	149	199	177	236	294	262
Arrive On Green	0.09	0.54	0.54	0.02	0.46	0.46	0.08	0.12	0.12	0.14	0.18	0.18
Sat Flow, veh/h	1767	3412	175	1668	3526	1485	1767	1664	1485	1668	1664	1485
Grp Volume(v), veh/h	130	505	522	20	1400	240	120	120	131	200	40	220
Grp Sat Flow(s),veh/h/ln	1767	1763	1824	1668	1763	1485	1767	1664	1485	1668	1664	1485
Q Serve(g_s), s	6.6	17.0	17.0	1.1	32.7	9.6	6.1	6.3	7.8	10.7	1.9	13.1
Cycle Q Clear(g_c), s	6.6	17.0	17.0	1.1	32.7	9.6	6.1	6.3	7.8	10.7	1.9	13.1
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	161	944	977	29	1610	678	149	199	177	236	294	262
V/C Ratio(X)	0.81	0.53	0.53	0.69	0.87	0.35	0.80	0.60	0.74	0.85	0.14	0.84
Avail Cap(c_a), veh/h	188	1022	1058	91	1844	776	155	401	357	329	583	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	13.8	13.8	44.7	22.4	16.1	41.1	38.2	38.9	38.3	31.7	36.4
Incr Delay (d2), s/veh	17.3	0.5	0.5	25.0	4.3	0.3	25.1	1.1	2.3	13.6	0.1	2.8
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	6.3	6.5	0.6	13.4	3.2	3.7	2.6	2.9	5.2	0.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.0	14.3	14.3	69.7	26.7	16.4	66.2	39.3	41.1	51.8	31.8	39.1
LnGrp LOS	E	B	B	E	C	B	E	D	D	D	C	D
Approach Vol, veh/h		1157			1660			371			460	
Approach Delay, s/veh		19.2			25.7			48.7			44.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	53.5	11.7	20.6	12.8	46.2	16.9	15.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.5
Max Green Setting (Gmax), s	5.6	53.0	8.0	32.0	9.7	47.8	18.0	22.0
Max Q Clear Time (g_c+I1), s	3.1	19.0	8.1	15.1	8.6	34.7	12.7	9.8
Green Ext Time (p_c), s	0.0	4.9	0.0	1.0	0.0	7.0	0.3	0.8

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	575	37	45	468	10	5	0	1	4	0	14
Future Volume (veh/h)	60	575	37	45	468	10	5	0	1	4	0	14
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	60	575	37	45	468	10	5	0	1	4	0	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	221	1273	82	83	1061	23	22	0	83	9	0	71
Arrive On Green	0.13	0.40	0.40	0.05	0.32	0.32	0.01	0.00	0.06	0.01	0.00	0.05
Sat Flow, veh/h	1668	3175	204	1668	3332	71	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	60	301	311	45	234	244	5	0	1	4	0	14
Grp Sat Flow(s),veh/h/ln	1668	1664	1715	1668	1664	1739	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.2	5.0	5.0	1.0	4.2	4.2	0.1	0.0	0.0	0.1	0.0	0.3
Cycle Q Clear(g_c), s	1.2	5.0	5.0	1.0	4.2	4.2	0.1	0.0	0.0	0.1	0.0	0.3
Prop In Lane	1.00		0.12	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	667	688	83	530	554	22	0	83	9	0	71
V/C Ratio(X)	0.27	0.45	0.45	0.54	0.44	0.44	0.23	0.00	0.01	0.44	0.00	0.20
Avail Cap(c_a), veh/h	664	1987	2047	1106	2649	2768	885	0	1772	664	0	1378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.7	8.3	8.3	17.5	10.2	10.2	18.4	0.0	16.8	18.7	0.0	17.3
Incr Delay (d2), s/veh	0.2	0.2	0.2	2.0	0.2	0.2	1.9	0.0	0.0	12.0	0.0	0.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.0	1.1	0.3	1.0	1.1	0.0	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	8.4	8.4	19.5	10.4	10.4	20.3	0.0	16.8	30.7	0.0	17.7
LnGrp LOS	B	A	A	B	B	B	C	A	B	C	A	B
Approach Vol, veh/h		672			523			6			18	
Approach Delay, s/veh		9.0			11.2			19.7			20.6	
Approach LOS		A			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	20.9	4.2	6.7	9.0	17.8	4.5	6.4
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	3.0	7.0	2.1	2.0	3.2	6.2	2.1	2.3
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	320	121	128	417	25	78	400	132	25	330	22
Future Volume (veh/h)	124	320	121	128	417	25	78	400	132	25	330	22
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	124	320	121	128	417	25	78	400	132	25	330	22
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	375	949	295	473	762	340	161	671	299	95	538	240
Arrive On Green	0.12	0.20	0.20	0.15	0.23	0.23	0.10	0.20	0.20	0.06	0.16	0.16
Sat Flow, veh/h	3237	4782	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	124	320	121	128	417	25	78	400	132	25	330	22
Grp Sat Flow(s),veh/h/ln	1618	1594	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	2.1	3.5	4.3	2.1	6.7	0.8	2.7	6.6	4.7	0.9	5.6	0.8
Cycle Q Clear(g_c), s	2.1	3.5	4.3	2.1	6.7	0.8	2.7	6.6	4.7	0.9	5.6	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	375	949	295	473	762	340	161	671	299	95	538	240
V/C Ratio(X)	0.33	0.34	0.41	0.27	0.55	0.07	0.48	0.60	0.44	0.26	0.61	0.09
Avail Cap(c_a), veh/h	643	2374	737	535	1542	688	221	1982	884	276	2203	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	20.8	21.1	22.9	20.5	18.3	25.9	21.9	21.1	27.3	23.6	21.6
Incr Delay (d2), s/veh	0.2	0.1	0.3	0.3	0.2	0.0	0.8	0.3	0.4	1.5	1.1	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.1	1.4	0.7	2.3	0.2	1.0	2.3	1.5	0.4	2.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	20.9	21.5	23.2	20.8	18.3	26.7	22.2	21.5	28.8	24.7	21.7
LnGrp LOS	C	C	C	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		565			570			610			377	
Approach Delay, s/veh		21.9			21.2			22.6			24.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	18.0	11.8	15.8	13.0	19.8	9.4	18.2
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	30.0	8.0	* 40	12.0	28.0	10.0	36.0
Max Q Clear Time (g_c+I1), s	4.1	6.3	4.7	7.6	4.1	8.7	2.9	8.6
Green Ext Time (p_c), s	0.2	1.1	0.0	2.2	0.1	1.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	50	10	10	10	540	100	100	444	6
Future Volume (veh/h)	10	10	10	50	10	10	10	540	100	100	444	6
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	10	10	10	50	10	10	10	540	100	100	444	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	44	100	100	138	146	146	35	1103	200	267	1961	609
Arrive On Green	0.03	0.12	0.12	0.08	0.18	0.18	0.02	0.27	0.27	0.16	0.41	0.41
Sat Flow, veh/h	1668	804	804	1668	804	804	1668	4068	739	1668	4782	1485
Grp Volume(v), veh/h	10	0	20	50	0	20	10	421	219	100	444	6
Grp Sat Flow(s),veh/h/ln	1668	0	1607	1668	0	1607	1668	1594	1619	1668	1594	1485
Q Serve(g_s), s	0.3	0.0	0.5	1.3	0.0	0.5	0.3	4.9	5.0	2.4	2.7	0.1
Cycle Q Clear(g_c), s	0.3	0.0	0.5	1.3	0.0	0.5	0.3	4.9	5.0	2.4	2.7	0.1
Prop In Lane	1.00		0.50	1.00		0.50	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	44	0	200	138	0	292	35	864	439	267	1961	609
V/C Ratio(X)	0.23	0.00	0.10	0.36	0.00	0.07	0.29	0.49	0.50	0.37	0.23	0.01
Avail Cap(c_a), veh/h	377	0	1561	339	0	1525	302	2305	1170	377	3673	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	17.2	19.2	0.0	15.0	21.3	13.5	13.6	16.6	8.5	7.7
Incr Delay (d2), s/veh	2.6	0.0	0.2	1.6	0.0	0.1	4.4	0.4	0.9	0.9	0.1	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.5	0.0	0.1	0.1	1.4	1.5	0.8	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	17.4	20.8	0.0	15.1	25.8	14.0	14.5	17.5	8.5	7.7
LnGrp LOS	C	A	B	C	A	B	C	B	B	B	A	A
Approach Vol, veh/h		30			70			650			550	
Approach Delay, s/veh		19.5			19.2			14.3			10.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	16.0	7.7	9.5	4.9	22.2	5.2	12.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	32.0	9.0	43.0	8.0	34.0	10.0	42.0
Max Q Clear Time (g_c+I1), s	4.4	7.0	3.3	2.5	2.3	4.7	2.3	2.5
Green Ext Time (p_c), s	0.1	4.1	0.0	0.1	0.0	3.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	820	100	490	960	83	210	550	630	31	203	460
Future Volume (veh/h)	408	820	100	490	960	83	210	550	630	31	203	460
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	408	820	100	490	960	83	210	550	0	31	203	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	472	901	604	520	1453	682	227	730		38	353	
Arrive On Green	0.15	0.27	0.27	0.31	0.44	0.44	0.14	0.22	0.00	0.02	0.11	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	408	820	100	490	960	83	210	550	0	31	203	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	15.4	29.8	5.4	35.8	28.6	4.0	15.6	19.3	0.0	2.3	7.3	0.0
Cycle Q Clear(g_c), s	15.4	29.8	5.4	35.8	28.6	4.0	15.6	19.3	0.0	2.3	7.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	472	901	604	520	1453	682	227	730		38	353	
V/C Ratio(X)	0.87	0.91	0.17	0.94	0.66	0.12	0.93	0.75		0.82	0.57	
Avail Cap(c_a), veh/h	517	931	617	547	1489	698	227	1090		80	798	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.3	44.2	23.6	42.0	27.9	19.4	53.5	45.7	0.0	60.9	53.2	0.0
Incr Delay (d2), s/veh	15.2	13.3	0.3	25.5	1.5	0.2	40.1	5.7	0.0	32.5	5.3	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	13.5	1.9	17.5	10.8	1.4	8.9	8.3	0.0	1.3	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	57.4	23.9	67.5	29.4	19.5	93.5	51.4	0.0	93.4	58.5	0.0
LnGrp LOS	E	E	C	E	C	B	F	D		F	E	
Approach Vol, veh/h		1328			1533			760	A		234	A
Approach Delay, s/veh		58.0			41.0			63.0			63.1	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.0	39.9	21.0	19.3	24.2	60.6	6.9	33.4
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	41.0	35.0	17.0	30.0	20.0	56.0	6.0	41.0
Max Q Clear Time (g_c+I1), s	17.4	31.8	17.6	9.3	17.4	30.6	4.3	21.3
Green Ext Time (p_c), s	1.2	2.0	0.0	2.1	0.8	10.6	0.0	6.1

Intersection Summary	
HCM 6th Ctrl Delay	52.5
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	314	0	10	0	242	298	0	173	460
Future Volume (veh/h)	0	0	0	314	0	10	0	242	298	0	173	460
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				314	0	10	0	242	298	0	173	460
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				624	0	555	0	1483	690	0	1483	690
Arrive On Green				0.19	0.00	0.19	0.00	0.47	0.47	0.00	0.47	0.47
Sat Flow, veh/h				3337	0	2969	0	3346	1485	0	3346	1485
Grp Volume(v), veh/h				314	0	10	0	242	298	0	173	460
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1594	1485	0	1594	1485
Q Serve(g_s), s				1.9	0.0	0.1	0.0	1.0	3.1	0.0	0.7	5.5
Cycle Q Clear(g_c), s				1.9	0.0	0.1	0.0	1.0	3.1	0.0	0.7	5.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				624	0	555	0	1483	690	0	1483	690
V/C Ratio(X)				0.50	0.00	0.02	0.00	0.16	0.43	0.00	0.12	0.67
Avail Cap(c_a), veh/h				2612	0	2325	0	2635	1227	0	2635	1227
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.4	0.0	7.6	0.0	3.6	4.1	0.0	3.5	4.8
Incr Delay (d2), s/veh				0.6	0.0	0.0	0.0	0.1	0.4	0.0	0.0	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.5	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				9.0	0.0	7.6	0.0	3.6	4.5	0.0	3.5	5.9
LnGrp LOS				A	A	A	A	A	A	A	A	A
Approach Vol, veh/h					324			540			633	
Approach Delay, s/veh					9.0			4.1			5.2	
Approach LOS					A			A			A	

Timer - Assigned Phs	2		6		8
Phs Duration (G+Y+Rc), s	14.7		14.7		8.3
Change Period (Y+Rc), s	4.0		4.0		4.0
Max Green Setting (Gmax), s	19.0		19.0		18.0
Max Q Clear Time (g_c+I1), s	5.1		7.5		3.9
Green Ext Time (p_c), s	3.1		3.2		1.0

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	0	315	0	0	0	0	230	646	0	477	10
Future Volume (veh/h)	310	0	315	0	0	0	0	230	646	0	477	10
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	0	1752				0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h	310	0	315				0	230	646	0	477	10
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	0	10				0	10	10	0	10	10
Cap, veh/h	766	0	619				0	2073	1133	0	2090	44
Arrive On Green	0.24	0.00	0.24				0.00	0.43	0.43	0.00	0.43	0.43
Sat Flow, veh/h	3237	0	2613				0	4940	2613	0	4979	101
Grp Volume(v), veh/h	310	0	315				0	230	646	0	315	172
Grp Sat Flow(s),veh/h/ln	1618	0	1306				0	1594	1306	0	1594	1734
Q Serve(g_s), s	2.0	0.0	2.5				0.0	0.7	4.5	0.0	1.5	1.5
Cycle Q Clear(g_c), s	2.0	0.0	2.5				0.0	0.7	4.5	0.0	1.5	1.5
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.06
Lane Grp Cap(c), veh/h	766	0	619				0	2073	1133	0	1382	752
V/C Ratio(X)	0.40	0.00	0.51				0.00	0.11	0.57	0.00	0.23	0.23
Avail Cap(c_a), veh/h	1334	0	1077				0	4337	2369	0	2891	1572
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	8.0				0.0	4.1	5.2	0.0	4.3	4.3
Incr Delay (d2), s/veh	0.3	0.0	0.7				0.0	0.0	0.5	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5				0.0	0.1	0.5	0.0	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	0.0	8.7				0.0	4.1	5.6	0.0	4.4	4.5
LnGrp LOS	A	A	A				A	A	A	A	A	A
Approach Vol, veh/h		625						876			487	
Approach Delay, s/veh		8.4						5.2			4.4	
Approach LOS		A						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	14.5	9.7	14.5
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	6.5	4.5	3.5
Green Ext Time (p_c), s	4.0	1.3	2.7

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	15	565	0	0	0	515	2	0	0	0	0	0	8
Future Vol, veh/h	15	565	0	0	0	515	2	0	0	0	0	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	15	565	0	0	0	515	2	0	0	0	0	0	8

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	517	0	-	412	-	-	0			-	-	259
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	991	-	0	883	0	-	-			0	0	716
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	991	-	-	883	-	-	-			-	0	716
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	991	-	883	-	-	716
HCM Lane V/C Ratio	0.015	-	-	-	-	0.011
HCM Control Delay (s)	8.7	-	0	-	-	10.1
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	180	0	20	640	75	0	0	220	20
Future Volume (veh/h)	0	0	0	180	0	20	640	75	0	0	220	20
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				180	0	20	640	75	0	0	220	20
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				221	0	25	843	1035	0	0	301	27
Arrive On Green				0.15	0.00	0.15	0.26	0.59	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1483	0	165	3237	1752	0	0	1582	144
Grp Volume(v), veh/h				200	0	0	640	75	0	0	0	240
Grp Sat Flow(s),veh/h/ln				1648	0	0	1618	1752	0	0	0	1726
Q Serve(g_s), s				4.1	0.0	0.0	6.4	0.6	0.0	0.0	0.0	4.6
Cycle Q Clear(g_c), s				4.1	0.0	0.0	6.4	0.6	0.0	0.0	0.0	4.6
Prop In Lane				0.90		0.10	1.00		0.00	0.00		0.08
Lane Grp Cap(c), veh/h				245	0	0	843	1035	0	0	0	329
V/C Ratio(X)				0.82	0.00	0.00	0.76	0.07	0.00	0.00	0.00	0.73
Avail Cap(c_a), veh/h				245	0	0	1028	1288	0	0	0	479
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				14.4	0.0	0.0	11.9	3.1	0.0	0.0	0.0	13.3
Incr Delay (d2), s/veh				17.7	0.0	0.0	2.4	0.0	0.0	0.0	0.0	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	1.8	0.1	0.0	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				32.1	0.0	0.0	14.3	3.1	0.0	0.0	0.0	14.5
LnGrp LOS				C	A	A	B	A	A	A	A	B
Approach Vol, veh/h					200			715			240	
Approach Delay, s/veh					32.1			13.2			14.5	
Approach LOS					C			B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		25.6			14.0	11.6		9.4				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.7			11.1	9.7		5.2				
Max Q Clear Time (g_c+I1), s		2.6			8.4	6.6		6.1				
Green Ext Time (p_c), s		0.1			0.7	0.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	293	0	0	0	0	730	470	100	300	0
Future Volume (veh/h)	20	0	293	0	0	0	0	730	470	100	300	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	20	0	293				0	730	470	100	300	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	395	0	351				0	1355	604	129	1896	0
Arrive On Green	0.24	0.00	0.24				0.00	0.41	0.41	0.08	0.57	0.00
Sat Flow, veh/h	1668	0	1485				0	3416	1485	1668	3416	0
Grp Volume(v), veh/h	20	0	293				0	730	470	100	300	0
Grp Sat Flow(s),veh/h/ln	1668	0	1485				0	1664	1485	1668	1664	0
Q Serve(g_s), s	0.4	0.0	8.8				0.0	7.8	12.9	2.8	2.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	8.8				0.0	7.8	12.9	2.8	2.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	395	0	351				0	1355	604	129	1896	0
V/C Ratio(X)	0.05	0.00	0.83				0.00	0.54	0.78	0.77	0.16	0.00
Avail Cap(c_a), veh/h	639	0	568				0	1550	691	248	2329	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.9	0.0	17.1				0.0	10.6	12.1	21.3	4.8	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.7				0.0	0.5	5.5	9.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8				0.0	2.1	3.9	1.3	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.0	19.8				0.0	11.1	17.6	30.7	4.8	0.0
LnGrp LOS	B	A	B				A	B	B	C	A	A
Approach Vol, veh/h		313						1200			400	
Approach Delay, s/veh		19.4						13.6			11.3	
Approach LOS		B						B			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.6	24.0		15.3		31.7
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	7.6	21.9		* 18		32.9
Max Q Clear Time (g_c+I1), s	4.8	14.9		10.8		4.0
Green Ext Time (p_c), s	0.1	4.2		0.5		2.0

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1388	120	20	181	53	110	610	60	33	580	170
Future Volume (veh/h)	320	1388	120	20	181	53	110	610	60	33	580	170
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	1388	120	20	181	53	110	610	60	33	580	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	335	1587	708	43	1010	425	130	903	403	61	780	369
Arrive On Green	0.19	0.45	0.45	0.03	0.29	0.29	0.07	0.27	0.27	0.04	0.23	0.23
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	1388	120	20	181	53	110	610	60	33	580	170
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	17.0	33.9	4.3	1.1	3.7	2.5	5.8	15.5	2.9	1.8	15.3	8.8
Cycle Q Clear(g_c), s	17.0	33.9	4.3	1.1	3.7	2.5	5.8	15.5	2.9	1.8	15.3	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	1587	708	43	1010	425	130	903	403	61	780	369
V/C Ratio(X)	0.96	0.87	0.17	0.46	0.18	0.12	0.84	0.68	0.15	0.54	0.74	0.46
Avail Cap(c_a), veh/h	335	1670	745	105	1225	516	130	1139	508	105	1104	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	23.7	15.5	45.6	25.5	25.1	43.5	30.9	26.3	45.0	33.7	31.2
Incr Delay (d2), s/veh	37.1	5.7	0.2	2.8	0.1	0.2	35.6	1.7	0.3	2.7	2.6	1.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	14.0	1.5	0.5	1.5	0.9	3.8	6.2	1.1	0.8	6.2	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.2	29.3	15.7	48.5	25.6	25.3	79.0	32.6	26.6	47.7	36.3	32.8
LnGrp LOS	E	C	B	D	C	C	E	C	C	D	D	C
Approach Vol, veh/h		1828			254			780			783	
Approach Delay, s/veh		36.5			27.4			38.7			36.0	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	31.3	7.5	47.8	12.0	27.8	23.0	32.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	6.0	32.5	6.0	45.0	7.0	31.5	18.0	33.0
Max Q Clear Time (g_c+I1), s	3.8	17.5	3.1	35.9	7.8	17.3	19.0	5.7
Green Ext Time (p_c), s	0.0	4.5	0.0	6.8	0.0	4.9	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	1303	140	43	1025	370	90	525	30	130	190	360
Future Volume (veh/h)	275	1303	140	43	1025	370	90	525	30	130	190	360
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1752	1856	1856	1856	1752	1856	1856
Adj Flow Rate, veh/h	275	1303	140	43	1025	370	90	525	30	130	190	360
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	3	3	10	3	3	3	10	3	3
Cap, veh/h	299	1439	154	54	1069	450	103	767	44	162	467	417
Arrive On Green	0.17	0.45	0.45	0.03	0.30	0.30	0.06	0.23	0.23	0.10	0.27	0.27
Sat Flow, veh/h	1767	3213	344	1767	3526	1485	1767	3390	193	1668	1763	1572
Grp Volume(v), veh/h	275	712	731	43	1025	370	90	273	282	130	190	360
Grp Sat Flow(s),veh/h/ln	1767	1763	1794	1767	1763	1485	1767	1763	1821	1668	1763	1572
Q Serve(g_s), s	13.1	32.1	32.5	2.1	24.5	19.8	4.3	12.1	12.2	6.5	7.6	18.7
Cycle Q Clear(g_c), s	13.1	32.1	32.5	2.1	24.5	19.8	4.3	12.1	12.2	6.5	7.6	18.7
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	299	789	803	54	1069	450	103	399	412	162	467	417
V/C Ratio(X)	0.92	0.90	0.91	0.80	0.96	0.82	0.87	0.68	0.69	0.80	0.41	0.86
Avail Cap(c_a), veh/h	299	789	803	82	1069	450	103	473	488	272	658	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	21.9	22.1	41.3	29.3	27.7	40.0	30.4	30.4	37.9	25.9	30.0
Incr Delay (d2), s/veh	31.5	13.6	14.3	25.9	18.4	11.6	50.9	2.1	2.1	8.8	0.2	7.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	15.0	15.6	1.3	12.5	8.2	3.3	5.2	5.4	3.1	3.2	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	35.6	36.4	67.2	47.7	39.3	91.0	32.5	32.5	46.7	26.2	37.1
LnGrp LOS	E	D	D	E	D	D	F	C	C	D	C	D
Approach Vol, veh/h		1718			1438			645			680	
Approach Delay, s/veh		40.9			46.1			40.6			35.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	42.9	9.0	27.2	19.0	30.5	12.3	23.9
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.5
Max Green Setting (Gmax), s	4.0	37.0	5.0	32.0	14.5	26.0	14.0	23.0
Max Q Clear Time (g_c+I1), s	4.1	34.5	6.3	20.7	15.1	26.5	8.5	14.2
Green Ext Time (p_c), s	0.0	1.6	0.0	2.0	0.0	0.0	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1853	32	44	483	4	22	0	37	13	0	52
Future Volume (veh/h)	21	1853	32	44	483	4	22	0	37	13	0	52
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	21	1853	32	44	483	4	22	0	37	13	0	52
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	105	1896	33	65	1836	15	84	0	218	26	0	167
Arrive On Green	0.06	0.57	0.57	0.04	0.54	0.54	0.05	0.00	0.15	0.02	0.00	0.11
Sat Flow, veh/h	1668	3348	58	1668	3383	28	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	21	919	966	44	238	249	22	0	37	13	0	52
Grp Sat Flow(s),veh/h/ln	1668	1664	1741	1668	1664	1747	1668	0	1485	1668	0	1485
Q Serve(g_s), s	0.9	42.4	42.9	2.1	6.0	6.1	1.0	0.0	1.7	0.6	0.0	2.6
Cycle Q Clear(g_c), s	0.9	42.4	42.9	2.1	6.0	6.1	1.0	0.0	1.7	0.6	0.0	2.6
Prop In Lane	1.00		0.03	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	943	986	65	903	948	84	0	218	26	0	167
V/C Ratio(X)	0.20	0.97	0.98	0.67	0.26	0.26	0.26	0.00	0.17	0.50	0.00	0.31
Avail Cap(c_a), veh/h	315	943	987	525	1257	1320	420	0	841	315	0	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	16.7	16.8	37.7	9.7	9.7	36.3	0.0	29.6	38.8	0.0	32.4
Incr Delay (d2), s/veh	0.3	23.1	23.6	4.4	0.1	0.1	0.6	0.0	0.1	5.3	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	18.4	19.5	0.9	1.8	1.9	0.4	0.0	0.6	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	39.7	40.4	42.1	9.7	9.7	36.9	0.0	29.8	44.1	0.0	32.8
LnGrp LOS	D	D	D	D	A	A	D	A	C	D	A	C
Approach Vol, veh/h		1906			531			59			65	
Approach Delay, s/veh		40.0			12.4			32.4			35.0	
Approach LOS		D			B			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	50.8	5.2	16.3	9.0	48.9	8.0	13.5
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	4.1	44.9	2.6	3.7	2.9	8.1	3.0	4.6
Green Ext Time (p_c), s	0.0	0.1	0.0	0.1	0.0	1.6	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	34.0
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	661	986	248	160	275	25	193	1280	117	25	260	44
Future Volume (veh/h)	661	986	248	160	275	25	193	1280	117	25	260	44
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	661	986	248	160	275	25	193	1280	117	25	260	44
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	685	1145	355	296	396	177	223	1330	593	81	1047	467
Arrive On Green	0.21	0.24	0.24	0.09	0.12	0.12	0.13	0.40	0.40	0.05	0.31	0.31
Sat Flow, veh/h	3237	4782	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	661	986	248	160	275	25	193	1280	117	25	260	44
Grp Sat Flow(s),veh/h/ln	1618	1594	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	22.0	21.5	16.6	5.1	8.6	1.6	12.3	40.8	5.6	1.6	6.3	2.3
Cycle Q Clear(g_c), s	22.0	21.5	16.6	5.1	8.6	1.6	12.3	40.8	5.6	1.6	6.3	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	685	1145	355	296	396	177	223	1330	593	81	1047	467
V/C Ratio(X)	0.96	0.86	0.70	0.54	0.69	0.14	0.87	0.96	0.20	0.31	0.25	0.09
Avail Cap(c_a), veh/h	685	1409	437	298	582	260	353	1348	601	154	1047	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	39.6	37.7	47.2	45.9	42.9	46.1	31.8	21.3	49.9	27.7	26.3
Incr Delay (d2), s/veh	25.6	4.1	2.3	2.0	0.8	0.1	7.7	16.1	0.1	2.1	0.1	0.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	8.5	6.1	2.1	3.5	0.6	5.4	18.4	1.9	0.7	2.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.0	43.7	40.1	49.1	46.8	43.0	53.8	47.9	21.3	52.0	27.8	26.4
LnGrp LOS	E	D	D	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		1895			460			1590			329	
Approach Delay, s/veh		51.7			47.4			46.7			29.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	32.0	20.5	40.2	29.0	18.9	11.3	49.4
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	32.0	23.0	* 33	23.0	19.0	10.0	44.0
Max Q Clear Time (g_c+I1), s	7.1	23.5	14.3	8.3	24.0	10.6	3.6	42.8
Green Ext Time (p_c), s	0.1	2.6	0.2	1.7	0.0	0.5	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	28	10	100	10	100	3	1450	60	10	600	10
Future Volume (veh/h)	10	28	10	100	10	100	3	1450	60	10	600	10
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	10	28	10	100	10	100	3	1450	60	10	600	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	43	154	55	190	29	291	11	2101	87	43	2225	691
Arrive On Green	0.03	0.12	0.12	0.11	0.21	0.21	0.01	0.45	0.45	0.03	0.47	0.47
Sat Flow, veh/h	1668	1232	440	1668	137	1369	1668	4710	195	1668	4782	1485
Grp Volume(v), veh/h	10	0	38	100	0	110	3	982	528	10	600	10
Grp Sat Flow(s),veh/h/ln	1668	0	1673	1668	0	1505	1668	1594	1717	1668	1594	1485
Q Serve(g_s), s	0.3	0.0	1.1	3.1	0.0	3.4	0.1	13.6	13.6	0.3	4.2	0.2
Cycle Q Clear(g_c), s	0.3	0.0	1.1	3.1	0.0	3.4	0.1	13.6	13.6	0.3	4.2	0.2
Prop In Lane	1.00		0.26	1.00		0.91	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	43	0	208	190	0	320	11	1422	766	43	2225	691
V/C Ratio(X)	0.23	0.00	0.18	0.53	0.00	0.34	0.28	0.69	0.69	0.23	0.27	0.01
Avail Cap(c_a), veh/h	302	0	1273	302	0	1145	242	1848	995	302	2946	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	21.6	23.1	0.0	18.5	27.3	12.2	12.2	26.4	9.0	7.9
Incr Delay (d2), s/veh	2.7	0.0	0.4	2.3	0.0	0.6	13.1	0.7	1.4	2.7	0.1	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.4	1.2	0.0	1.1	0.1	3.8	4.2	0.1	1.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	22.1	25.3	0.0	19.1	40.4	13.0	13.6	29.1	9.1	8.0
LnGrp LOS	C	A	C	C	A	B	D	B	B	C	A	A
Approach Vol, veh/h		48			210			1513			620	
Approach Delay, s/veh		23.5			22.1			13.3			9.4	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	28.6	10.3	10.9	4.4	29.7	5.4	15.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	32.0	10.0	42.0	8.0	34.0	10.0	42.0
Max Q Clear Time (g_c+I1), s	2.3	15.6	5.1	3.1	2.1	6.2	2.3	5.4
Green Ext Time (p_c), s	0.0	9.0	0.1	0.2	0.0	4.2	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	870	90	290	510	45	90	1065	510	22	474	834
Future Volume (veh/h)	502	870	90	290	510	45	90	1065	510	22	474	834
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	502	870	90	290	510	45	90	1065	0	22	474	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	572	919	486	273	875	418	85	1055		31	946	
Arrive On Green	0.18	0.28	0.28	0.16	0.26	0.26	0.05	0.32	0.00	0.02	0.28	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	502	870	90	290	510	45	90	1065	0	22	474	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	14.8	25.1	4.2	16.0	13.0	2.2	5.0	31.0	0.0	1.3	11.6	0.0
Cycle Q Clear(g_c), s	14.8	25.1	4.2	16.0	13.0	2.2	5.0	31.0	0.0	1.3	11.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	572	919	486	273	875	418	85	1055		31	946	
V/C Ratio(X)	0.88	0.95	0.19	1.06	0.58	0.11	1.06	1.01		0.72	0.50	
Avail Cap(c_a), veh/h	596	919	486	273	875	418	85	1055		68	1021	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.2	34.7	23.6	40.9	31.4	26.0	46.4	33.4	0.0	47.7	29.2	0.0
Incr Delay (d2), s/veh	14.8	18.5	0.4	71.9	1.6	0.2	113.3	30.0	0.0	26.5	1.5	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	11.8	1.5	11.6	5.0	0.8	4.7	16.0	0.0	0.8	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	53.2	24.0	112.8	32.9	26.3	159.7	63.4	0.0	74.3	30.7	0.0
LnGrp LOS	D	D	C	F	C	C	F	F		E	C	
Approach Vol, veh/h		1462			845			1155	A		496	A
Approach Delay, s/veh		51.7			60.0			70.9			32.6	
Approach LOS		D			E			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	33.0	9.0	33.8	23.3	31.7	5.8	37.0
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	27.0	5.0	30.0	18.0	25.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	18.0	27.1	7.0	13.6	16.8	15.0	3.3	33.0
Green Ext Time (p_c), s	0.0	0.0	0.0	4.8	0.5	3.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	10	0	2015	417	0	202	520
Future Volume (veh/h)	0	0	0	89	0	10	0	2015	417	0	202	520
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				89	0	10	0	2015	417	0	202	520
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				219	0	195	0	2963	595	0	2365	1101
Arrive On Green				0.07	0.00	0.07	0.00	0.74	0.74	0.00	0.74	0.74
Sat Flow, veh/h				3337	0	2969	0	4151	802	0	3346	1485
Grp Volume(v), veh/h				89	0	10	0	1597	835	0	202	520
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1594	1607	0	1594	1485
Q Serve(g_s), s				1.1	0.0	0.1	0.0	10.8	11.6	0.0	0.7	5.8
Cycle Q Clear(g_c), s				1.1	0.0	0.1	0.0	10.8	11.6	0.0	0.7	5.8
Prop In Lane				1.00		1.00	0.00		0.50	0.00		1.00
Lane Grp Cap(c), veh/h				219	0	195	0	2365	1192	0	2365	1101
V/C Ratio(X)				0.41	0.00	0.05	0.00	0.67	0.70	0.00	0.09	0.47
Avail Cap(c_a), veh/h				1446	0	1287	0	2609	1316	0	2609	1215
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.6	0.0	18.2	0.0	2.8	2.9	0.0	1.5	2.1
Incr Delay (d2), s/veh				1.2	0.0	0.1	0.0	0.6	1.5	0.0	0.0	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.0	0.0	0.0	0.4	0.7	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.8	0.0	18.3	0.0	3.4	4.4	0.0	1.5	2.4
LnGrp LOS				B	A	B	A	A	A	A	A	A
Approach Vol, veh/h					99			2432			722	
Approach Delay, s/veh					19.7			3.7			2.2	
Approach LOS					B			A			A	

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		34.8				34.8		6.7				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		34.0				34.0		18.0				
Max Q Clear Time (g_c+I1), s		13.6				7.8		3.1				
Green Ext Time (p_c), s		17.2				5.2		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		3.9
HCM 6th LOS		A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	910	0	360	0	0	0	0	1522	1090	0	281	10
Future Volume (veh/h)	910	0	360	0	0	0	0	1522	1090	0	281	10
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	0	1752				0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h	910	0	360				0	1522	1090	0	281	10
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	0	10				0	10	10	0	10	10
Cap, veh/h	1093	0	882				0	2192	1198	0	2174	77
Arrive On Green	0.34	0.00	0.34				0.00	0.46	0.46	0.00	0.46	0.46
Sat Flow, veh/h	3237	0	2613				0	4940	2613	0	4900	168
Grp Volume(v), veh/h	910	0	360				0	1522	1090	0	188	103
Grp Sat Flow(s),veh/h/ln	1618	0	1306				0	1594	1306	0	1594	1722
Q Serve(g_s), s	10.2	0.0	4.1				0.0	9.9	15.2	0.0	1.3	1.3
Cycle Q Clear(g_c), s	10.2	0.0	4.1				0.0	9.9	15.2	0.0	1.3	1.3
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.10
Lane Grp Cap(c), veh/h	1093	0	882				0	2192	1198	0	1461	789
V/C Ratio(X)	0.83	0.00	0.41				0.00	0.69	0.91	0.00	0.13	0.13
Avail Cap(c_a), veh/h	1156	0	933				0	2197	1200	0	1464	791
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	10.0				0.0	8.4	9.9	0.0	6.1	6.1
Incr Delay (d2), s/veh	5.1	0.0	0.3				0.0	1.0	10.4	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.9				0.0	2.4	4.6	0.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	10.3				0.0	9.4	20.2	0.0	6.1	6.2
LnGrp LOS	B	A	B				A	A	C	A	A	A
Approach Vol, veh/h		1270						2612			291	
Approach Delay, s/veh		15.2						13.9			6.2	
Approach LOS		B						B			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	22.0	17.2	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	14.0	18.0
Max Q Clear Time (g_c+I1), s	17.2	12.2	3.3
Green Ext Time (p_c), s	0.8	1.1	1.4

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	8	1895	0	0	0	511	1	0	0	0	0	0	20
Future Vol, veh/h	8	1895	0	0	0	511	1	0	0	0	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	400	-	-	-	205	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	-	0	-	-	16983	-	-	0	-
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	8	1895	0	0	0	511	1	0	0	0	0	0	20

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	512	0	-	1383	-	-	0			-	-	256
Stage 1	-	-	-	-	-	-	-			-	-	-
Stage 2	-	-	-	-	-	-	-			-	-	-
Critical Hdwy	4.3	-	-	5.8	-	-	-			-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-			-	-	-
Follow-up Hdwy	2.3	-	-	2.4	-	-	-			-	-	3.4
Pot Cap-1 Maneuver	996	-	0	247	0	-	-			0	0	719
Stage 1	-	-	0	-	0	-	-			0	0	-
Stage 2	-	-	0	-	0	-	-			0	0	-
Platoon blocked, %		-				-	-					
Mov Cap-1 Maneuver	996	-	-	247	-	-	-			-	0	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	-			-	0	-
Stage 1	-	-	-	-	-	-	-			-	0	-
Stage 2	-	-	-	-	-	-	-			-	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	996	-	247	-	-	719
HCM Lane V/C Ratio	0.008	-	-	-	-	0.028
HCM Control Delay (s)	8.6	-	0	-	-	10.2
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0	-	-	0.1

A9. Cumulative Plus Project Synchro Outputs

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	160	0	70	422	40	0	0	50	20
Future Volume (veh/h)	0	0	0	160	0	70	422	40	0	0	50	20
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				160	0	70	422	40	0	0	50	20
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				199	0	87	641	917	0	0	195	78
Arrive On Green				0.18	0.00	0.18	0.20	0.52	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1118	0	489	3237	1752	0	0	1190	476
Grp Volume(v), veh/h				230	0	0	422	40	0	0	0	70
Grp Sat Flow(s),veh/h/ln				1608	0	0	1618	1752	0	0	0	1666
Q Serve(g_s), s				4.2	0.0	0.0	3.7	0.3	0.0	0.0	0.0	1.1
Cycle Q Clear(g_c), s				4.2	0.0	0.0	3.7	0.3	0.0	0.0	0.0	1.1
Prop In Lane				0.70		0.30	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				286	0	0	641	917	0	0	0	274
V/C Ratio(X)				0.80	0.00	0.00	0.66	0.04	0.00	0.00	0.00	0.26
Avail Cap(c_a), veh/h				465	0	0	967	1272	0	0	0	443
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				12.0	0.0	0.0	11.3	3.5	0.0	0.0	0.0	11.1
Incr Delay (d2), s/veh				2.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				14.0	0.0	0.0	12.1	3.5	0.0	0.0	0.0	11.3
LnGrp LOS				B	A	A	B	A	A	A	A	B
Approach Vol, veh/h					230			462			70	
Approach Delay, s/veh					14.0			11.4			11.3	
Approach LOS					B			B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		20.8			10.9	9.9		9.6				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		22.1			9.1	8.1		8.8				
Max Q Clear Time (g_c+I1), s		2.3			5.7	3.1		6.2				
Green Ext Time (p_c), s		0.0			0.5	0.0		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	537	0	0	0	0	459	360	10	200	0
Future Volume (veh/h)	15	0	537	0	0	0	0	459	360	10	200	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	15	0	537				0	459	360	10	200	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	642	0	571				0	1073	479	22	1401	0
Arrive On Green	0.38	0.00	0.38				0.00	0.32	0.32	0.01	0.42	0.00
Sat Flow, veh/h	1668	0	1485				0	3416	1485	1668	3416	0
Grp Volume(v), veh/h	15	0	537				0	459	360	10	200	0
Grp Sat Flow(s),veh/h/ln	1668	0	1485				0	1664	1485	1668	1664	0
Q Serve(g_s), s	0.3	0.0	16.3				0.0	5.1	10.2	0.3	1.7	0.0
Cycle Q Clear(g_c), s	0.3	0.0	16.3				0.0	5.1	10.2	0.3	1.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	642	0	571				0	1073	479	22	1401	0
V/C Ratio(X)	0.02	0.00	0.94				0.00	0.43	0.75	0.46	0.14	0.00
Avail Cap(c_a), veh/h	642	0	571				0	1344	600	178	1985	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	13.9				0.0	12.5	14.2	22.9	8.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	23.5				0.0	0.4	4.9	14.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	7.8				0.0	1.5	3.3	0.2	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.9	0.0	37.4				0.0	12.8	19.1	37.3	8.4	0.0
LnGrp LOS	A	A	D				A	B	B	D	A	A
Approach Vol, veh/h		552						819			210	
Approach Delay, s/veh		36.7						15.6			9.8	
Approach LOS		D						B			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	4.6	20.0		22.2		24.6
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	5.6	18.9		* 18		27.9
Max Q Clear Time (g_c+I1), s	2.3	12.2		18.3		3.7
Green Ext Time (p_c), s	0.0	2.9		0.0		1.2

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	356	80	52	301	67	80	520	84	256	400	250
Future Volume (veh/h)	300	356	80	52	301	67	80	520	84	256	400	250
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	300	356	80	52	301	67	80	520	84	256	400	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	346	1040	464	94	546	230	124	812	362	153	883	417
Arrive On Green	0.20	0.29	0.29	0.06	0.15	0.15	0.07	0.24	0.24	0.09	0.27	0.27
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	300	356	80	52	301	67	80	520	84	256	400	250
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	10.8	5.2	2.5	2.0	5.2	2.6	2.9	9.2	3.0	6.0	6.6	9.1
Cycle Q Clear(g_c), s	10.8	5.2	2.5	2.0	5.2	2.6	2.9	9.2	3.0	6.0	6.6	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	1040	464	94	546	230	124	812	362	153	883	417
V/C Ratio(X)	0.87	0.34	0.17	0.56	0.55	0.29	0.64	0.64	0.23	1.67	0.45	0.60
Avail Cap(c_a), veh/h	459	2210	986	230	1779	749	162	1705	760	153	1705	805
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	18.1	17.1	30.1	25.5	24.5	29.6	22.2	19.8	29.7	20.1	21.0
Incr Delay (d2), s/veh	10.4	0.3	0.3	1.9	1.5	1.2	2.1	1.5	0.6	329.5	0.6	2.4
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	1.9	0.9	0.8	2.2	0.9	1.2	3.4	1.0	16.2	2.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	18.4	17.4	32.0	27.0	25.6	31.7	23.6	20.4	359.2	20.7	23.3
LnGrp LOS	D	B	B	C	C	C	C	C	C	F	C	C
Approach Vol, veh/h		736			420			684			906	
Approach Delay, s/veh		25.4			27.4			24.2			117.1	
Approach LOS		C			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	21.5	8.7	24.3	9.6	22.9	17.8	15.1
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	6.0	33.5	9.0	41.0	6.0	33.5	17.0	33.0
Max Q Clear Time (g_c+I1), s	8.6	11.2	4.0	7.2	4.9	11.1	12.8	7.2
Green Ext Time (p_c), s	0.0	4.8	0.0	3.6	0.0	5.2	0.1	3.0

Intersection Summary	
HCM 6th Ctrl Delay	55.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	977	50	20	1400	240	120	126	131	200	40	222
Future Volume (veh/h)	169	977	50	20	1400	240	120	126	131	200	40	222
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	169	977	50	20	1400	240	120	126	131	200	40	222
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	10
Cap, veh/h	181	1849	95	29	1591	670	149	200	178	235	294	263
Arrive On Green	0.10	0.54	0.54	0.02	0.45	0.45	0.08	0.12	0.12	0.14	0.18	0.18
Sat Flow, veh/h	1767	3412	175	1668	3526	1485	1767	1664	1485	1668	1664	1485
Grp Volume(v), veh/h	169	505	522	20	1400	240	120	126	131	200	40	222
Grp Sat Flow(s),veh/h/ln	1767	1763	1824	1668	1763	1485	1767	1664	1485	1668	1664	1485
Q Serve(g_s), s	9.0	17.4	17.4	1.1	34.2	10.0	6.3	6.8	8.1	11.1	1.9	13.7
Cycle Q Clear(g_c), s	9.0	17.4	17.4	1.1	34.2	10.0	6.3	6.8	8.1	11.1	1.9	13.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	955	989	29	1591	670	149	200	178	235	294	263
V/C Ratio(X)	0.93	0.53	0.53	0.69	0.88	0.36	0.81	0.63	0.73	0.85	0.14	0.85
Avail Cap(c_a), veh/h	181	988	1022	88	1782	750	149	387	345	318	563	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	13.9	13.9	46.2	23.6	17.0	42.6	39.6	40.1	39.7	32.8	37.7
Incr Delay (d2), s/veh	47.1	0.5	0.5	25.7	5.0	0.3	26.8	1.2	2.2	15.0	0.1	2.9
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	6.5	6.7	0.7	14.2	3.4	3.8	2.8	3.0	5.5	0.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.2	14.4	14.4	71.9	28.6	17.3	69.3	40.8	42.3	54.7	32.9	40.6
LnGrp LOS	F	B	B	E	C	B	E	D	D	D	C	D
Approach Vol, veh/h		1196			1660			377			462	
Approach Delay, s/veh		25.0			27.5			50.4			46.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.6	55.8	12.0	21.2	14.2	47.2	17.3	15.9
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.5
Max Green Setting (Gmax), s	5.6	53.0	8.0	32.0	9.7	47.8	18.0	22.0
Max Q Clear Time (g_c+I1), s	3.1	19.4	8.3	15.7	11.0	36.2	13.1	10.1
Green Ext Time (p_c), s	0.0	4.9	0.0	1.0	0.0	6.5	0.3	0.8

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	823	117	53	474	10	15	0	3	4	0	14
Future Volume (veh/h)	60	823	117	53	474	10	15	0	3	4	0	14
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	60	823	117	53	474	10	15	0	3	4	0	14
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	216	1131	161	94	1044	22	45	0	112	9	0	79
Arrive On Green	0.13	0.39	0.39	0.06	0.31	0.31	0.03	0.00	0.08	0.01	0.00	0.05
Sat Flow, veh/h	1668	2925	416	1668	3333	70	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	60	468	472	53	236	248	15	0	3	4	0	14
Grp Sat Flow(s),veh/h/ln	1668	1664	1677	1668	1664	1739	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.3	9.3	9.3	1.2	4.4	4.4	0.3	0.0	0.1	0.1	0.0	0.3
Cycle Q Clear(g_c), s	1.3	9.3	9.3	1.2	4.4	4.4	0.3	0.0	0.1	0.1	0.0	0.3
Prop In Lane	1.00		0.25	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	644	648	94	522	545	45	0	112	9	0	79
V/C Ratio(X)	0.28	0.73	0.73	0.57	0.45	0.45	0.33	0.00	0.03	0.44	0.00	0.18
Avail Cap(c_a), veh/h	648	1939	1954	1080	2586	2702	864	0	1730	648	0	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	10.1	10.1	17.8	10.6	10.6	18.4	0.0	16.5	19.1	0.0	17.5
Incr Delay (d2), s/veh	0.3	0.6	0.6	2.0	0.2	0.2	1.6	0.0	0.0	12.0	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.1	2.1	0.4	1.1	1.1	0.1	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	10.7	10.7	19.8	10.8	10.8	20.0	0.0	16.6	31.1	0.0	17.9
LnGrp LOS	B	B	B	B	B	B	B	A	B	C	A	B
Approach Vol, veh/h		1000			537			18			18	
Approach Delay, s/veh		11.0			11.7			19.4			20.8	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.2	20.7	4.2	7.5	9.0	17.9	5.1	6.7
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	3.3	11.3	2.1	2.1	3.3	6.4	2.3	2.3
Green Ext Time (p_c), s	0.0	3.7	0.0	0.0	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	322	121	158	442	25	90	401	132	25	380	85
Future Volume (veh/h)	130	322	121	158	442	25	90	401	132	25	380	85
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	130	322	121	158	442	25	90	401	132	25	380	85
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	368	909	282	481	748	334	168	749	334	94	602	268
Arrive On Green	0.11	0.19	0.19	0.15	0.22	0.22	0.10	0.23	0.23	0.06	0.18	0.18
Sat Flow, veh/h	3237	4782	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	130	322	121	158	442	25	90	401	132	25	380	85
Grp Sat Flow(s),veh/h/ln	1618	1594	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	2.3	3.7	4.5	2.8	7.5	0.8	3.2	6.7	4.8	0.9	6.7	3.1
Cycle Q Clear(g_c), s	2.3	3.7	4.5	2.8	7.5	0.8	3.2	6.7	4.8	0.9	6.7	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	909	282	481	748	334	168	749	334	94	602	268
V/C Ratio(X)	0.35	0.35	0.43	0.33	0.59	0.07	0.54	0.54	0.39	0.27	0.63	0.32
Avail Cap(c_a), veh/h	615	2272	705	513	1476	658	211	1898	846	264	2109	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	22.2	22.5	24.1	21.9	19.3	27.0	21.6	20.8	28.5	23.9	22.5
Incr Delay (d2), s/veh	0.2	0.1	0.4	0.4	0.3	0.0	1.0	0.2	0.3	1.5	1.1	0.7
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	1.5	1.0	2.6	0.3	1.2	2.4	1.5	0.4	2.5	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	22.3	22.9	24.5	22.2	19.3	28.0	21.8	21.1	30.0	25.0	23.1
LnGrp LOS	C	C	C	C	C	B	C	C	C	C	C	C
Approach Vol, veh/h		573			625			623			490	
Approach Delay, s/veh		23.3			22.6			22.5			24.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	18.0	12.3	17.4	13.2	20.2	9.5	20.2
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	30.0	8.0	* 40	12.0	28.0	10.0	36.0
Max Q Clear Time (g_c+I1), s	4.8	6.5	5.2	8.7	4.3	9.5	2.9	8.7
Green Ext Time (p_c), s	0.2	1.1	0.0	2.8	0.1	1.1	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	10	14	50	10	10	61	552	100	100	446	6
Future Volume (veh/h)	11	10	14	50	10	10	61	552	100	100	446	6
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	11	10	14	50	10	10	61	552	100	100	446	6
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	48	86	121	138	149	149	159	1098	195	266	1592	494
Arrive On Green	0.03	0.13	0.13	0.08	0.19	0.19	0.10	0.27	0.27	0.16	0.33	0.33
Sat Flow, veh/h	1668	661	925	1668	804	804	1668	4083	726	1668	4782	1485
Grp Volume(v), veh/h	11	0	24	50	0	20	61	429	223	100	446	6
Grp Sat Flow(s),veh/h/ln	1668	0	1585	1668	0	1607	1668	1594	1621	1668	1594	1485
Q Serve(g_s), s	0.3	0.0	0.6	1.3	0.0	0.5	1.5	5.1	5.2	2.4	3.1	0.1
Cycle Q Clear(g_c), s	0.3	0.0	0.6	1.3	0.0	0.5	1.5	5.1	5.2	2.4	3.1	0.1
Prop In Lane	1.00		0.58	1.00		0.50	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	48	0	207	138	0	297	159	857	436	266	1592	494
V/C Ratio(X)	0.23	0.00	0.12	0.36	0.00	0.07	0.38	0.50	0.51	0.38	0.28	0.01
Avail Cap(c_a), veh/h	374	0	1527	336	0	1512	299	2285	1162	374	3642	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	17.1	19.4	0.0	15.0	19.0	13.8	13.8	16.8	11.0	10.0
Incr Delay (d2), s/veh	2.4	0.0	0.2	1.6	0.0	0.1	1.5	0.5	0.9	0.9	0.1	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.5	0.0	0.1	0.6	1.5	1.6	0.8	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	17.4	20.9	0.0	15.1	20.5	14.2	14.8	17.7	11.0	10.0
LnGrp LOS	C	A	B	C	A	B	C	B	B	B	B	A
Approach Vol, veh/h		35			70			713			552	
Approach Delay, s/veh		19.3			19.3			14.9			12.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	16.0	7.7	9.8	8.2	18.9	5.3	12.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	32.0	9.0	43.0	8.0	34.0	10.0	42.0
Max Q Clear Time (g_c+I1), s	1.4	7.2	3.3	2.6	3.5	5.1	2.3	2.5
Green Ext Time (p_c), s	0.1	4.2	0.0	0.1	0.0	3.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	820	100	490	960	85	210	613	630	33	208	460
Future Volume (veh/h)	408	820	100	490	960	85	210	613	630	33	208	460
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	408	820	100	490	960	85	210	613	0	33	208	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	464	879	585	513	1425	672	217	784		41	431	
Arrive On Green	0.14	0.26	0.26	0.31	0.43	0.43	0.13	0.24	0.00	0.02	0.13	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	408	820	100	490	960	85	210	613	0	33	208	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	16.1	31.4	5.7	37.6	30.3	4.3	16.4	22.5	0.0	2.6	7.6	0.0
Cycle Q Clear(g_c), s	16.1	31.4	5.7	37.6	30.3	4.3	16.4	22.5	0.0	2.6	7.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	464	879	585	513	1425	672	217	784		41	431	
V/C Ratio(X)	0.88	0.93	0.17	0.96	0.67	0.13	0.97	0.78		0.81	0.48	
Avail Cap(c_a), veh/h	496	892	591	524	1428	673	217	1045		77	765	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	46.9	25.7	44.3	30.0	20.7	56.5	46.8	0.0	63.4	52.7	0.0
Incr Delay (d2), s/veh	17.2	16.7	0.3	28.7	1.7	0.2	51.4	6.4	0.0	29.9	3.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	14.6	2.0	18.7	11.6	1.5	9.8	9.8	0.0	1.4	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	63.6	26.0	73.0	31.7	20.9	107.9	53.2	0.0	93.3	55.8	0.0
LnGrp LOS	E	E	C	E	C	C	F	D		F	E	
Approach Vol, veh/h		1328			1535			823	A		241	A
Approach Delay, s/veh		63.4			44.3			67.1			60.9	
Approach LOS		E			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.1	40.5	21.0	22.9	24.7	61.9	7.2	36.7
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	41.0	35.0	17.0	30.0	20.0	56.0	6.0	41.0
Max Q Clear Time (g_c+I1), s	39.6	33.4	18.4	9.6	18.1	32.3	4.6	24.5
Green Ext Time (p_c), s	0.5	1.1	0.0	2.1	0.6	10.3	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	56.5
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	378	0	10	0	242	300	0	184	460
Future Volume (veh/h)	0	0	0	378	0	10	0	242	300	0	184	460
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				378	0	10	0	242	300	0	184	460
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				717	0	638	0	1455	677	0	1455	677
Arrive On Green				0.21	0.00	0.21	0.00	0.46	0.46	0.00	0.46	0.46
Sat Flow, veh/h				3337	0	2969	0	3346	1485	0	3346	1485
Grp Volume(v), veh/h				378	0	10	0	242	300	0	184	460
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1594	1485	0	1594	1485
Q Serve(g_s), s				2.4	0.0	0.1	0.0	1.1	3.3	0.0	0.8	5.9
Cycle Q Clear(g_c), s				2.4	0.0	0.1	0.0	1.1	3.3	0.0	0.8	5.9
Prop In Lane				1.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h				717	0	638	0	1455	677	0	1455	677
V/C Ratio(X)				0.53	0.00	0.02	0.00	0.17	0.44	0.00	0.13	0.68
Avail Cap(c_a), veh/h				2470	0	2198	0	2491	1160	0	2491	1160
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.5	0.0	7.5	0.0	3.9	4.5	0.0	3.8	5.2
Incr Delay (d2), s/veh				0.6	0.0	0.0	0.0	0.1	0.5	0.0	0.0	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				9.1	0.0	7.5	0.0	3.9	5.0	0.0	3.9	6.4
LnGrp LOS				A	A	A	A	A	A	A	A	A
Approach Vol, veh/h					388			542			644	
Approach Delay, s/veh					9.0			4.5			5.7	
Approach LOS					A			A			A	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	15.1	15.1	9.2
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	19.0	18.0
Max Q Clear Time (g_c+I1), s	5.3	7.9	4.4
Green Ext Time (p_c), s	3.1	3.2	1.2

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	0	354	0	0	0	0	232	652	0	552	10
Future Volume (veh/h)	310	0	354	0	0	0	0	232	652	0	552	10
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	0	1752				0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h	310	0	354				0	232	652	0	552	10
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	0	10				0	10	10	0	10	10
Cap, veh/h	803	0	649				0	2060	1126	0	2084	38
Arrive On Green	0.25	0.00	0.25				0.00	0.43	0.43	0.00	0.43	0.43
Sat Flow, veh/h	3237	0	2613				0	4940	2613	0	4995	87
Grp Volume(v), veh/h	310	0	354				0	232	652	0	363	199
Grp Sat Flow(s),veh/h/ln	1618	0	1306				0	1594	1306	0	1594	1736
Q Serve(g_s), s	2.0	0.0	2.9				0.0	0.7	4.7	0.0	1.8	1.8
Cycle Q Clear(g_c), s	2.0	0.0	2.9				0.0	0.7	4.7	0.0	1.8	1.8
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.05
Lane Grp Cap(c), veh/h	803	0	649				0	2060	1126	0	1374	748
V/C Ratio(X)	0.39	0.00	0.55				0.00	0.11	0.58	0.00	0.26	0.27
Avail Cap(c_a), veh/h	1298	0	1048				0	4221	2306	0	2814	1532
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	7.8	0.0	8.1				0.0	4.2	5.4	0.0	4.6	4.6
Incr Delay (d2), s/veh	0.3	0.0	0.7				0.0	0.0	0.5	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.5				0.0	0.1	0.5	0.0	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	0.0	8.9				0.0	4.3	5.9	0.0	4.7	4.7
LnGrp LOS	A	A	A				A	A	A	A	A	A
Approach Vol, veh/h		664						884			562	
Approach Delay, s/veh		8.5						5.4			4.7	
Approach LOS		A						A			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	14.7	10.2	14.7
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	10.0	22.0
Max Q Clear Time (g_c+I1), s	6.7	4.9	3.8
Green Ext Time (p_c), s	4.0	1.3	3.1

Intersection Summary	
HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	54	3	7	83
Future Vol, veh/h	5	5	54	3	7	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	100	100	10	100	100	10
Mvmt Flow	5	5	54	3	7	83

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	153	56	0	0	57	0
Stage 1	56	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	655	792	-	-	1098	-
Stage 1	766	-	-	-	-	-
Stage 2	730	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	650	792	-	-	1098	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	1098	-
HCM Lane V/C Ratio	-	-	0.014	0.006	-
HCM Control Delay (s)	-	-	10.2	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	8	11	48	83	89
Future Vol, veh/h	1	8	11	48	83	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	10	3	3	10
Mvmt Flow	1	8	11	48	83	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	290	35	0	0	59	0
Stage 1	35	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	699	1035	-	-	1538	-
Stage 1	985	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	659	1035	-	-	1538	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	985	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	974	1538	-
HCM Lane V/C Ratio	-	-	0.009	0.054	-
HCM Control Delay (s)	-	-	8.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	687	142	0	537	0	1
Future Vol, veh/h	687	142	0	537	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	687	142	0	537	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	415
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	499
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	499
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	499	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-
HCM Control Delay (s)	12.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	593	80	91	524	2	6	0	4	1	0	7
Future Volume (veh/h)	15	593	80	91	524	2	6	0	4	1	0	7
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1856	1752	1752	1856	1856	1856	1752	1752	1752
Adj Flow Rate, veh/h	15	593	80	91	524	2	6	0	4	1	0	7
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	3	10	10	3	3	3	10	10	10
Cap, veh/h	32	1123	150	136	1092	4	14	0	450	4	0	415
Arrive On Green	0.02	0.26	0.26	0.08	0.32	0.32	0.01	0.00	0.29	0.00	0.00	0.28
Sat Flow, veh/h	1668	4269	569	1767	3401	13	1767	0	1572	1668	0	1485
Grp Volume(v), veh/h	15	441	232	91	256	270	6	0	4	1	0	7
Grp Sat Flow(s),veh/h/ln	1668	1594	1649	1767	1664	1749	1767	0	1572	1668	0	1485
Q Serve(g_s), s	0.4	5.1	5.2	2.2	5.3	5.3	0.1	0.0	0.1	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.4	5.1	5.2	2.2	5.3	5.3	0.1	0.0	0.1	0.0	0.0	0.1
Prop In Lane	1.00		0.34	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	839	434	136	534	562	14	0	450	4	0	415
V/C Ratio(X)	0.47	0.53	0.53	0.67	0.48	0.48	0.42	0.00	0.01	0.26	0.00	0.02
Avail Cap(c_a), veh/h	194	2375	1229	370	1395	1466	206	0	659	194	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.9	13.5	13.6	19.3	11.7	11.7	21.2	0.0	11.0	21.4	0.0	11.2
Incr Delay (d2), s/veh	10.4	0.5	1.0	5.5	0.7	0.6	18.7	0.0	0.0	31.7	0.0	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.5	0.9	1.5	1.5	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	14.1	14.6	24.8	12.4	12.3	39.9	0.0	11.0	53.1	0.0	11.2
LnGrp LOS	C	B	B	C	B	B	D	A	B	D	A	B
Approach Vol, veh/h		688			617			10			8	
Approach Delay, s/veh		14.6			14.2			28.3			16.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	16.3	7.3	15.3	4.3	16.0	4.8	17.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	18.0	9.0	32.0	5.0	18.0	5.0	36.0
Max Q Clear Time (g_c+I1), s	2.0	2.1	4.2	7.2	2.1	2.1	2.4	7.3
Green Ext Time (p_c), s	0.0	0.0	0.1	4.1	0.0	0.0	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	572	26	0	617	0	1
Future Vol, veh/h	572	26	0	617	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	572	26	0	617	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	299
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	592
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	592
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	592	-	-	-
HCM Lane V/C Ratio	0.002	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	623	579	80
Future Vol, veh/h	0	2	0	623	579	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	10	10	10	3
Mvmt Flow	0	2	0	623	579	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	330	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	566	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	566	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	566	-	-
HCM Lane V/C Ratio	-	0.004	-	-
HCM Control Delay (s)	-	11.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	180	0	20	781	75	0	0	220	20
Future Volume (veh/h)	0	0	0	180	0	20	781	75	0	0	220	20
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1752	1900	1752	1752	0	0	1752	1752
Adj Flow Rate, veh/h				180	0	20	781	75	0	0	220	20
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	10	0	10	10	0	0	10	10
Cap, veh/h				210	0	23	935	1069	0	0	297	27
Arrive On Green				0.14	0.00	0.14	0.29	0.61	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1483	0	165	3237	1752	0	0	1582	144
Grp Volume(v), veh/h				200	0	0	781	75	0	0	0	240
Grp Sat Flow(s),veh/h/ln				1648	0	0	1618	1752	0	0	0	1726
Q Serve(g_s), s				4.4	0.0	0.0	8.3	0.6	0.0	0.0	0.0	4.8
Cycle Q Clear(g_c), s				4.4	0.0	0.0	8.3	0.6	0.0	0.0	0.0	4.8
Prop In Lane				0.90		0.10	1.00		0.00	0.00		0.08
Lane Grp Cap(c), veh/h				234	0	0	935	1069	0	0	0	324
V/C Ratio(X)				0.86	0.00	0.00	0.83	0.07	0.00	0.00	0.00	0.74
Avail Cap(c_a), veh/h				234	0	0	979	1227	0	0	0	456
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				15.4	0.0	0.0	12.2	2.9	0.0	0.0	0.0	14.1
Incr Delay (d2), s/veh				24.5	0.0	0.0	6.0	0.0	0.0	0.0	0.0	2.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.9	0.0	0.0	2.8	0.1	0.0	0.0	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.9	0.0	0.0	18.2	2.9	0.0	0.0	0.0	16.1
LnGrp LOS				D	A	A	B	A	A	A	A	B
Approach Vol, veh/h					200			856			240	
Approach Delay, s/veh					39.9			16.8			16.1	
Approach LOS					D			B			B	

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		27.3			15.5	11.8		9.4				
Change Period (Y+Rc), s		4.9			4.9	4.9		4.2				
Max Green Setting (Gmax), s		25.7			11.1	9.7		5.2				
Max Q Clear Time (g_c+I1), s		2.6			10.3	6.8		6.4				
Green Ext Time (p_c), s		0.1			0.3	0.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	432	0	0	0	0	871	470	100	300	0
Future Volume (veh/h)	20	0	432	0	0	0	0	871	470	100	300	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752				0	1752	1752	1752	1752	0
Adj Flow Rate, veh/h	20	0	432				0	871	470	100	300	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10				0	10	10	10	10	0
Cap, veh/h	529	0	470				0	1243	554	126	1732	0
Arrive On Green	0.32	0.00	0.32				0.00	0.37	0.37	0.08	0.52	0.00
Sat Flow, veh/h	1668	0	1485				0	3416	1485	1668	3416	0
Grp Volume(v), veh/h	20	0	432				0	871	470	100	300	0
Grp Sat Flow(s),veh/h/ln	1668	0	1485				0	1664	1485	1668	1664	0
Q Serve(g_s), s	0.5	0.0	15.7				0.0	12.4	16.2	3.3	2.7	0.0
Cycle Q Clear(g_c), s	0.5	0.0	15.7				0.0	12.4	16.2	3.3	2.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	529	0	470				0	1243	554	126	1732	0
V/C Ratio(X)	0.04	0.00	0.92				0.00	0.70	0.85	0.80	0.17	0.00
Avail Cap(c_a), veh/h	537	0	478				0	1304	582	209	1959	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	0.0	18.4				0.0	14.9	16.1	25.4	7.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	22.1				0.0	1.8	11.4	10.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	7.4				0.0	4.1	6.2	1.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.2	0.0	40.5				0.0	16.7	27.4	36.3	7.1	0.0
LnGrp LOS	B	A	D				A	B	C	D	A	A
Approach Vol, veh/h		452						1341			400	
Approach Delay, s/veh		39.3						20.4			14.4	
Approach LOS		D						C			B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.2	25.8		21.9		34.0
Change Period (Y+Rc), s	4.0	4.9		* 4.2		4.9
Max Green Setting (Gmax), s	7.0	21.9		* 18		32.9
Max Q Clear Time (g_c+I1), s	5.3	18.2		17.7		4.7
Green Ext Time (p_c), s	0.0	2.7		0.1		2.0

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1500	120	56	294	194	110	610	99	172	580	170
Future Volume (veh/h)	320	1500	120	56	294	194	110	610	99	172	580	170
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	1500	120	56	294	194	110	610	99	172	580	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	318	1578	704	79	1110	467	124	799	356	100	765	362
Arrive On Green	0.18	0.45	0.45	0.05	0.31	0.31	0.07	0.24	0.24	0.06	0.23	0.23
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	1500	120	56	294	194	110	610	99	172	580	170
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	18.0	40.9	4.6	3.3	6.2	10.3	6.2	17.0	5.4	6.0	16.2	9.3
Cycle Q Clear(g_c), s	18.0	40.9	4.6	3.3	6.2	10.3	6.2	17.0	5.4	6.0	16.2	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	1578	704	79	1110	467	124	799	356	100	765	362
V/C Ratio(X)	1.01	0.95	0.17	0.71	0.26	0.42	0.89	0.76	0.28	1.72	0.76	0.47
Avail Cap(c_a), veh/h	318	1587	708	100	1164	490	124	1082	483	100	1049	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	26.5	16.5	46.9	25.6	27.0	46.1	35.3	30.9	47.0	35.9	33.2
Incr Delay (d2), s/veh	51.8	12.9	0.2	9.8	0.2	1.0	47.5	3.2	0.7	361.3	3.1	1.6
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	18.5	1.7	1.6	2.6	3.7	4.3	7.0	2.0	12.5	6.7	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.8	39.5	16.7	56.7	25.8	28.0	93.5	38.5	31.7	408.2	39.0	34.9
LnGrp LOS	F	D	B	E	C	C	F	D	C	F	D	C
Approach Vol, veh/h		1940			544			819			922	
Approach Delay, s/veh		46.9			29.8			45.1			107.1	
Approach LOS		D			C			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	29.5	9.7	49.7	12.0	28.5	23.0	36.5
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	6.0	32.5	6.0	45.0	7.0	31.5	18.0	33.0
Max Q Clear Time (g_c+I1), s	8.3	19.0	5.3	42.9	8.2	18.2	20.0	12.3
Green Ext Time (p_c), s	0.0	4.5	0.0	1.8	0.0	4.7	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	1303	140	46	1025	370	90	530	30	130	192	395
Future Volume (veh/h)	309	1303	140	46	1025	370	90	530	30	130	192	395
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	309	1303	140	46	1025	370	90	530	30	130	192	395
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	10
Cap, veh/h	286	1362	146	57	1024	431	99	819	46	161	493	440
Arrive On Green	0.16	0.42	0.42	0.03	0.29	0.29	0.06	0.26	0.26	0.10	0.30	0.30
Sat Flow, veh/h	1767	3213	344	1668	3526	1485	1767	3202	181	1668	1664	1485
Grp Volume(v), veh/h	309	712	731	46	1025	370	90	275	285	130	192	395
Grp Sat Flow(s),veh/h/ln	1767	1763	1794	1668	1763	1485	1767	1664	1719	1668	1664	1485
Q Serve(g_s), s	14.5	35.0	35.4	2.5	26.0	21.1	4.5	13.2	13.2	6.8	8.2	22.8
Cycle Q Clear(g_c), s	14.5	35.0	35.4	2.5	26.0	21.1	4.5	13.2	13.2	6.8	8.2	22.8
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	286	747	760	57	1024	431	99	425	439	161	493	440
V/C Ratio(X)	1.08	0.95	0.96	0.81	1.00	0.86	0.91	0.65	0.65	0.81	0.39	0.90
Avail Cap(c_a), veh/h	286	747	760	75	1024	431	99	427	442	261	595	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	24.9	25.1	43.0	31.8	30.0	42.1	29.7	29.7	39.6	25.1	30.2
Incr Delay (d2), s/veh	76.1	22.2	23.4	38.2	28.5	15.8	63.0	2.6	2.6	9.1	0.2	14.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	18.0	18.8	1.6	14.5	9.2	3.7	5.5	5.7	3.2	3.2	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.6	47.1	48.5	81.2	60.2	45.8	105.0	32.3	32.3	48.7	25.2	44.6
LnGrp LOS	F	D	D	F	F	D	F	C	C	D	C	D
Approach Vol, veh/h		1752			1441			650			717	
Approach Delay, s/veh		59.4			57.2			42.4			40.2	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	42.5	9.0	31.0	19.0	30.5	12.7	27.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.5
Max Green Setting (Gmax), s	4.0	37.0	5.0	32.0	14.5	26.0	14.0	23.0
Max Q Clear Time (g_c+I1), s	4.5	37.4	6.5	24.8	16.5	28.0	8.8	15.2
Green Ext Time (p_c), s	0.0	0.0	0.0	1.7	0.0	0.0	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	53.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2072	103	49	612	4	184	0	49	13	0	52
Future Volume (veh/h)	21	2072	103	49	612	4	184	0	49	13	0	52
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	21	2072	103	49	612	4	184	0	49	13	0	52
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	95	1653	82	66	1678	11	220	0	331	26	0	159
Arrive On Green	0.06	0.51	0.51	0.04	0.49	0.49	0.13	0.00	0.22	0.02	0.00	0.11
Sat Flow, veh/h	1668	3228	159	1668	3390	22	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	21	1060	1115	49	300	316	184	0	49	13	0	52
Grp Sat Flow(s),veh/h/ln	1668	1664	1723	1668	1664	1748	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.1	45.0	45.0	2.6	9.8	9.8	9.5	0.0	2.3	0.7	0.0	2.8
Cycle Q Clear(g_c), s	1.1	45.0	45.0	2.6	9.8	9.8	9.5	0.0	2.3	0.7	0.0	2.8
Prop In Lane	1.00		0.09	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	852	883	66	824	865	220	0	331	26	0	159
V/C Ratio(X)	0.22	1.24	1.26	0.74	0.36	0.36	0.84	0.00	0.15	0.50	0.00	0.33
Avail Cap(c_a), veh/h	285	852	883	475	1137	1194	380	0	760	285	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.6	21.4	21.4	41.7	13.7	13.7	37.2	0.0	27.4	42.9	0.0	36.3
Incr Delay (d2), s/veh	0.4	119.3	127.8	5.9	0.1	0.1	3.2	0.0	0.1	5.5	0.0	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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	42.8	46.4	1.1	3.2	3.4	4.0	0.0	0.8	0.3	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	140.7	149.2	47.6	13.8	13.8	40.4	0.0	27.5	48.5	0.0	36.8
LnGrp LOS	D	F	F	D	B	B	D	A	C	D	A	D
Approach Vol, veh/h		2196			665			233			65	
Approach Delay, s/veh		144.1			16.3			37.7			39.1	
Approach LOS		F			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	50.8	5.4	24.2	9.0	49.3	15.6	14.0
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	25.0	45.0	15.0	45.0	15.0	60.0	20.0	35.0
Max Q Clear Time (g_c+I1), s	4.6	47.0	2.7	4.3	3.1	11.8	11.5	4.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.1	0.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	107.2
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	756	1030	248	187	297	25	204	1281	117	25	304	100
Future Volume (veh/h)	756	1030	248	187	297	25	204	1281	117	25	304	100
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	756	1030	248	187	297	25	204	1281	117	25	304	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	674	1180	366	292	428	191	233	1322	590	81	1018	454
Arrive On Green	0.21	0.25	0.25	0.09	0.13	0.13	0.14	0.40	0.40	0.05	0.31	0.31
Sat Flow, veh/h	3237	4782	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	756	1030	248	187	297	25	204	1281	117	25	304	100
Grp Sat Flow(s),veh/h/ln	1618	1594	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	23.0	22.8	16.7	6.2	9.4	1.6	13.2	41.6	5.7	1.6	7.7	5.5
Cycle Q Clear(g_c), s	23.0	22.8	16.7	6.2	9.4	1.6	13.2	41.6	5.7	1.6	7.7	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	674	1180	366	292	428	191	233	1322	590	81	1018	454
V/C Ratio(X)	1.12	0.87	0.68	0.64	0.69	0.13	0.87	0.97	0.20	0.31	0.30	0.22
Avail Cap(c_a), veh/h	674	1386	430	293	573	255	348	1326	592	151	1018	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	39.9	37.6	48.5	46.0	42.6	46.5	32.6	21.8	50.7	29.3	28.5
Incr Delay (d2), s/veh	73.0	5.1	2.2	4.6	1.1	0.1	10.8	17.7	0.1	2.1	0.2	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	9.1	6.1	2.6	3.8	0.6	6.0	19.0	1.9	0.7	3.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.7	45.0	39.8	53.1	47.1	42.7	57.3	50.3	21.8	52.9	29.4	28.8
LnGrp LOS	F	D	D	D	D	D	E	D	C	D	C	C
Approach Vol, veh/h		2034			509			1602			429	
Approach Delay, s/veh		71.0			49.1			49.1			30.7	
Approach LOS		E			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	33.2	21.4	39.8	29.0	20.2	11.4	49.8
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	32.0	23.0	* 33	23.0	19.0	10.0	44.0
Max Q Clear Time (g_c+I1), s	18.2	24.8	15.2	9.7	25.0	11.4	3.6	43.6
Green Ext Time (p_c), s	0.1	2.4	0.2	2.1	0.0	0.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	57.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	28	29	100	10	100	49	1461	60	20	641	10
Future Volume (veh/h)	11	28	29	100	10	100	49	1461	60	20	641	10
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	11	28	29	100	10	100	49	1461	60	20	641	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	47	97	100	185	28	282	126	2072	85	79	1969	611
Arrive On Green	0.03	0.12	0.12	0.11	0.21	0.21	0.08	0.44	0.44	0.05	0.41	0.41
Sat Flow, veh/h	1668	788	816	1668	137	1369	1668	4712	193	1668	4782	1485
Grp Volume(v), veh/h	11	0	57	100	0	110	49	989	532	20	641	10
Grp Sat Flow(s),veh/h/ln	1668	0	1605	1668	0	1505	1668	1594	1717	1668	1594	1485
Q Serve(g_s), s	0.4	0.0	1.9	3.3	0.0	3.6	1.6	14.5	14.5	0.7	5.2	0.2
Cycle Q Clear(g_c), s	0.4	0.0	1.9	3.3	0.0	3.6	1.6	14.5	14.5	0.7	5.2	0.2
Prop In Lane	1.00		0.51	1.00		0.91	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	47	0	197	185	0	310	126	1402	755	79	1969	611
V/C Ratio(X)	0.24	0.00	0.29	0.54	0.00	0.35	0.39	0.71	0.71	0.25	0.33	0.02
Avail Cap(c_a), veh/h	291	0	1174	291	0	1101	232	1777	957	291	2832	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	22.9	24.1	0.0	19.5	25.3	13.1	13.1	26.4	11.5	10.0
Incr Delay (d2), s/veh	2.5	0.0	0.8	2.4	0.0	0.7	1.9	0.9	1.7	1.6	0.1	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.7	1.3	0.0	1.2	0.6	4.2	4.7	0.3	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.0	23.7	26.6	0.0	20.2	27.2	14.0	14.8	28.0	11.6	10.0
LnGrp LOS	C	A	C	C	A	C	C	B	B	C	B	B
Approach Vol, veh/h		68			210			1570			671	
Approach Delay, s/veh		24.7			23.2			14.7			12.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.7	29.2	10.4	11.1	8.3	27.6	5.6	15.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	32.0	10.0	42.0	8.0	34.0	10.0	42.0
Max Q Clear Time (g_c+I1), s	2.7	16.5	5.3	3.9	3.6	7.2	2.4	5.6
Green Ext Time (p_c), s	0.0	8.8	0.1	0.3	0.0	4.5	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	870	90	290	510	46	90	1119	510	23	529	837
Future Volume (veh/h)	502	870	90	290	510	46	90	1119	510	23	529	837
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	502	870	90	290	510	46	90	1119	0	23	529	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	572	918	485	273	874	418	85	1054		32	948	
Arrive On Green	0.18	0.28	0.28	0.16	0.26	0.26	0.05	0.32	0.00	0.02	0.28	0.00
Sat Flow, veh/h	3237	3328	1485	1668	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	502	870	90	290	510	46	90	1119	0	23	529	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1668	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	14.8	25.1	4.3	16.0	13.1	2.2	5.0	31.0	0.0	1.3	13.2	0.0
Cycle Q Clear(g_c), s	14.8	25.1	4.3	16.0	13.1	2.2	5.0	31.0	0.0	1.3	13.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	572	918	485	273	874	418	85	1054		32	948	
V/C Ratio(X)	0.88	0.95	0.19	1.06	0.58	0.11	1.06	1.06		0.73	0.56	
Avail Cap(c_a), veh/h	595	918	485	273	874	418	85	1054		68	1020	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.3	34.7	23.6	40.9	31.4	26.1	46.4	33.4	0.0	47.7	29.8	0.0
Incr Delay (d2), s/veh	14.8	18.6	0.4	72.2	1.6	0.2	113.5	45.5	0.0	26.7	1.9	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	11.9	1.5	11.6	5.0	0.8	4.7	18.2	0.0	0.8	5.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	53.4	24.0	113.1	33.0	26.3	159.9	78.9	0.0	74.4	31.7	0.0
LnGrp LOS	D	D	C	F	C	C	F	F		E	C	
Approach Vol, veh/h		1462			846			1209	A		552	A
Approach Delay, s/veh		51.8			60.1			85.0			33.4	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	33.0	9.0	33.9	23.3	31.7	5.9	37.0
Change Period (Y+Rc), s	6.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	27.0	5.0	30.0	18.0	25.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	18.0	27.1	7.0	15.2	16.8	15.1	3.3	33.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.1	0.5	3.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	145	0	10	0	2025	452	0	212	520
Future Volume (veh/h)	0	0	0	145	0	10	0	2025	452	0	212	520
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1752	1752	1752	0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h				145	0	10	0	2025	452	0	212	520
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				10	10	10	0	10	10	0	10	10
Cap, veh/h				274	0	244	0	2881	621	0	2332	1086
Arrive On Green				0.08	0.00	0.08	0.00	0.73	0.73	0.00	0.73	0.73
Sat Flow, veh/h				3337	0	2969	0	4096	849	0	3346	1485
Grp Volume(v), veh/h				145	0	10	0	1626	851	0	212	520
Grp Sat Flow(s),veh/h/ln				1668	0	1485	0	1594	1599	0	1594	1485
Q Serve(g_s), s				1.8	0.0	0.1	0.0	12.0	13.1	0.0	0.8	6.2
Cycle Q Clear(g_c), s				1.8	0.0	0.1	0.0	12.0	13.1	0.0	0.8	6.2
Prop In Lane				1.00		1.00	0.00		0.53	0.00		1.00
Lane Grp Cap(c), veh/h				274	0	244	0	2332	1170	0	2332	1086
V/C Ratio(X)				0.53	0.00	0.04	0.00	0.70	0.73	0.00	0.09	0.48
Avail Cap(c_a), veh/h				1399	0	1245	0	2525	1266	0	2525	1176
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				18.9	0.0	18.1	0.0	3.2	3.3	0.0	1.7	2.4
Incr Delay (d2), s/veh				1.6	0.0	0.1	0.0	0.8	2.0	0.0	0.0	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.7	0.0	0.0	0.0	0.8	1.2	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.5	0.0	18.2	0.0	3.9	5.3	0.0	1.7	2.7
LnGrp LOS				C	A	B	A	A	A	A	A	A
Approach Vol, veh/h					155			2477			732	
Approach Delay, s/veh					20.3			4.4			2.4	
Approach LOS					C			A			A	

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	35.4	35.4	7.5
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	34.0	34.0	18.0
Max Q Clear Time (g_c+I1), s	15.1	8.2	3.8
Green Ext Time (p_c), s	16.3	5.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	4.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	910	0	394	0	0	0	0	1566	1147	0	347	10
Future Volume (veh/h)	910	0	394	0	0	0	0	1566	1147	0	347	10
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1752	0	1752				0	1752	1752	0	1752	1752
Adj Flow Rate, veh/h	910	0	394				0	1566	1147	0	347	10
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	0	10				0	10	10	0	10	10
Cap, veh/h	1093	0	882				0	2193	1198	0	2191	63
Arrive On Green	0.34	0.00	0.34				0.00	0.46	0.46	0.00	0.46	0.46
Sat Flow, veh/h	3237	0	2613				0	4940	2613	0	4936	137
Grp Volume(v), veh/h	910	0	394				0	1566	1147	0	231	126
Grp Sat Flow(s),veh/h/ln	1618	0	1306				0	1594	1306	0	1594	1727
Q Serve(g_s), s	10.2	0.0	4.6				0.0	10.4	16.6	0.0	1.7	1.7
Cycle Q Clear(g_c), s	10.2	0.0	4.6				0.0	10.4	16.6	0.0	1.7	1.7
Prop In Lane	1.00		1.00				0.00		1.00	0.00		0.08
Lane Grp Cap(c), veh/h	1093	0	882				0	2193	1198	0	1462	792
V/C Ratio(X)	0.83	0.00	0.45				0.00	0.71	0.96	0.00	0.16	0.16
Avail Cap(c_a), veh/h	1154	0	932				0	2193	1198	0	1462	792
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.0	0.0	10.1				0.0	8.6	10.3	0.0	6.2	6.2
Incr Delay (d2), s/veh	5.1	0.0	0.4				0.0	1.1	16.8	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	1.0				0.0	2.6	5.9	0.0	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	0.0	10.5				0.0	9.7	27.1	0.0	6.3	6.3
LnGrp LOS	B	A	B				A	A	C	A	A	A
Approach Vol, veh/h		1304						2713			357	
Approach Delay, s/veh		15.1						17.0			6.3	
Approach LOS		B						B			A	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	22.0	17.3	22.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	14.0	18.0
Max Q Clear Time (g_c+I1), s	18.6	12.2	3.7
Green Ext Time (p_c), s	0.0	1.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	102	3	5	92
Future Vol, veh/h	4	4	102	3	5	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	100	100	10	100	100	10
Mvmt Flow	4	4	102	3	5	92

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	206	104	0	0	105	0
Stage 1	104	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	7.4	7.2	-	-	5.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	4.2	-	-	3.1	-
Pot Cap-1 Maneuver	606	739	-	-	1047	-
Stage 1	724	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	603	739	-	-	1047	-
Mov Cap-2 Maneuver	605	-	-	-	-	-
Stage 1	724	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1047	-
HCM Lane V/C Ratio	-	-	0.012	0.005	-
HCM Control Delay (s)	-	-	10.5	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	169	63	43	73	81
Future Vol, veh/h	16	169	63	43	73	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	10	3	3	10
Mvmt Flow	16	169	63	43	73	81

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	312	85	0	0	106	0
Stage 1	85	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	679	971	-	-	1479	-
Stage 1	936	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	644	971	-	-	1479	-
Mov Cap-2 Maneuver	666	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	766	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	934	1479	-
HCM Lane V/C Ratio	-	-	0.198	0.049	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2006	125	0	665	0	16
Future Vol, veh/h	2006	125	0	665	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	2006	125	0	665	0	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1066
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	186
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	186
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	186	-	-	-
HCM Lane V/C Ratio	0.086	-	-	-
HCM Control Delay (s)	26.2	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1943	70	81	519	1	129	0	81	3	0	17
Future Volume (veh/h)	8	1943	70	81	519	1	129	0	81	3	0	17
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1856	1752	1752	1856	1856	1856	1752	1752	1752
Adj Flow Rate, veh/h	8	1943	70	81	519	1	129	0	81	3	0	17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	3	10	10	3	3	3	10	10	10
Cap, veh/h	17	2350	85	104	1856	4	162	0	359	7	0	208
Arrive On Green	0.01	0.50	0.50	0.06	0.54	0.54	0.09	0.00	0.23	0.00	0.00	0.14
Sat Flow, veh/h	1668	4739	170	1767	3408	7	1767	0	1572	1668	0	1485
Grp Volume(v), veh/h	8	1306	707	81	253	267	129	0	81	3	0	17
Grp Sat Flow(s),veh/h/ln	1668	1594	1721	1767	1664	1751	1767	0	1572	1668	0	1485
Q Serve(g_s), s	0.4	26.3	26.4	3.4	6.1	6.1	5.4	0.0	3.1	0.1	0.0	0.7
Cycle Q Clear(g_c), s	0.4	26.3	26.4	3.4	6.1	6.1	5.4	0.0	3.1	0.1	0.0	0.7
Prop In Lane	1.00		0.10	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	17	1581	854	104	906	953	162	0	359	7	0	208
V/C Ratio(X)	0.47	0.83	0.83	0.78	0.28	0.28	0.80	0.00	0.23	0.45	0.00	0.08
Avail Cap(c_a), veh/h	111	1699	917	141	909	956	188	0	482	111	0	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	16.1	16.2	34.8	9.2	9.2	33.4	0.0	23.6	37.3	0.0	28.0
Incr Delay (d2), s/veh	18.6	3.3	6.0	17.4	0.2	0.2	18.3	0.0	0.3	39.9	0.0	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.4	9.8	1.9	1.8	1.9	3.1	0.0	1.2	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.6	19.5	22.2	52.3	9.4	9.3	51.7	0.0	23.9	77.2	0.0	28.2
LnGrp LOS	E	B	C	D	A	A	D	A	C	E	A	C
Approach Vol, veh/h		2021			601			210			20	
Approach Delay, s/veh		20.6			15.1			40.9			35.6	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.3	21.1	8.4	41.2	10.9	14.5	4.8	44.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	23.0	6.0	40.0	8.0	20.0	5.0	41.0
Max Q Clear Time (g_c+I1), s	2.1	5.1	5.4	28.4	7.4	2.7	2.4	8.1
Green Ext Time (p_c), s	0.0	0.3	0.0	8.9	0.0	0.0	0.0	2.9

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2003	23	0	601	0	31
Future Vol, veh/h	2003	23	0	601	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	10	3	10	10	3	3
Mvmt Flow	2003	23	0	601	0	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1013
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	202
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	202
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	202	-	-	-
HCM Lane V/C Ratio	0.153	-	-	-
HCM Control Delay (s)	26	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	51	0	1602	668	71
Future Vol, veh/h	0	51	0	1602	668	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	10	10	10	3
Mvmt Flow	0	51	0	1602	668	71

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	370	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.93	-	-	-	-
Pot Cap-1 Maneuver	0	533	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	533	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	533	-	-
HCM Lane V/C Ratio	-	0.096	-	-
HCM Control Delay (s)	-	12.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

A10. Cumulative Plus Project with Improvements Synchro Outputs

3: MACARTHUR DRIVE (N) & GRANT LINE RD

Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	356	80	52	301	67	80	520	84	256	400	250
Future Volume (veh/h)	300	356	80	52	301	67	80	520	84	256	400	250
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	300	356	80	52	301	67	80	520	84	256	400	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	339	998	445	87	505	213	112	755	337	292	1128	533
Arrive On Green	0.19	0.28	0.28	0.05	0.14	0.14	0.06	0.23	0.23	0.18	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	300	356	80	52	301	67	80	520	84	256	400	250
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	12.9	6.3	3.0	2.4	6.2	3.2	3.5	11.2	3.6	11.7	7.0	9.8
Cycle Q Clear(g_c), s	12.9	6.3	3.0	2.4	6.2	3.2	3.5	11.2	3.6	11.7	7.0	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	998	445	87	505	213	112	755	337	292	1128	533
V/C Ratio(X)	0.88	0.36	0.18	0.60	0.60	0.32	0.72	0.69	0.25	0.88	0.35	0.47
Avail Cap(c_a), veh/h	408	1898	846	192	1491	628	272	1386	618	342	1557	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	22.3	21.1	36.2	31.3	30.0	35.9	27.6	24.7	31.4	19.4	20.3
Incr Delay (d2), s/veh	16.0	0.4	0.3	2.5	1.9	1.4	3.2	1.9	0.7	17.7	0.3	1.1
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	2.5	1.1	1.0	2.7	1.2	1.5	4.3	1.3	5.8	2.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	22.7	21.5	38.7	33.2	31.4	39.0	29.6	25.4	49.0	19.7	21.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	B	C
Approach Vol, veh/h		736			420			684			906	
Approach Delay, s/veh		32.3			33.6			30.1			28.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	23.2	9.1	27.1	9.9	31.9	20.0	16.2
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	16.0	32.5	9.0	42.0	12.0	36.5	18.0	33.0
Max Q Clear Time (g_c+I1), s	13.7	13.2	4.4	8.3	5.5	11.8	14.9	8.2
Green Ext Time (p_c), s	0.1	4.5	0.0	3.6	0.0	5.3	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	30.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	820	100	490	960	85	210	613	630	33	208	460
Future Volume (veh/h)	408	820	100	490	960	85	210	613	630	33	208	460
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	408	820	100	490	960	85	210	613	0	33	208	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	494	1074	714	652	1236	587	265	836		40	327	
Arrive On Green	0.15	0.32	0.32	0.20	0.37	0.37	0.16	0.25	0.00	0.02	0.10	0.00
Sat Flow, veh/h	3237	3328	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	408	820	100	490	960	85	210	613	0	33	208	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	13.4	24.3	2.0	15.6	27.9	2.0	13.3	18.5	0.0	2.2	6.6	0.0
Cycle Q Clear(g_c), s	13.4	24.3	2.0	15.6	27.9	2.0	13.3	18.5	0.0	2.2	6.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	494	1074	714	652	1236	587	265	836		40	327	
V/C Ratio(X)	0.83	0.76	0.14	0.75	0.78	0.14	0.79	0.73		0.82	0.64	
Avail Cap(c_a), veh/h	591	1074	714	1211	1701	795	265	1246		91	911	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.0	33.4	5.2	41.2	30.4	7.9	44.4	37.7	0.0	53.2	47.5	0.0
Incr Delay (d2), s/veh	10.2	3.9	0.2	3.7	2.6	0.2	15.2	4.5	0.0	31.8	7.2	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	9.9	0.8	6.2	10.6	0.8	6.4	7.7	0.0	1.3	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	37.3	5.4	44.9	33.1	8.2	59.5	42.1	0.0	85.1	54.7	0.0
LnGrp LOS	E	D	A	D	C	A	E	D		F	D	
Approach Vol, veh/h		1328			1535			823	A		241	A
Approach Delay, s/veh		40.4			35.5			46.6			58.9	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.1	41.3	23.4	16.8	22.7	46.7	6.6	33.5
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	41.0	35.0	17.0	* 30	20.0	56.0	6.0	41.0
Max Q Clear Time (g_c+I1), s	17.6	26.3	15.3	8.6	15.4	29.9	4.2	20.5
Green Ext Time (p_c), s	4.5	4.8	0.1	2.2	1.3	10.7	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1500	120	56	294	194	110	610	99	172	580	170
Future Volume (veh/h)	320	1500	120	56	294	194	110	610	99	172	580	170
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1752	1856	1752	1856	1752	1752	1752	1752	1856
Adj Flow Rate, veh/h	320	1500	120	56	294	194	110	610	99	172	580	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	3	3	3	10	3	10	3	10	10	10	10	3
Cap, veh/h	346	1543	688	74	1009	425	136	757	338	179	859	406
Arrive On Green	0.20	0.44	0.44	0.04	0.29	0.29	0.08	0.23	0.23	0.11	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1668	3526	1485	1767	3328	1485	1668	3328	1572
Grp Volume(v), veh/h	320	1500	120	56	294	194	110	610	99	172	580	170
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1668	1763	1485	1767	1664	1485	1668	1664	1572
Q Serve(g_s), s	19.9	46.6	5.2	3.7	7.3	12.0	6.9	19.4	6.2	11.5	17.5	10.1
Cycle Q Clear(g_c), s	19.9	46.6	5.2	3.7	7.3	12.0	6.9	19.4	6.2	11.5	17.5	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	346	1543	688	74	1009	425	136	757	338	179	859	406
V/C Ratio(X)	0.93	0.97	0.17	0.76	0.29	0.46	0.81	0.81	0.29	0.96	0.68	0.42
Avail Cap(c_a), veh/h	348	1545	689	90	1040	438	174	967	431	179	997	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	30.8	19.1	52.9	31.1	32.8	50.8	40.9	35.8	49.7	37.3	34.5
Incr Delay (d2), s/veh	29.3	16.7	0.2	20.2	0.3	1.3	15.7	5.0	0.8	55.3	2.0	1.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	22.0	1.9	2.0	3.1	4.5	3.6	8.2	2.3	7.4	7.2	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.5	47.5	19.3	73.0	31.4	34.1	66.5	45.9	36.6	105.0	39.3	35.7
LnGrp LOS	E	D	B	E	C	C	E	D	D	F	D	D
Approach Vol, veh/h		1940			544			819			922	
Approach Delay, s/veh		50.1			36.6			47.5			50.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	30.9	9.9	54.0	13.6	34.4	26.9	37.0
Change Period (Y+Rc), s	5.0	5.5	5.0	5.0	5.0	5.5	5.0	5.0
Max Green Setting (Gmax), s	12.0	32.5	6.0	49.0	11.0	33.5	22.0	33.0
Max Q Clear Time (g_c+I1), s	13.5	21.4	5.7	48.6	8.9	19.5	21.9	14.0
Green Ext Time (p_c), s	0.0	4.0	0.0	0.4	0.0	4.9	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	48.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2072	103	49	612	4	184	0	49	13	0	52
Future Volume (veh/h)	21	2072	103	49	612	4	184	0	49	13	0	52
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	21	2072	103	49	612	4	184	0	49	13	0	52
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	67	2040	101	62	2131	14	174	0	251	24	0	117
Arrive On Green	0.04	0.63	0.63	0.04	0.63	0.63	0.10	0.00	0.17	0.01	0.00	0.08
Sat Flow, veh/h	1668	3228	159	1668	3390	22	1668	0	1485	1668	0	1485
Grp Volume(v), veh/h	21	1060	1115	49	300	316	184	0	49	13	0	52
Grp Sat Flow(s),veh/h/ln	1668	1664	1723	1668	1664	1748	1668	0	1485	1668	0	1485
Q Serve(g_s), s	1.5	78.6	78.6	3.6	10.2	10.2	13.0	0.0	3.5	1.0	0.0	4.2
Cycle Q Clear(g_c), s	1.5	78.6	78.6	3.6	10.2	10.2	13.0	0.0	3.5	1.0	0.0	4.2
Prop In Lane	1.00		0.09	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	1052	1089	62	1046	1099	174	0	251	24	0	117
V/C Ratio(X)	0.31	1.01	1.02	0.80	0.29	0.29	1.06	0.00	0.20	0.54	0.00	0.44
Avail Cap(c_a), veh/h	80	1052	1089	67	1046	1099	174	0	454	67	0	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.0	22.9	22.9	59.4	10.5	10.5	55.7	0.0	44.4	60.9	0.0	54.7
Incr Delay (d2), s/veh	1.0	29.6	33.6	40.1	0.1	0.1	83.6	0.0	0.1	6.7	0.0	1.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	34.8	37.3	2.2	3.4	3.6	9.5	0.0	1.3	0.5	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	52.5	56.5	99.5	10.5	10.5	139.3	0.0	44.6	67.5	0.0	55.7
LnGrp LOS	E	F	F	F	B	B	F	A	D	E	A	E
Approach Vol, veh/h		2196			665			233			65	
Approach Delay, s/veh		54.6			17.1			119.4			58.0	
Approach LOS		D			B			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	84.4	5.8	25.6	9.0	84.0	17.0	14.4
Change Period (Y+Rc), s	4.0	5.8	4.0	4.6	4.0	5.8	4.0	4.6
Max Green Setting (Gmax), s	5.0	78.6	5.0	38.0	6.0	77.6	13.0	30.0
Max Q Clear Time (g_c+I1), s	5.6	80.6	3.0	5.5	3.5	12.2	15.0	6.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	2.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	51.6
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	756	1030	248	187	297	25	204	1281	117	25	304	100
Future Volume (veh/h)	756	1030	248	187	297	25	204	1281	117	25	304	100
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	756	1030	248	187	297	25	204	1281	117	25	304	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	790	1282	398	272	359	160	232	1327	592	79	1022	456
Arrive On Green	0.24	0.27	0.27	0.08	0.11	0.11	0.14	0.40	0.40	0.05	0.31	0.31
Sat Flow, veh/h	3237	4782	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	756	1030	248	187	297	25	204	1281	117	25	304	100
Grp Sat Flow(s),veh/h/ln	1618	1594	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	27.4	23.9	17.4	6.7	10.4	1.8	14.2	44.7	6.1	1.7	8.3	5.9
Cycle Q Clear(g_c), s	27.4	23.9	17.4	6.7	10.4	1.8	14.2	44.7	6.1	1.7	8.3	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	790	1282	398	272	359	160	232	1327	592	79	1022	456
V/C Ratio(X)	0.96	0.80	0.62	0.69	0.83	0.16	0.88	0.97	0.20	0.32	0.30	0.22
Avail Cap(c_a), veh/h	790	1530	475	272	532	237	365	1345	600	140	1022	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	40.6	38.2	52.9	51.9	48.1	50.2	34.9	23.3	54.7	31.4	30.6
Incr Delay (d2), s/veh	21.9	2.2	0.9	7.1	4.2	0.2	9.1	16.7	0.1	2.3	0.2	0.2
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	9.3	6.3	2.9	4.4	0.7	6.4	20.3	2.1	0.8	3.3	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	42.8	39.1	60.0	56.1	48.2	59.3	51.6	23.4	57.0	31.6	30.8
LnGrp LOS	E	D	D	E	E	D	E	D	C	E	C	C
Approach Vol, veh/h		2034			509			1602			429	
Approach Delay, s/veh		51.0			57.2			50.5			32.9	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	37.8	22.5	42.5	35.0	18.8	11.6	53.4
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	38.0	26.0	* 34	29.0	19.0	10.0	48.0
Max Q Clear Time (g_c+I1), s	8.7	25.9	16.2	10.3	29.4	12.4	3.7	46.7
Green Ext Time (p_c), s	0.1	3.1	0.3	2.1	0.0	0.4	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	502	870	90	290	510	46	90	1119	510	23	529	837
Future Volume (veh/h)	502	870	90	290	510	46	90	1119	510	23	529	837
Initial Q (Qb), veh	0	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		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	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	502	870	90	290	510	46	90	1119	0	23	529	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	669	955	590	388	666	326	184	1117		32	742	
Arrive On Green	0.21	0.29	0.29	0.12	0.20	0.20	0.11	0.34	0.00	0.02	0.22	0.00
Sat Flow, veh/h	3237	3328	1485	3237	3328	1485	1668	3328	1485	1668	3328	1485
Grp Volume(v), veh/h	502	870	90	290	510	46	90	1119	0	23	529	0
Grp Sat Flow(s),veh/h/ln	1618	1664	1485	1618	1664	1485	1668	1664	1485	1668	1664	1485
Q Serve(g_s), s	13.5	23.3	1.1	8.0	13.4	1.2	4.7	31.0	0.0	1.3	13.6	0.0
Cycle Q Clear(g_c), s	13.5	23.3	1.1	8.0	13.4	1.2	4.7	31.0	0.0	1.3	13.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	669	955	590	388	666	326	184	1117		32	742	
V/C Ratio(X)	0.75	0.91	0.15	0.75	0.77	0.14	0.49	1.00		0.71	0.71	
Avail Cap(c_a), veh/h	669	973	598	561	901	431	184	1117		72	1081	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.4	31.8	5.8	39.3	34.9	11.2	38.6	30.7	0.0	45.0	33.1	0.0
Incr Delay (d2), s/veh	5.7	13.0	0.3	6.2	4.5	0.4	2.0	27.3	0.0	25.2	4.6	0.0
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	10.4	0.5	3.3	5.4	0.5	1.9	15.6	0.0	0.7	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	44.8	6.0	45.5	39.4	11.6	40.6	58.0	0.0	70.3	37.7	0.0
LnGrp LOS	D	D	A	D	D	B	D	F		E	D	
Approach Vol, veh/h		1462			846			1209	A		552	A
Approach Delay, s/veh		40.8			40.0			56.7			39.1	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	32.5	16.2	26.6	25.1	24.5	5.8	37.0
Change Period (Y+Rc), s	6.0	6.0	6.0	* 6	6.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	16.0	27.0	5.0	* 30	18.0	25.0	4.0	31.0
Max Q Clear Time (g_c+I1), s	10.0	25.3	6.7	15.6	15.5	15.4	3.3	33.0
Green Ext Time (p_c), s	1.1	1.2	0.0	5.0	1.0	3.1	0.0	0.0

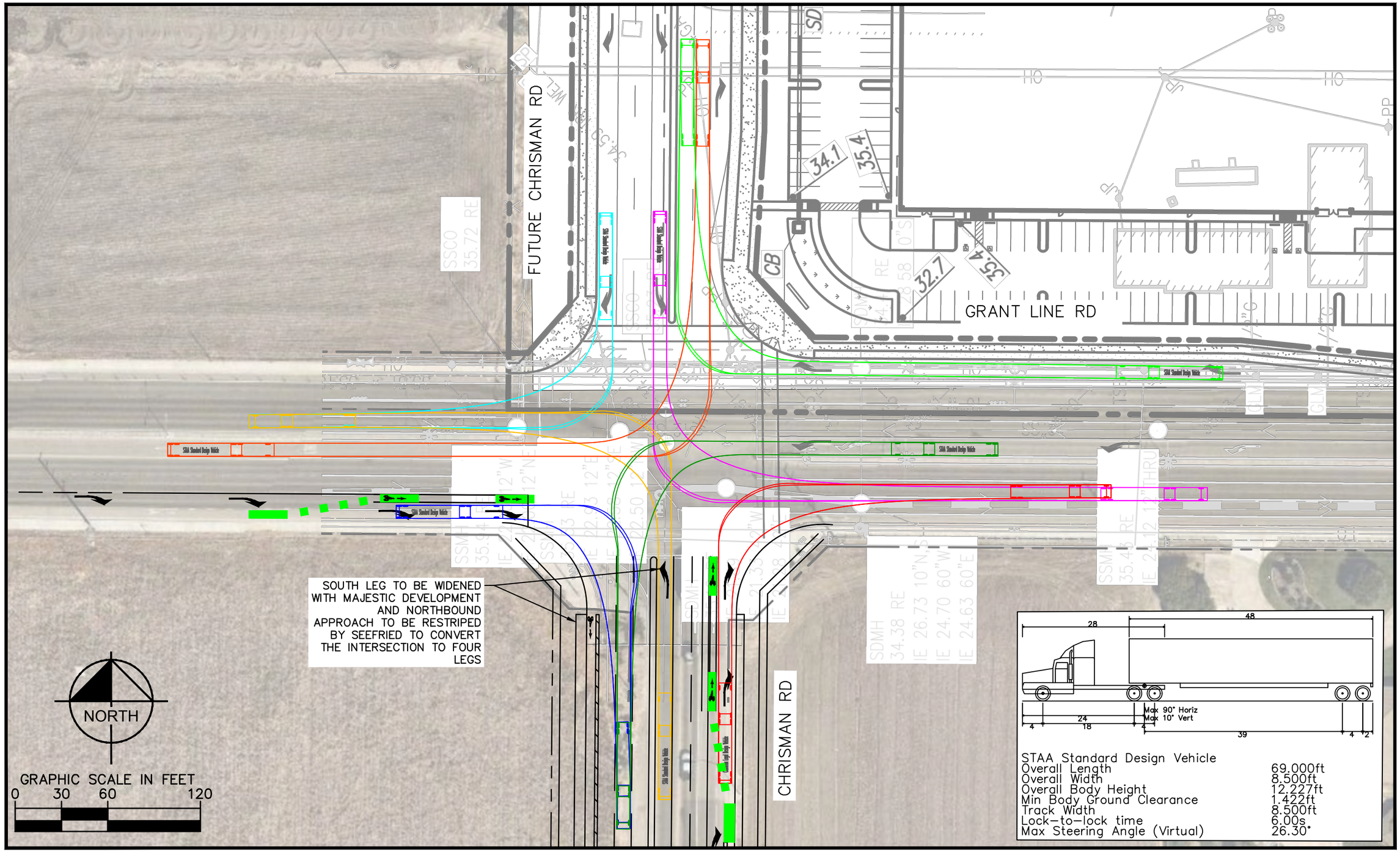
Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

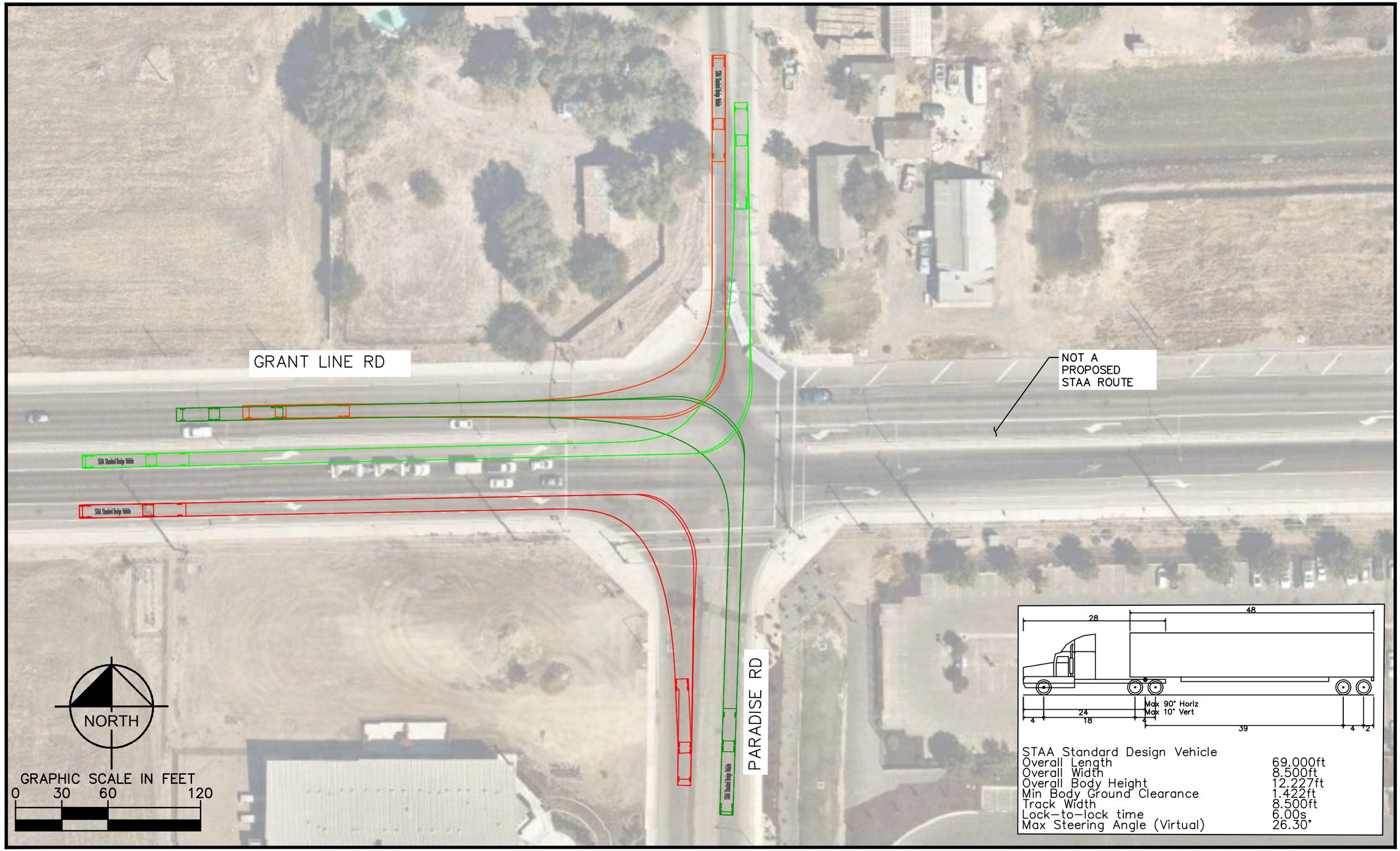
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

B1. NEI Truck Route Study Turning Templates



Kimley»Horn

Figure 26 - Interim & Ultimate Truck Routes
(Grant Line Rd & Chrisman Rd)

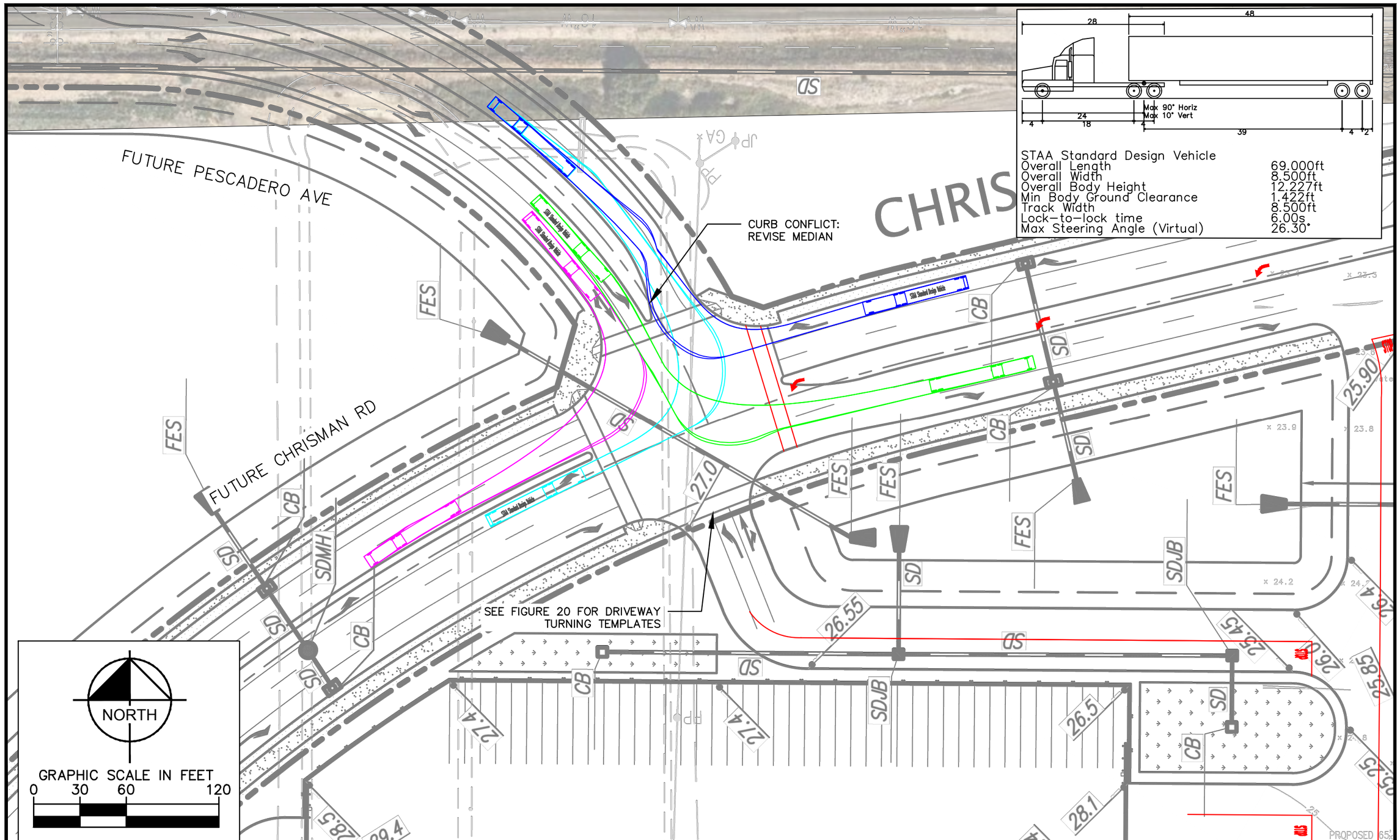


Kimley»Horn

Figure 27 - Interim & Ultimate Truck Routes
(Grant Line Rd & Paradise Rd)

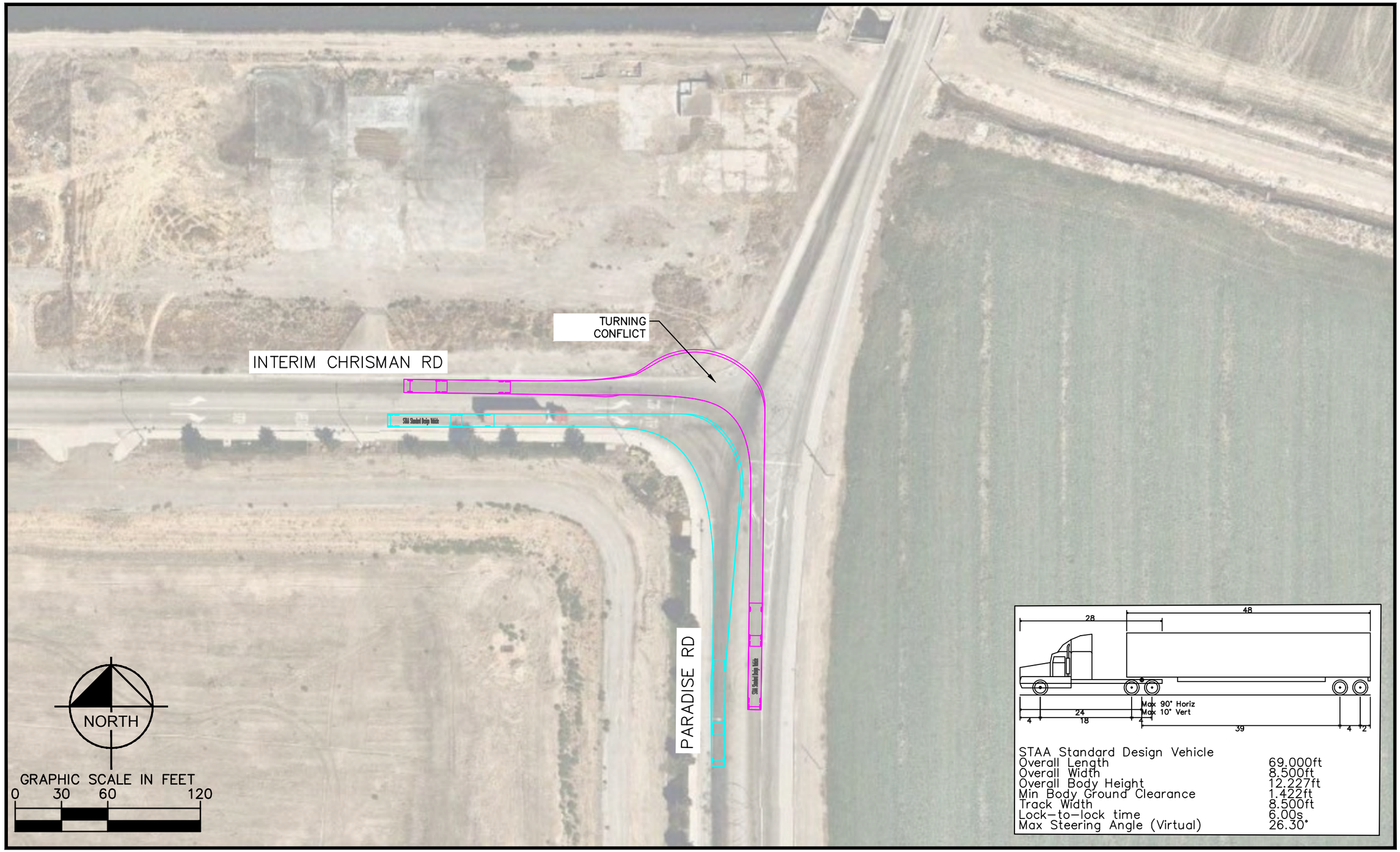
November 2019

Seefried Properties



Kimley»Horn

Figure 28 - Interim & Ultimate Truck Routes
(Future Chrisman & Future Pescadero)

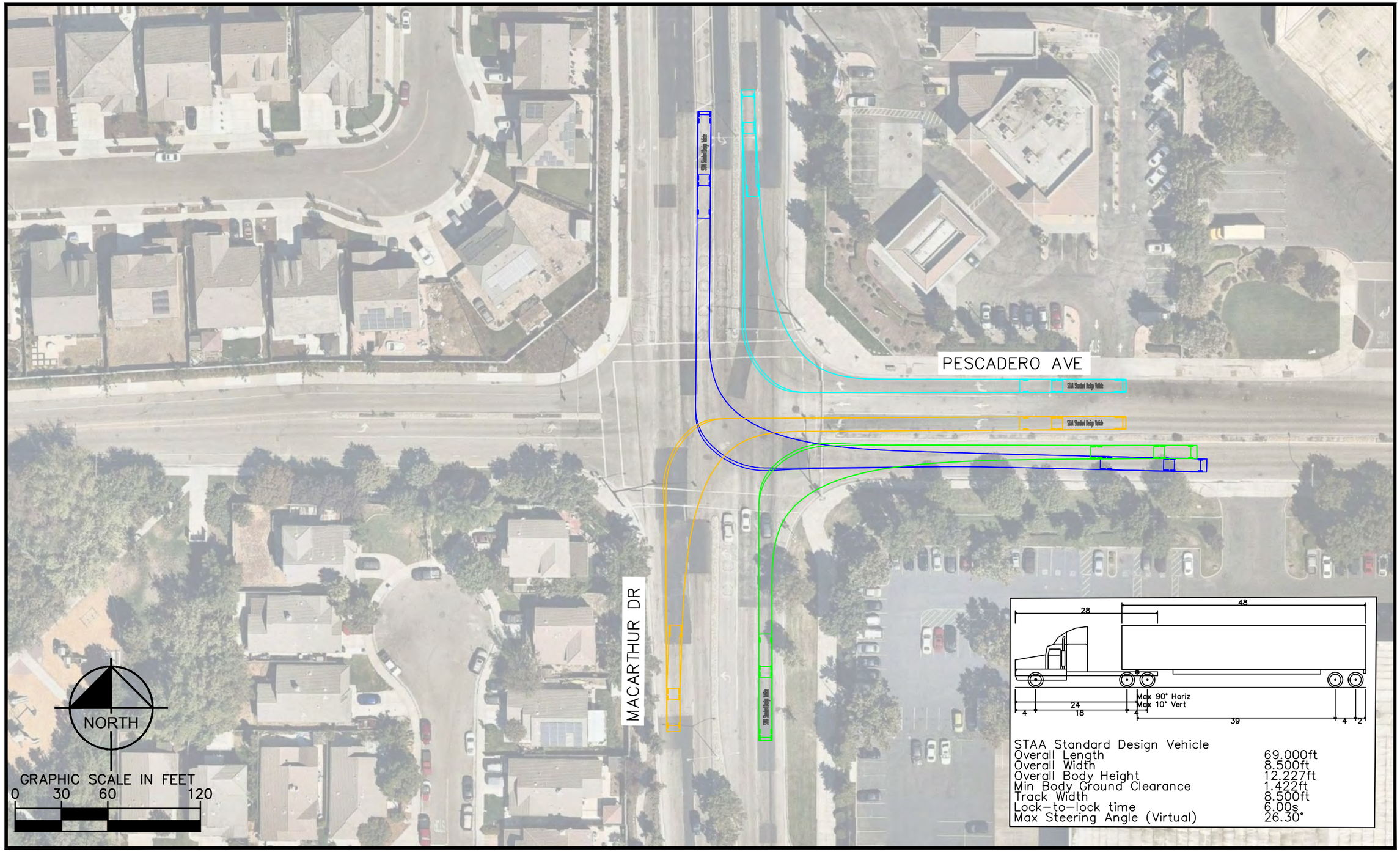


Kimley»Horn

Figure 29 - Interim Truck Routes
(Chrisman Road & Paradise Road)

November 2019

Seefried Properties

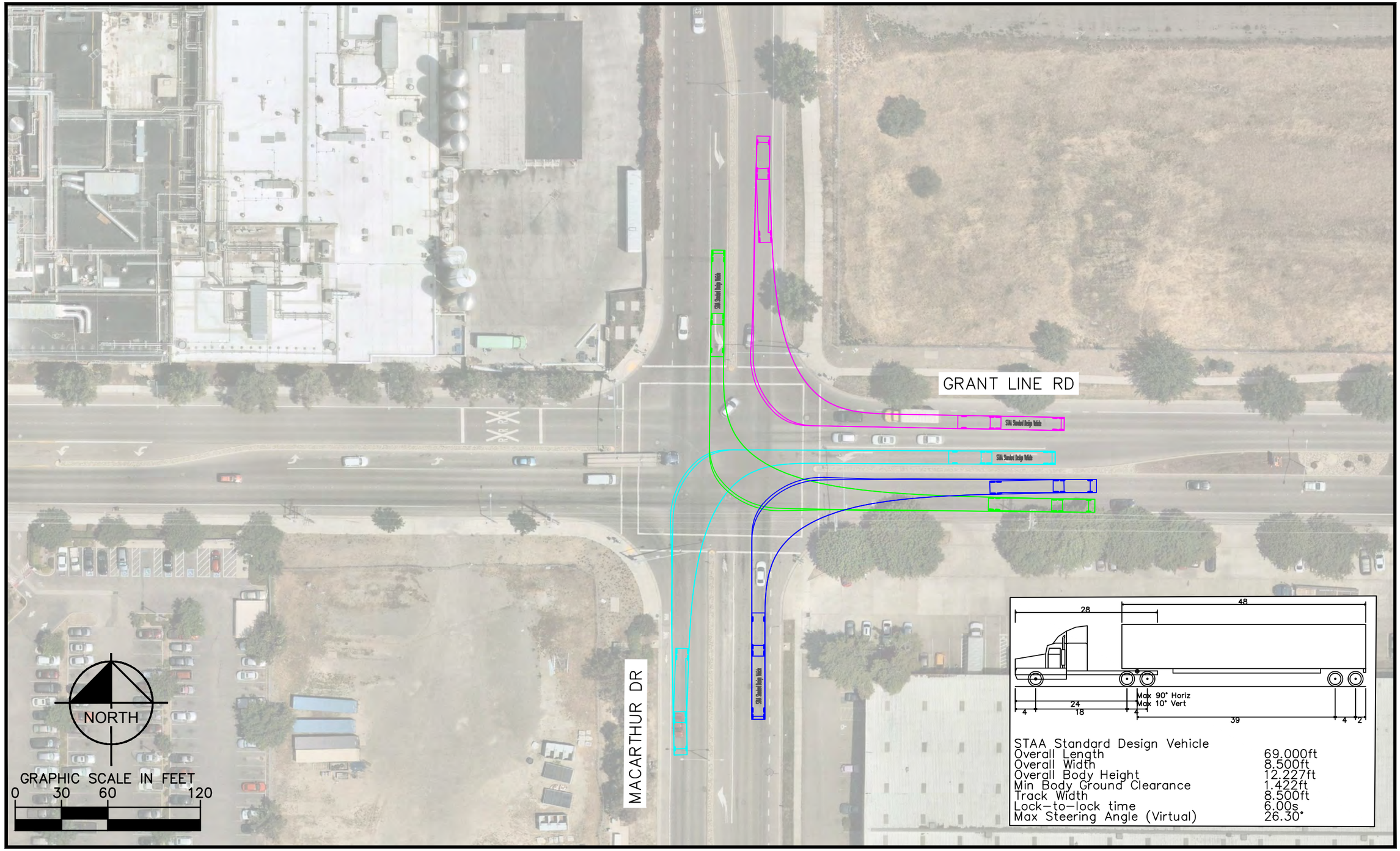


Kimley»Horn

Figure 30 - Interim & Ultimate Truck Routes
(Macarthur Dr & Pescadero Ave)

November 2019

Seefried Properties



Kimley»Horn

Figure 31 - Interim & Ultimate Truck Routes
(Macarthur Dr & Grant Line Rd)

November 2019

Seefried Properties

ATTACHMENT B

(Corner of Grant Line and Skylark looking Southeast)

PROJECT BIG BIRD

TRACY, CA

PERSPECTIVE - 1

(Grant Line Road looking south at driveway)

PROJECT BIG BIRD

TRACY, CA

PERSPECTIVE - 2

(Chrisman Road looking west)

PROJECT BIG BIRD

TRACY, CA

PR

Ahead

PERSPECTIVE - 3

ATTACHMENT C

WEST YOST ASSOCIATES

TECHNICAL MEMORANDUM

DATE: August 12, 2020

Project No: 404-60-20-61
SENT VIA: EMAIL

TO: Al Gali, City of Tracy

CC: Robert Armijo, City of Tracy
Paul Verma, City of Tracy

FROM: Nathaniel Homan, PE, RCE #89903
Roger Chu, PE, RCE #87591

REVIEWED BY: Elizabeth Drayer, PE, RCE #46872

SUBJECT: Hydraulic Evaluation of Project Big Bird

REGISTERED PROFESSIONAL ENGINEER
ROGER W. CHU
No. C87591
Exp. 9-30-21
CIVIL
STATE OF CALIFORNIA

This Technical Memorandum (TM) summarizes the findings and conclusions of West Yost technical evaluation of the ability of the City of Tracy's (City) existing potable water distribution system to meet the required minimum pressures and flows for the proposed Project Big Bird (Project).

This TM is submitted in accordance with West Yost's May 2020 Scope of Work for engineering services to the City. The scope of this evaluation does not include review of water supply availability or water treatment plant capacity for the Project, as these items are discussed in other documents, such as the City's Water System Master Plan. This evaluation does not determine the adequacy of any private pipelines to serve the Project.

The following sections summarize our findings and conclusions:

- Project Description
- Estimated Water Demand for the Project
- Storage Capacity Evaluation
- Hydraulic Evaluation Findings
- Summary of Evaluation and Recommendations

PROJECT DESCRIPTION

As shown on Figure 1, the Project is located within City limits, southwest of the intersection of Grant Line Road and Chrisman Road. The Project is part of the Northeast Industrial (NEI) Specific Plan area, which consists of approximately 870 acres in the northeast corner of the City and is bounded by East Pescadero Avenue and I-205 to the north, Paradise Avenue and Banta Road to the east, the Union Pacific Railroad to the south, and MacArthur Drive to the west. The area is designated for light industrial use, and development is well underway.

The Project will develop approximately 86 acres of undeveloped land into a warehouse with an office and adjacent parking lot. Potable water service for the Project will be provided by the existing Pressure Zone 1 (Zone 1) pipeline located in Paradise Road.

ESTIMATED WATER DEMAND FOR THE PROJECT

Water demands were projected for the Project using the unit water demand factors adopted in the 2012 Citywide Water System Master Plan (2012 WSMP). Table 1 shows the Project's proposed land use, water use factors, and projected annual potable water use. The total potable water demand for the Project (domestic and irrigation) is estimated at 174 acre-feet per year (af/yr).

This evaluation assumes potable water will be used to meet all Project water demands. The City has yet to construct infrastructure to deliver recycled water to the Project, so potable water will be used to meet non-potable water demands in the interim. Once the City's recycled water system can supply the Project, potable water demands should decrease.

Table 1. Estimated Annual Water Demand for the Project

Land Use Designation	Total Area, gross acres[a]	Potable Water Use Area, acres[b]	Landscaped Area, acres[c]	Unit Potable Water Use Factor[d], af/ac/yr	Annual Potable Water Use, af/yr
Industrial	86.0	73.1	-	1.5	109.7
Irrigation Demand	-	-	12.9	4.0	51.6
UAFW[e]	-	-	-	-	13.1
Total	**86.0**	**73.1**	**12.9**	**-**	**174.3**

(a) Per Prologis Tracy-NEI PHASE 3 G4+5 drawings, dated May 2020.
(b) Consistent with the 2012 WSMP; 85 percent of gross acres are assumed to use potable water.
(c) Consistent with the 2012 WSMP; 15 percent of gross acres are assumed to be landscaped.
(d) Based on the 2012 WSMP.
(e) Unaccounted-for water (UAFW) is equal to 7.5 percent.

Table 2 summarizes the estimated average day, maximum day, and peak hour water demands for the Project. The average day demand (ADD) for the Project is approximately 108 gallons per minute (gpm). Maximum day demands (MDD) and peak hour demands (PHD) were calculated using the City's peaking factors (adopted from the 2012 WSMP) of 2.0 and 3.4 times the ADD, respectively, resulting in an MDD of about 216 gpm and a PHD of about 368 gpm.

Demands for development of the Project area were previously included as part of West Yost's "Hydraulic Evaluation of Northeast Industrial Area (NEI) Specific Plan" TM (NEI TM), dated September 11, 2018. To more accurately simulate demands within the system, the previously projected demands for the Project area were removed from the hydraulic model before adding the updated demands listed in Table 2.

Table 2. Summary of Average Day, Maximum Day, and Peak Hour Water Demands for the Project

Average Day Demand[(a)]		Maximum Day Demand[(b)]		Peak Hour Demand[(c)]	
gpm	mgd	gpm	mgd	gpm	mgd
108	0.16	216	0.31	368	0.53

(a) The ADD is based on the total annual potable water use, 174 af/yr, calculated in Table 1.
(b) MDD is 2.0 times the ADD, per the 2012 WSMP.
(c) PHD is 3.4 times the ADD, per the 2012 WSMP.
mgd = million gallons per day

STORAGE CAPACITY EVALUATION

The storage requirement for the City's potable water system consists of three components:

- **Operational Storage**: 30 percent of a maximum day demand
- **Emergency Storage**: Two times an average day demand
- **Fire Flow Storage**: The required fire flow rate multiplied by the associated fire flow duration period. In larger pressure zones like Zone 1, the City requires the fire flow storage to equal the volume required for two concurrent fire flow events: a Single Family Residential fire (0.18 million gallons (MG)) and an Industrial fire in a sprinklered building (0.96 MG)[1]. Thus, the total Zone 1 fire flow storage required is 1.14 MG.

The Project's required storage capacity would be in addition to the requirements from existing buildings and proposed developments in Zone 1 and Pressure Zone 2 (Zone 2). Per the above criteria, the required operational and emergency storage components for the project are 0.09 and 0.31 MG, respectively.

Based on the City's available storage capacity and emergency storage credit[2] in Zones 1 and 2, there is insufficient storage capacity to adequately serve the Project. After replacing the Project area's projected demands from the NEI TM with the updated Project demands from Table 2, the calculated storage deficit is approximately 0.02 MG[3]. However, the City is currently updating the

[1] Per the 2012 WSMP, Single Family Residential fire flow is 1,500 gpm for 2 hours. In sprinklered Industrial buildings, the fire flow is 4,500 gpm for 4 hours. This includes 500 gpm for on-site sprinkler flow. Fire flow storage does not include sprinkler flow, so fire flow storage for sprinklered industrial buildings is based on 4,000 gpm for 4 hours. Refer to Table 6-1 of the 2012 WSMP for additional details.

[2] Refer to Section *7.4.2.2 Water Storage Capacity* of the 2012 WSMP for additional details.

[3] Assumes that the storage capacity deficit in City-side Zone 3 is supplied by the emergency storage surplus available in Zones 1 and 2 (*Hydraulic Evaluation of IPC Buildings 9, 10, and 14 Memorandum*, West Yost, May 3, 2018).

2012 WSMP, which includes a re-evaluation of the City's storage requirements and future storage needs. The WSMP Update may reduce the storage requirements and therefore increase the available storage capacity in Zone 1. Therefore, it is not recommended that the City construct additional storage in Zone 1 until the updated WSMP is finalized and the need for additional storage in Zone 1 has been re-evaluated.

HYDRAULIC EVALUATION FINDINGS

Hydraulic evaluation of the Project is based on system performance and operational criteria developed in the 2012 WSMP. These criteria are provided in Attachment A for reference. The City's existing developer hydraulic model[4] was modified to include the water demands for the Project. This updated model was then used to simulate PHD and MDD plus fire flow conditions to determine the Project's impacts on the potable water system. Results from this hydraulic evaluation are discussed below.

Peak Hour Demand Evaluation

Figure 2 displays the system pressures and pipeline velocities during a PHD condition. Pressure at the Project's service connection point is approximately 62 pounds per square inch (psi), while pressures at other service locations in Zone 1 remain above 40 psi. No distribution pipelines exceed the maximum pipeline velocity limit of 8 feet per second (fps).

Maximum Day Demand plus Fire Flow Evaluation

To meet fire flow requirements, the water system must be able to provide 4,500 gpm to the Project and adjacent industrial sites during an MDD condition while maintaining 30 psi residual system pressure (primary criterion) and pipeline velocities below 12 fps (secondary criterion). Figure 3 shows the Project does not meet fire flow requirements, as available fire flow is only 3,900 gpm. This deficit is due to the 320-foot-long, 8-inch diameter pipeline west of the intersection of Paradise Road and Chrisman Road, where flows are restricted by the 12-fps velocity limit.

If the secondary pipeline velocity criterion is disregarded, the distribution system can meet fire flow requirements for the Project. Because the primary pressure criterion is met and the 8-inch diameter pipeline in question is relatively short, improvements are not critical. However, the Project should consider upsizing this segment to a 12-inch diameter pipeline to avoid high velocities during fire flow conditions. Figure 4 shows that with this improvement, the distribution system could fully satisfy fire flow requirements for the Project.

Two other locations in the NEI Specific Plan Area also fail to meet fire flow requirements. These locations on the dead-end pipeline in Grant Line Road were previously identified as deficient in the NEI TM. Because these deficiencies are not triggered by the Project, the corresponding improvements to address these deficiencies are outside the scope of this hydraulic evaluation.

[4] The City's developer hydraulic model includes all the previously evaluated development projects that have been proposed and is separate from the 2012 Water System Master Plan model.

SUMMARY OF EVALUATION AND RECOMMENDATIONS

Under PHD conditions, the City's water system infrastructure can provide adequate flows and pressures to the Project and adjacent sites in the NEI Specific Plan area. Under MDD plus fire flow conditions, the distribution system can deliver fire flows to the Project while maintaining 30 psi residual pressure, but a nearby 8-inch diameter pipeline would see velocities exceeding 12 fps. This pipeline velocity deficiency is relatively minor, so upsizing this pipeline west of the intersection of Paradise Road and Chrisman Road to 12-inch diameter is not critical but recommended as part of the Project.

Based on the storage capacity criteria in the 2012 WSMP, the City currently has insufficient storage capacity in Zones 1 and 2 to meet the needs of the proposed Project. However, the City is currently updating the 2012 WSMP, and an updated storage capacity evaluation will be developed, along with revised potable water system improvement recommendations. Therefore, it is not recommended that the City construct additional storage in Zone 1 until the updated WSMP is finalized and the need for additional storage in Zone 1 has been re-evaluated.

In addition, it is anticipated that potable water demands will decrease once the City's recycled water system is operational. Converting the City's irrigation demands from potable to recycled water will also increase the storage capacity available to meet potable water demands.

The hydraulic evaluation performed for the proposed Project is based on the various assumptions stated above. If any of these items are modified in any way, other than as described in this TM, additional hydraulic evaluation will be required.

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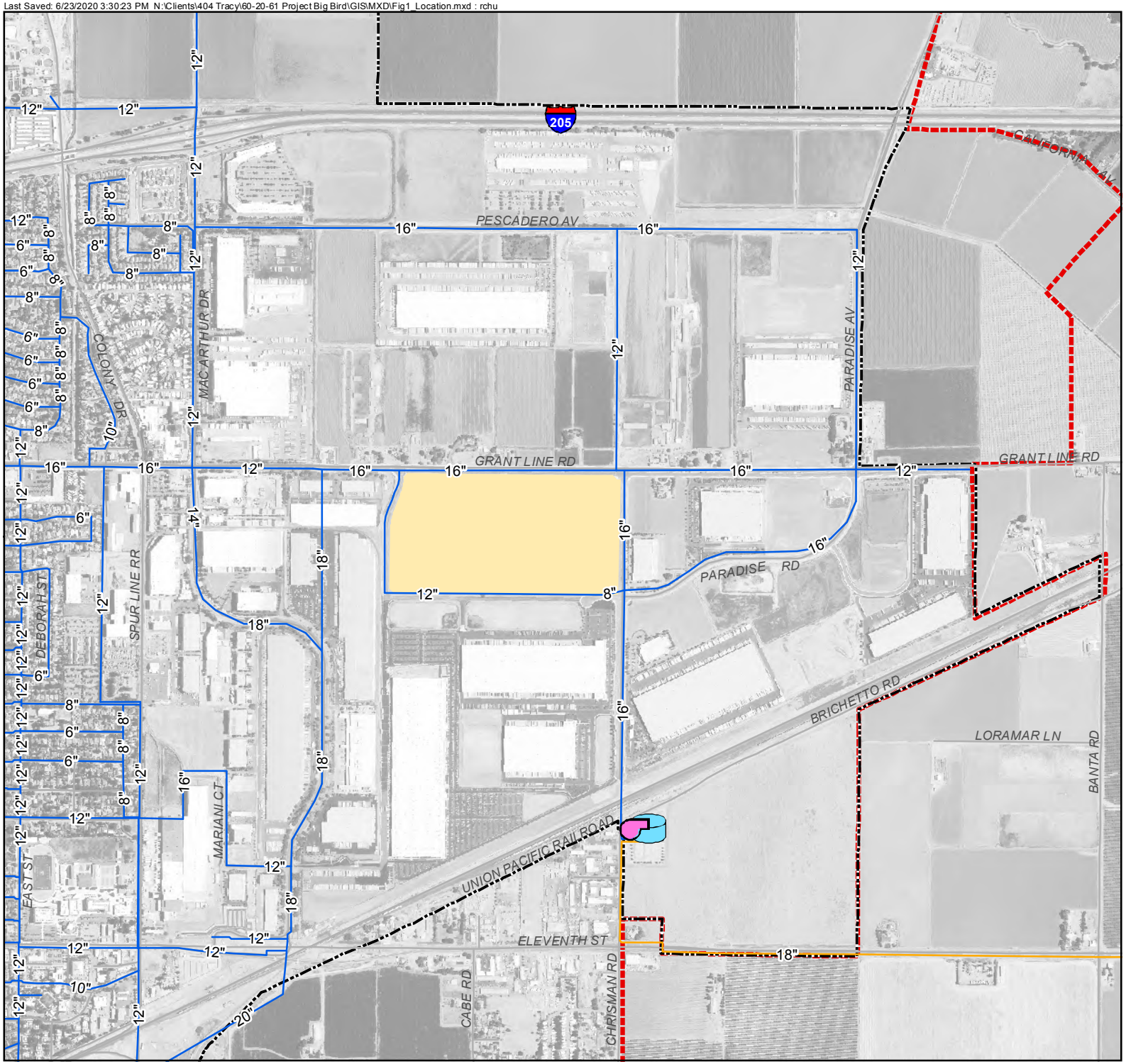

N

0 750 1,500

Scale in Feet

NEI Booster Pump Station

NEI Reservoir

Pipeline Zone

Zone 1

SSJID

Project Big Bird

City Limit

Sphere of Influence

TRACY

WEST YOST ASSOCIATES

Figure 1

Existing Potable Water System

City of Tracy
Project Big Bird
Hydraulic Evaluation

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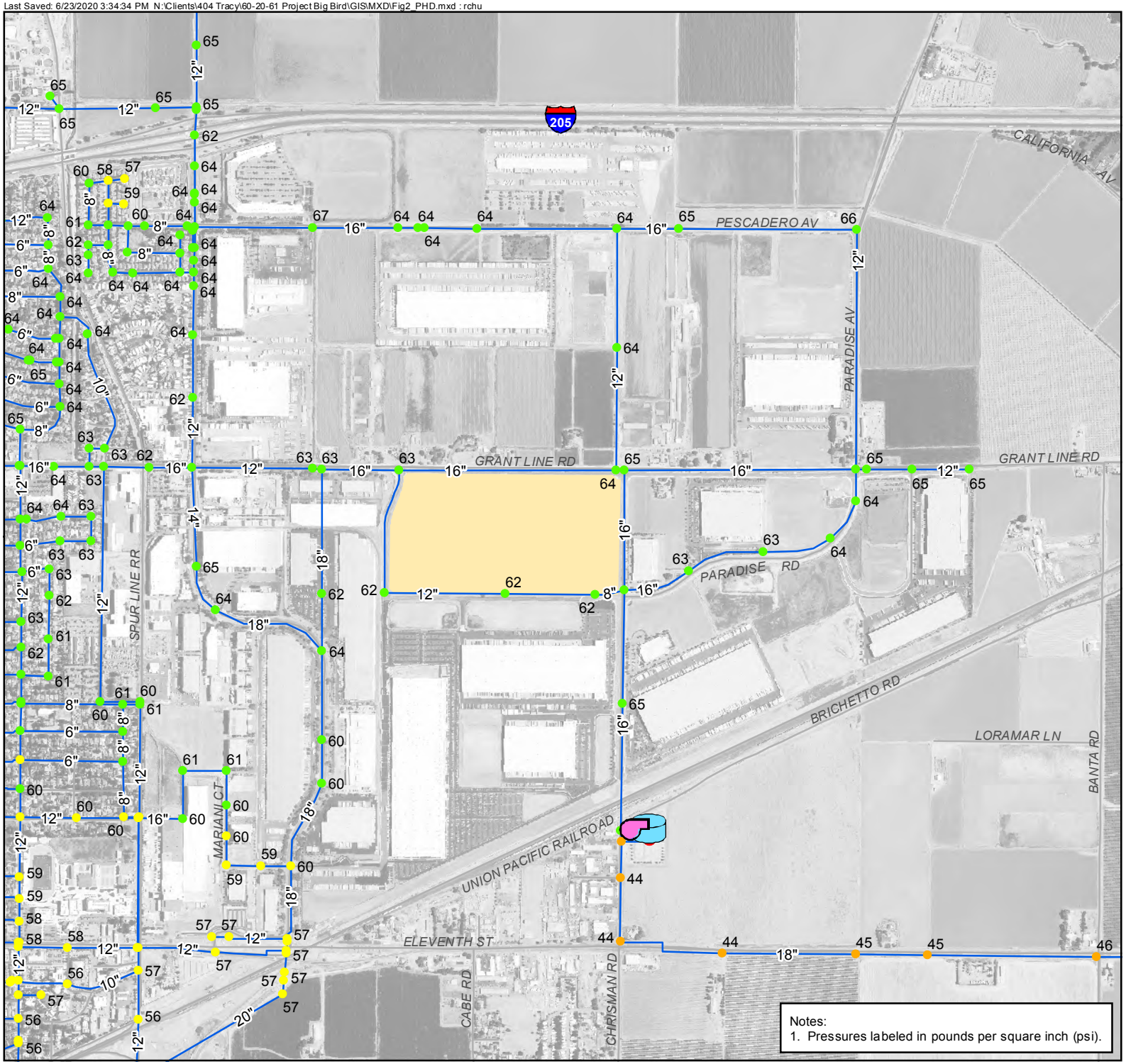

N

0 750 1,500

Scale in Feet

NEI Booster Pump Station

NEI Reservoir

Peak Hour Pressure

- Less than 40 psi
- 40 to 50 psi
- 50 to 60 psi
- 60 to 70 psi
- 70 to 80 psi
- Greater than 80 psi

Pipeline Velocity

- Less than or equal to 8 fps
- Greater than 8 fps
- Project Big Bird

TRACY

WEST YOST ASSOCIATES

Figure 2

Peak Hour Results

City of Tracy
Project Big Bird
Hydraulic Evaluation

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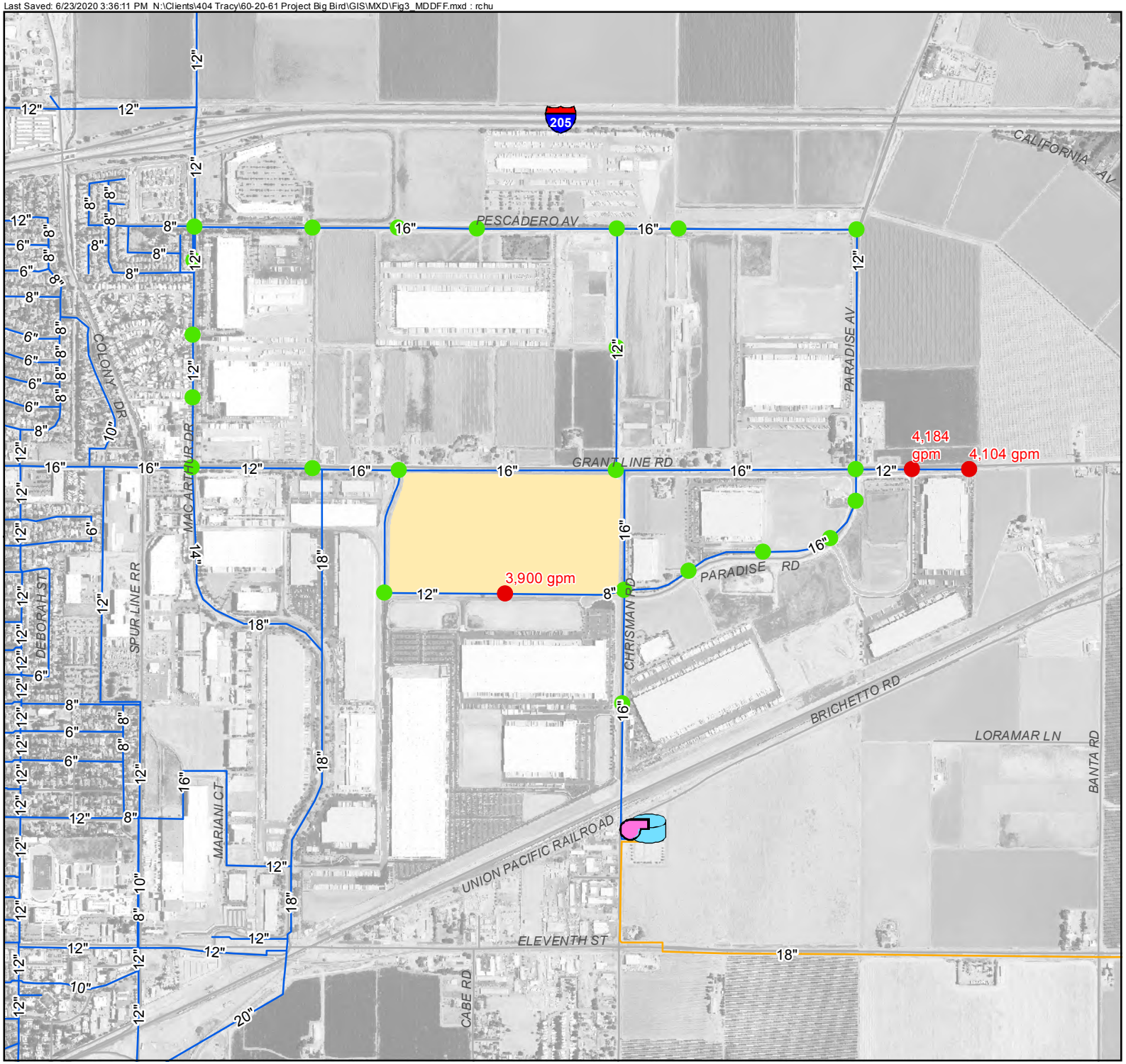

N

0 750 1,500

Scale in Feet

NEI Booster Pump Station

NEI Reservoir

Available Fire Flow

Does not meet Requirements

Meets Requirements

Pipeline Zone

Zone 1

SSJID

Project Big Bird

Notes:

1. The available fire flow shown is the maximum flow available while maintaining 30 psi residual system pressure and limiting maximum pipeline velocities to 12 fps.
2. Fire flow requirements vary by land use type. Project Big Bird and adjacent locations require 4,500 gpm.

TRACY

WEST YOST ASSOCIATES

Figure 3

Fire Flow Results

City of Tracy
Project Big Bird
Hydraulic Evaluation

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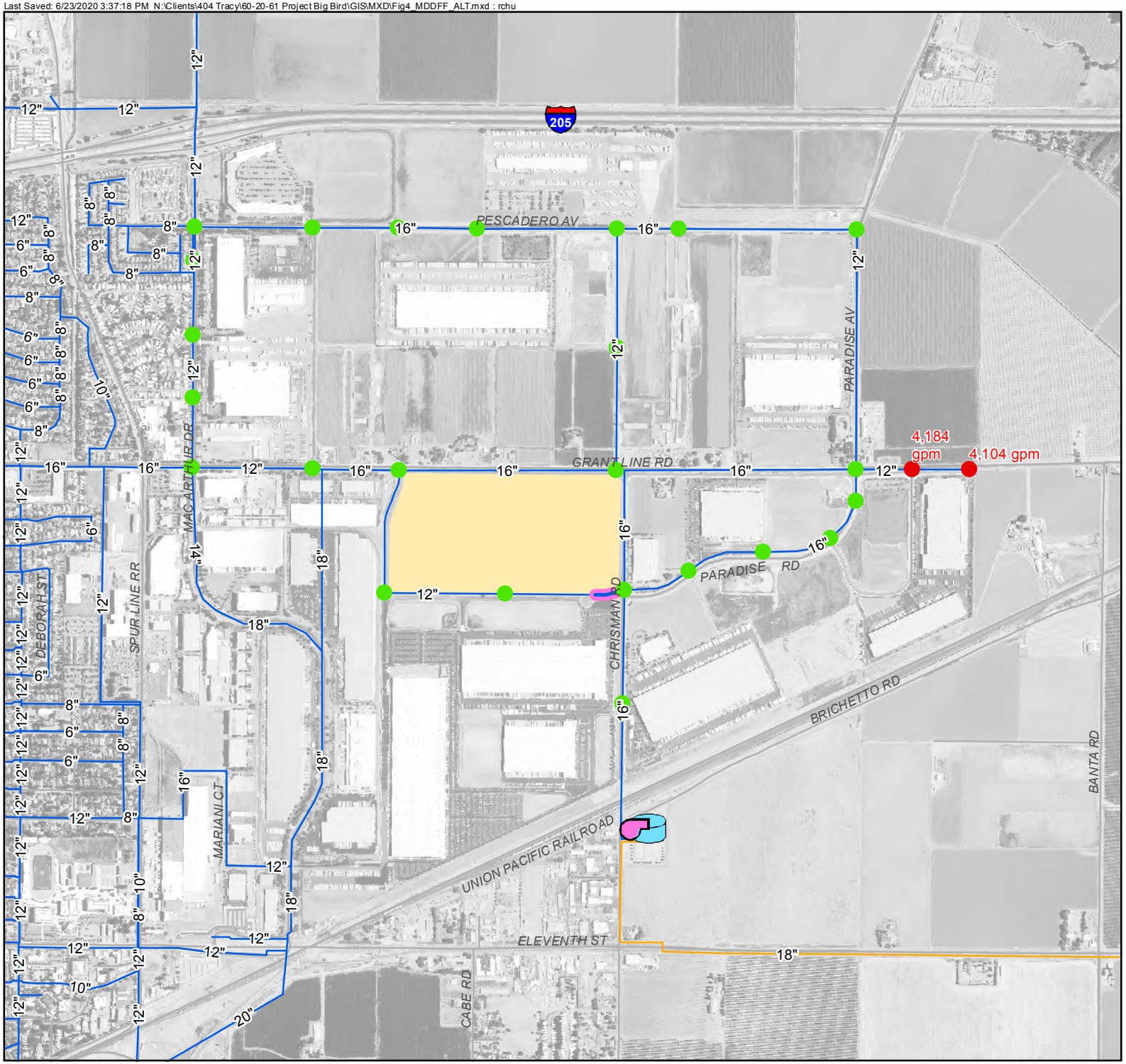


N

0 750 1,500

Scale in Feet

NEI Booster Pump Station

NEI Reservoir

Available Fire Flow

Does not meet Requirements

Meets Requirements

Pipeline Zone

Zone 1

SSJID

Recommended Improvements

Upsize to 12-inch Diameter Pipeline

Project Big Bird

Notes:

1. The available fire flow shown is the maximum flow available while maintaining 30 psi residual system pressure and limiting maximum pipeline velocities to 12 fps.
2. Fire flow requirements vary by land use type. Project Big Bird and adjacent locations require 4,500 gpm.

TRACY

WEST YOST ASSOCIATES

Figure 4

Fire Flow Results with Recommended Improvements

City of Tracy
Project Big Bird
Hydraulic Evaluation

ATTACHMENT A

Planning and Modeling Criteria

ATTACHMENT A
Planning and Modeling Criteria

Planning and modeling criteria used to evaluate the proposed Project are based on the system performance and operational criteria developed in the 2012 Citywide Water System Master Plan. The criteria used to evaluate the existing water system and the proposed pipelines for the Project are listed as follows:

- Residual pressure at the flowing hydrant (during an assumed maximum day demand plus fire flow condition) and throughout the water system must be equal to or greater than 30 pounds per square inch (psi) during the simulated fire condition.
- Minimum allowable service pressure is 40 psi during all other non-fire demand conditions.
- Maximum allowable service pressure is 80 psi. A pressure reducing valve (PRV) will be required on all water services with a static pressure greater than 80 psi and should conform with the requirements from the Uniform Plumbing Code.
- Maximum allowable distribution pipeline velocity is 12 feet per second (fps) during the simulated fire flow demand condition.
- Maximum allowable transmission and distribution pipeline velocity is 6 fps and 8 fps, respectively, during a non-fire demand condition.
- Maximum allowable head loss rate is 10 feet per 1,000 feet (ft/kft) during the simulated fire demand condition.
- Maximum head losses in distribution system pipelines should be limited to 7 ft/kft during a non-fire demand condition.
- New and required pipelines will be modeled with a roughness coefficient (C-factor) of 130.
- Available fire flow demand must meet a minimum flow of 1,500 gpm, 2,500 gpm, 3,500 gpm, or 4,500 gpm depending on land use during a maximum day demand condition. These required fire flow demands assume that buildings are sprinklered.
- The 2012 Master Plan hydraulic model of the City's water distribution system was used as the basis for evaluation.[1] However, the hydraulic model was updated to include the following major existing system improvements:
  - Improvements that have been recently constructed on South Lammers Road (20-inch diameter pipeline and pressure regulating station (PRS #6)); and
  - Proposed improvements on South MacArthur Drive (24-inch diameter pipeline).

[1] This hydraulic model was updated to include projected water demands from new developments such as Valpico and MacDonald Apartments; Sierra Hills (Aspire I) Apartments; Tiburon Village; Middlefield Drive Apartments and Self-Storage Facility; I 205 Parcels M1 and M2 and Infill Parcels 7 and 13; Grant Line Road Apartments; South Lammers Road Development; Aspire II Development; Pescadero IPT Development; first three buildings at Cordes Ranch; Ellis Specific Plan Phase 1A and Phase 1A Extension; Marriott TownePlace Suites; Larch Clover Interim Annexation; Ellis Specific Plan Phase 2 - The Gardens, IPC Buildings 3, 4, and 12; IPC Building 25; IPC Buildings 22, 23, and Thermo Fisher; Tracy Village Specific Plan; Avenues Specific Plan; IPC Buildings 9, 10, and 14; NEI Specific Plan; Tracy Hills Phases 1A, 1B, and 1C; Ellis Phase 3 – Town and Country; IPC Building 19A; Costco Depot; West Parkway Village; KT Project; IPC Prologis Sales Office Building; and IPC Building 2. City staff also requested West Yost to incorporate the following developments, which were evaluated by Black Water Consulting Engineers, Inc. into the City's hydraulic model: Barcelona Infill, Berg Road Properties, Harvest Apartments, 321 E. Grant Line Apartments, Project Hawk/IPC, and Home 2 Suites.

ATTACHMENT D

Technical Memorandum

BLACKWATER
CONSULTING ENGINEERS, INC.

To: Mike O'Connor, P.E. SNG & Associates (SENT VIA: EMAIL)
From: Aja Verburg, P.E.

Subject: Prologis Big Bird Tracy-NEI Phase 3 G4+5 Project
Sewer Collection System Hydraulic Capacity Analysis
Date: October 15, 2020

REGISTERED PROFESSIONAL ENGINEER
AJA J. VERBURG
No. C73020
CIVIL
STATE OF CALIFORNIA

INTRODUCTION

This Technical Memorandum (TM) has been prepared by Black Water Consulting Engineers, Inc. (Black Water) to present the findings of the sewer collection system hydraulic capacity analysis for the proposed Prologis Big Bird Tracy-NEI Phase 3 G4+5 Project (Project). Evaluation of the sewer collection system serving the proposed Project was modeled using Innovyze InfoSewer. This TM evaluates the capacity of the existing sewer collection system serving the Project and documents any impacts to the sewer system.

Section 1 provides a general description of the proposed Project, design criteria and assumptions. Section 2 includes the analyses methodology and analyses results. Section 3 identifies system deficiencies and recommended improvements.

Engineering reports and documents reviewed and referenced in this TM include the following:

[1] Project Big Bird Tracy-NEI Phase 3 G4+5 Plans, prepared by HPA Architecture, May 2020.
[2] Wastewater System Impact Fee Analysis for the NEI Phase 2 Area, prepared by CH2M Hill, updated April 27, 2005.
[3] City of Tracy Wastewater Master Plan, prepared by CH2M Hill, December 2012. (2012 WWMP)
[4] City of Tracy General Plan, Design, Community & Environment, February 2011. (2011 General Plan)
[5] City of Tracy Engineering Design & Construction Standards, February 2020.
[6] City of Tracy Wastewater System Analysis for McLaughlin Industrial Project, prepared by CH2M Hill, August 2017.

SECTION 1 – GENERAL DESCRIPTION

Project Description

The proposed Project is located in Tracy, California, south of Grant Line Road, west of N. Chrisman Road, and east of Skylark Way. Refer to **Figure 1** for the Project site location. The proposed preliminary utility plan provided by the City is included in **Appendix A** [1]. The Project site area totals approximately 86 acres. The 2011 General Plan designates the Project area as industrial land use, consistent with the proposed Project land use.

Figure 1 – Project Location

Existing Sewer System Service Area

The Project is part of the MacArthur Sewer System within the Northeast Industrial Area (NEI) development area [2]. Sewer flows from the MacArthur Sewer System service area are collected and conveyed by the existing sewer pipeline along W. Pescadero Avenue and the existing MacArthur Pump Station to the WWTP. **Appendix B**, Figure 2, provides an overview of the existing sewer infrastructure proposed to serve the Project. The Project site plan shows a proposed connection to the existing 12-inch diameter sewer pipeline in N. Chrisman Road and another connection to the existing 12-inch diameter sewer pipeline in E. Grant Line Road. The existing 12-inch diameter sewer pipeline in E. Grant Line Road is not part of the MacArthur Sewer System. Sewer flows from the Project should convey all flows to the MacArthur Sewer System at the east end of the Project.

The sewer analysis of the MacArthur Pump Station in the 2012 WWMP was excluded from this TM because the City staff has confirmed that the MacArthur Pump Station is currently running well under capacity. Pump station information provided by the City shows additional capacity is available at the MacArthur Pump Station. The MacArthur Pump Station consists of six (6) pumps that has a total capacity of 7.81 mgd. The pump controls only allow for three (3) pumps to operate at any given time. The City provided Black Water with the pump station performance data, presented in **Table 1**.

Table 1 – MacArthur Pump Station Performance Data[1]

Equipment Number	P1	P2	P3	P4	P5	P6
Capacity (each), gpm	1,235	1,235	1,235	1,235	242	242
Total Dynamic Head, feet	34	34	34	34	16	16
Maximum Shutoff Head, feet	57	57	57	57	43	43
Pump Speed, rpm (nominal)	1,800	1,800	1,800	1,800	1,800	1,800
Horsepower, Hp	20	20	20	20	3	3
Voltage, volts/Phase	460/3	460/3	460/3	460/3	460/3	460/3
Minimum efficiency (at design condition)	75%	75%	75%	45%	68%	68%

[1]Data provided by City staff via email on December 16, 2019. Black Water did not field verify or confirm the information.

The MacArthur Pump Station cycles on and off based on the wetwell level with no variable frequency drive (VFD). The minimum capacity of the pump station is 2.48 mgd with two smaller pumps operating with one larger pump and a maximum capacity of 5.33 mgd when all three of the larger pumps are operating at the same time.

Existing Peak Flows

Measured peak flow data collected from the City's flow monitoring program in March/April 2019 for the NEI area was used to estimate existing contributing flows and determine the available capacity of the MacArthur Sewer System. **Table 2** summarizes the measure peak flow data, estimated average dry weather flow (ADWF) and peak wet weather flow (PWWF) used to evaluate the capacity of the existing sewer system.

Table 2 – 2019 Flow Monitoring Data and Estimated Existing PWWF within the NEI Area

Site ID	Location	Pipeline Diameter (inch)	Measured Peak Flow[1] (mgd)	Measured ADWF[1] (mgd)	Estimated PWWF[2] (mgd)
1	Located at the intersection E Grant Line Rd & Paradise Rd	15	0.070	0.017	0.118
2	Located approximately 1700 Pescadero Rd	15	0.182	0.063	0.232
3	Located on Pescadero Rd near 1305 E Pescadero Ave	18	0.259	0.136	0.323
4	Located at the intersection of Pescadero Rd & MacArthur Dr	18	0.351	0.212	0.418
5	Located on MacArthur Drive near Highway 205 off-ramp	18	0.447	0.251	0.462
6	Located at the intersection of Chrisman Rd & E Grant Line Rd	17	0.096	0.029	0.097

[1]Flow Monitoring Data from 3/27/2019 to 4/3/2019, Preston Pipelines Tracy TM – 15-Minute Data.
[2]Based on measured peak flow and estimated inflow/infiltration rates. The total inflow rate is equal to the estimated existing contributing area of approximately 500 gross acres multiplied by 400 gal/ac-day. Groundwater infiltration rate is 6 percent of the measured ADWF.

This sewer analysis includes PWWF from the following development projects within the service area:

- MacLaughlin (PWWF = 0.168 mgd)
- Central Plastic (PWWF = 0.011 mgd)
- PreFab Structures – Katerra Blg. 17 (PWWF = 0.099 mgd)
- Seefried Industrial Campus (PWWF = 0.225 mgd)
- California Highway Patrol (PWWF = 0.073 mgd)

Estimated Project Sewer Flows

The ADWF for the proposed Project is typically estimated based on the 2012 WWMP wastewater generation factor for the designated land use. However, due to the anticipated high occupancy for the Project buildings, the ADWF was also estimated based on the 2009 International Building Code occupancy based on the building type and area. **Table 3** and **Table 4** provide the total estimated ADWF based on land use and occupancy.

Table 3 – Estimated Project ADWF by Land Use Designation

Land Use Designation	Assessor Parcel Number	Gross Acreage, Acres	Generation Factor, gpd/gross acre	ADWF, gpd
Industrial	250-020-93	86.0	1,056	90,816

Table 4 – Estimated Project ADWF by Building Occupancy

Function of Space	Assessor Parcel Number	Floor Area, ft^2	Occupancy[1]	Wastewater Generation Factor, gpd/capita	ADWF, gpd
Warehouse	250-020-93	767,714	1,535	80	122,834
Business		55,808	558	80	44,646
				Total	167,481

[1]Occupancy was estimated by using the 2009 International Building Code. Warehouse area is 500 sq-ft per occupant and business area is 100 sq-ft per occupant.

The total estimated ADWF by land use designation is 90,816 gpd. The total estimated ADWF by building occupancy is 167,481 gpd. For the purposes of this analysis and capacity evaluation, the higher estimated ADWF based on building occupancy is used.

The PWWF is used to evaluate the hydraulic capacity of the existing sewer system. PWWF includes the peak dry weather flow (PDWF) and the rainfall induced inflow/infiltration. The total estimated PWWF is 458,551 gpd. **Table 5** provides the values for parameters used to estimate the PWWF.

Table 5 – Estimated Project PWWF

Parameter	Value
Peaking Factor	2.50
Gross Acreage, acres	86.0
PDWF[1], gpd	418,702
Infiltration[2], gpd	5,449
Inflow[3], gpd	34,400
PWWF[4], gpd	458,551

[1]PDWF is equal to ADWF multiply by the Peaking Factor [5].
[2]Infiltration is equal to six (6) percent of the ADWF.
[3]Inflow is equal to the gross acreage multiply by 400 gal/ac-day.
[4]PWWF is equal to the summation of the PDWF, infiltration, and inflow.

Design Criteria

Sewer system performance design criteria and analysis requirements for new development are summarized in **Table 6**.

Table 6 – Design Criteria and Requirements [5]

Component	Criteria
Friction Factor "n"	0.013
Sewer Pipeline	
Minimum Velocity	2.0 fps (flowing full)
Maximum Velocity	10.0 fps
Maximum d/D Ratio	1.0
Minimum Diameter	8-inch
Available Slope	Obtain the minimum velocity of 2 fps
Material	Vitrified Clay Pipe (VCP) and Ductile Iron Pipe (DIP)
Service Lateral Sizing	
Single Family Residences	4-inch
Commercial	6-inch
Duplex and Multi-Family Lots	6-inch
Minimum Slope	2%
Sewer Manhole Maximum Spacing	
Diameter 12-inch and under	400 feet
Diameter 15-inch and over	600 feet

The following lists the data, documents, and assumptions in addition to the design criteria used to model and evaluate the sewer system for the hydraulic capacity analysis:

- City parcel shapefiles downloaded by Black Water from the San Joaquin County Geographic Information Systems (GIS) website on October 11, 2019.
- City GIS shapefiles of the existing sewer system provided to Black Water on October 10, 2019.
- City AutoCAD Utility Base Map shapefiles provided to Black Water on August 20, 2019.
- Contributing areas to the existing sewer system were estimated based on the AutoCAD map and GIS shapefiles. The existing system CAD shapefile pipe inverts provided the information used to determine the direction of flow.

SECTION 2 – HYDRAULIC CAPACITY ANALYSIS EVALUATION AND RESULTS

The sewer system serving the proposed Project was modeled using Geographic Information System (GIS) integrated Innovyze Infosewer software. Although most of the sewers within the City are included in the GIS database, the modeling focused on the major trunk sewers within the system serving the Project. The software uses the Manning equation to determine the pipe flow in a gravity main.

The modeling software uses the upstream and downstream invert elevation, pipe diameter, and wastewater flow data to calculate slope, d/D, and the velocity in the pipes. The software also uses rim elevation, invert elevation, manhole diameter, and wastewater flow data to calculate the liquid level in a manhole. For this analysis, a manhole diameter of 5 feet is assumed.

Modeling Results

The system was modeled by connecting the Project to the sewer pipeline in N. Chrisman Road. The modeling results show that the existing MacArthur Sewer System has sufficient capacity to meet the established hydraulic criteria. The velocity of the MacArthur Sewer System ranged from 0.664 fps to 3.492 fps with a maximum d/D ratio of 0.652 during the modeling analysis. **Appendix B**, Figure 3 presents the sewer collection system modeling layout and hydraulic capacity for this analysis. **Appendix B** also includes the model output data for the modeling analysis.

The modeling analysis calculates a total influent flow at MacArthur Pump Station of 1.50 mgd. The remaining available capacity of the MacArthur Pump Station is 0.98 mgd, based on a minimum capacity of 2.48 mgd. The MacArthur Pump Station has sufficient capacity to accommodate the sewer flows generated by the Project, based on the existing system capacity discussed in Section 1.

SECTION 3 – SYSTEM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

Based on the modeling results, the exiting MacArthur Sewer System has sufficient capacity to accommodate sewer flows generated by the Project. The 2012 WWMP stated that the MacArthur Pump Station is at or near design capacity, however, City staff has indicated otherwise. Based on the pump station pump performance data and operation schedule provided by the City, the MacArthur Pump Station has sufficient capacity to serve the Project. The 2012 WWMP is currently being updated by the City.

The utility plan shows a connection to the 12-inch diameter sewer pipeline in E. Grant Line Road which is not part of the MacArthur Sewer System. The developer is required to relocate the proposed connection in E. Grant Line Road to utilize the existing MacArthur Sewer System infrastructure in N. Chrisman Road.

Any changes or modifications to the proposed Project, sewer system layout or development of the Project inconsistent with assumptions made in this analysis will require additional evaluation.

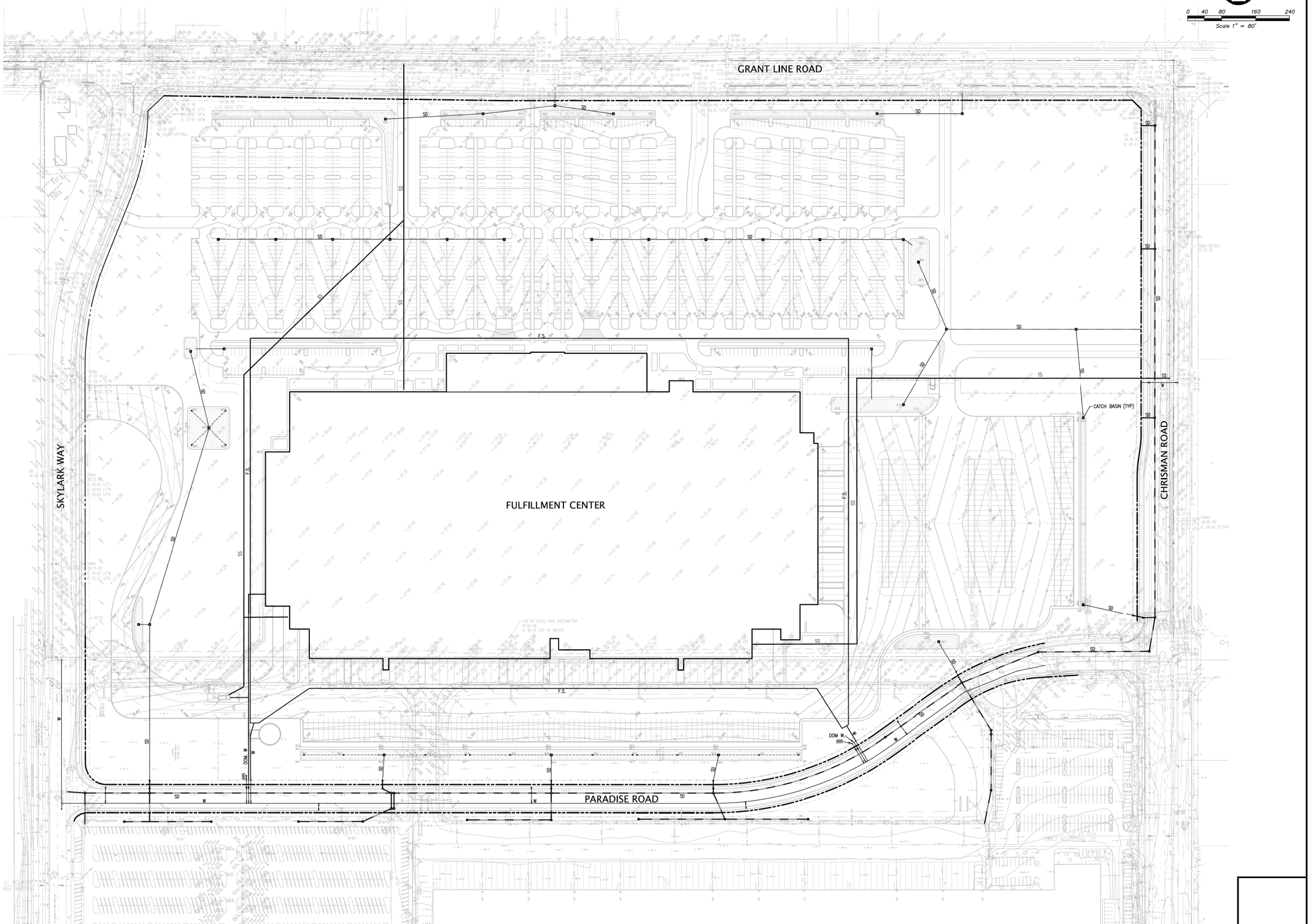
SUMMARY

The MacArthur Sewer System has sufficient capacity to accommodate sewer flows generated by the Project for the current buildout conditions of the service area. No off-site improvements are recommended to serve the Project. The proposed Project is required to be connected to the MacArthur Sewer System. The developer is required to relocate the proposed connection in E. Grant Line Road to utilize the existing MacArthur Sewer System infrastructure in N. Chrisman Road.

APPENDIX A

PRELIMINARY PROPOSED UTILITY PLAN

Project Big Bird Tracy-NEI Phase 3 G4+5 Plans, Sheets DAB-A1.1 and C.4



NO.	REVISION	BY

NO.	REVISION	BY
1	PLANNING SUBMITTAL 5/22/2020	
2		
3		
4		
5		

KIER+WRIGHT
2850 Collier Canyon Road
Livermore, California 94551
Phone: (925) 245-8788
www.kierwright.com

REGISTERED PROFESSIONAL ENGINEER
WIDSNEY F. MASSEY
No. 71814
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

OVERALL PRELIMINARY UTILITY PLAN
NEI PHASE 3
SKYLARK FULFILLMENT CENTER

TRACY CALIFORNIA

DATE	05/22/2020
SCALE	1" = 80'
ENGINEER	M.F.B.
DRAFTER	-
JOB NO.	A05728-43
SHEET	C.4
OF	9 SHEETS

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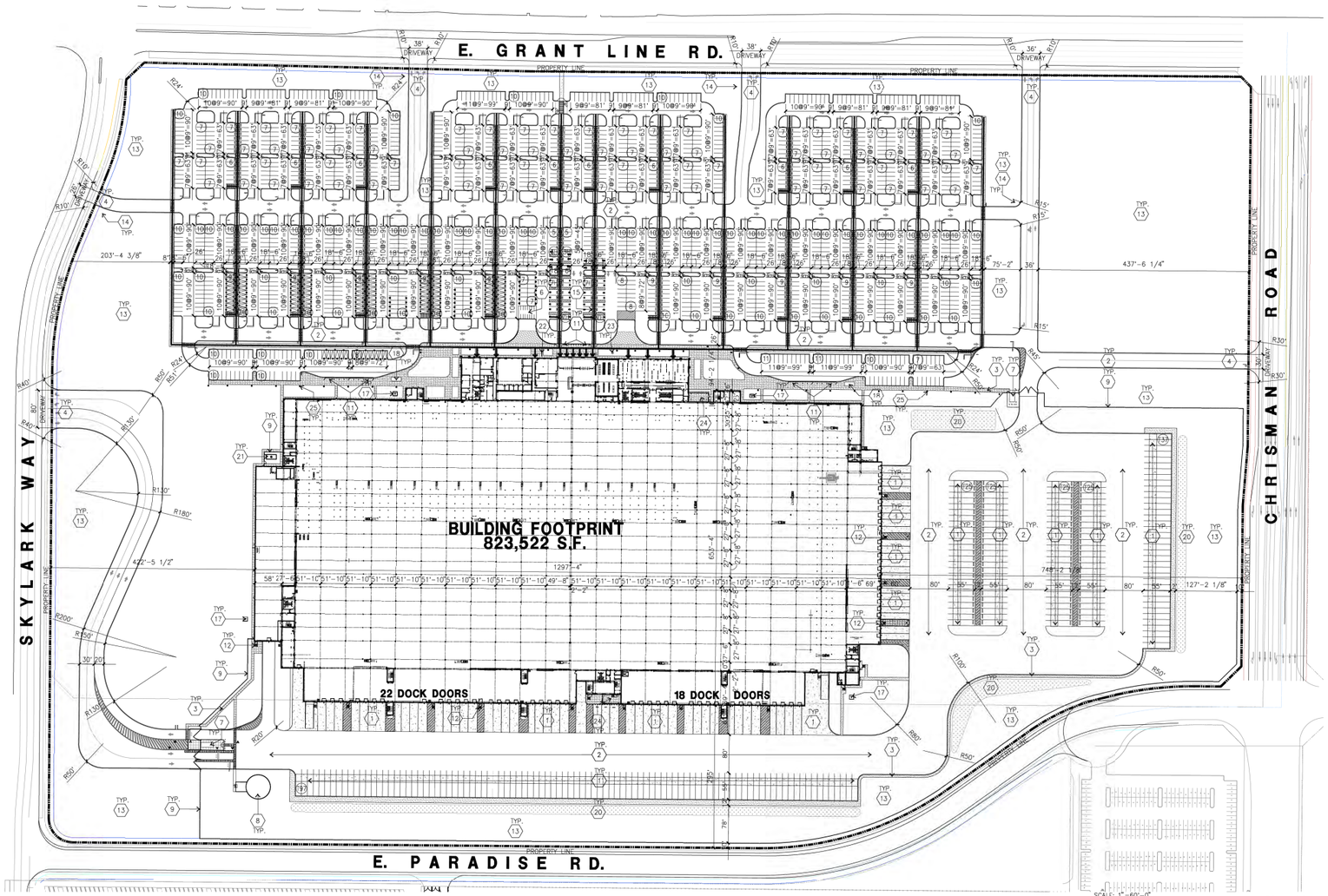
RECEIVED
May 26, 2020
City of Tracy
Development Services



OVERALL SITE PLAN (A)
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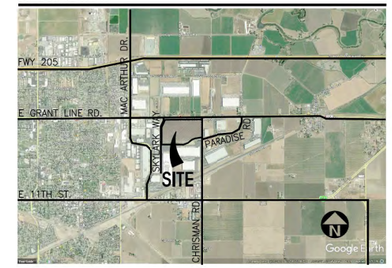
AERIAL MAP



TABULATION

	OCCUPIED AREA	NON OCCUPIED AREA RSP (ROBOTIC STORAGE PLATFORM)
SITE AREA		
In s.f.	3,746,777 s.f.	
In acres	86.0 ac	
BUILDING AREA		
Office	55,808 s.f.	
Warehouse	767,714 s.f.	
BUILDING FOOTPRINT	**823,522** s.f.	
Level 2	133,024 s.f.	532,445 s.f.
Level 3	133,024 s.f.	532,445 s.f.
Level 4	133,024 s.f.	532,445 s.f.
Level 5	133,024 s.f.	532,445 s.f.
TOTAL AREA	**1,355,618** s.f.	**2,129,781** s.f.
CONSTRUCTION TYPE	IA	
OCCUPANCY	B/S-1/A2/A3	
FLOOR AREA RATIO		
Max. allowed - .50		
Actual - 0.36		
AUTO PARKING REQUIRED *(City Code)*		
Office: 1 / 250 s.f.	224 stalls	
Whse: 1st 20K @ 1/1,000 s.f.	20 stalls	
2nd 20K @ 1/2,000 s.f.	10 stalls	
above 40K @ 1/4,000 s.f.	325 stalls	
TOTAL	579 stalls	
AUTO PARKING PROVIDED		
Standard (18-6" X 9')	1,689 stalls	
Accessible standard (9' x 18'-6")	20 stalls	
Accessible van (12' x 18'-6")	8 stalls	
EV/Clean Air/Vanpool (8% req'd) including below	150 stalls	
EV/Clean Air/Vanpool	38 stalls	
Future EV Charging Station (6% Req'd) including below	112 stalls	
- Future EVCS Standard Accessible	4 stalls	
- Future EVCS (Van)	2 stalls	
- Future Ambulatory (18'-6" x 10')	4 stalls	
TOTAL	1,867 stalls	
Motorcycle Parking	12 stalls	
TRAILER PARKING PROVIDED		
Trailer (12' x 55')	234 stalls	
ZONING ORDINANCE FOR CITY		
Zoning Designation - Northeast Industrial		
MAXIMUM BUILDING HEIGHT ALLOWED		
Max. allowed - 60'		
Actual - 125' (variance requested)		
LANDSCAPE REQUIREMENT		
Percentage - 10% of parking area		
SETBACKS		
Building / Landscape		
Front - 25' / 15'		
Side / Rear - 15' / 5'		

SITE PLAN KEYNOTES

1. HEAVY BROOM FINISH CONC. PAVEMENT.
2. ASPHALT PAVING
3. CONCRETE WALKWAY
4. DRIVEWAY APRONS
5. 5'-6"X 5'-6" CONCRETE EXTERIOR LANDING PAD
6. MOTORCYCLE PARKING
7. TILT-UP CONCRETE WALLED GUARD HOUSE, SEE DAB 4.1
8. FIRE PUMP HOUSE AND WATER STORAGE TANK
9. 8' H TALL BLACK WROUGHT IRON FENCE.
10. PRE-CAST CONC. WHEEL STOP
11. CONC. FILLED GUARD POST 6" DIA., 48" H., U.N.O.
12. EXTERIOR STAIR.
13. LANDSCAPE. SEE "L" DWGS.
14. ACCESSIBLE ENTRY SIGN
15. ACCESSIBLE PARKING STALL SIGN
16. ELECTRICAL ROOM
17. APPROXIMATE LOCATION OF THE TRANSFORMER. SEE DAB-A4.1 DWG.
18. EMPLOYEE DROP-OFF SHELTER. HANDI-HUT MODEL #6-3WSPH OR EQUAL.
19. CONCRETE SIDEWALK. SEE CIVIL
20. STORM DRAINAGE OR TREATMENT. SEE CIVIL.
21. APPROXIMATE LOCATION OF EMERGENCY GENERATOR AND ASSOCIATED ELECTRICAL PANELS.
22. BIKE RACK, THE BIKE RACK LOCATION.
23. 30' H FLAG POLE AND LIGHTS.
24. PRE-ENGINEERED SMOKERS SHELTER.
25. PEDESTRIAN LIGHTS

SITE PLAN GENERAL NOTES

1. THE SOILS REPORT WILL BE PREPARED BY ENGEO AND SUBMITTED WITH THE BUILDING PERMIT APPLICATION.
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE.
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM, IF REQUIRED.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C" DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY W/ 1:20 MAX. SLOPE. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". SEE "L" DRAWINGS FOR FINISH.
11. NOT USED
12. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
13. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
14. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
15. NOT USED
16. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
17. NOT USED.
18. LANDSCAPED AREAS SHALL BE DELINEATED WITH A MINIMUM SIX INCHES (6") HIGH CURB

SITE LEGEND

- LANDSCAPED AREA
- AC. PAVING – SEE "C" DRWGS. FOR THICKNESS
- CONCRETE PAVING SEE "C" DRWGS. FOR THICKNESS
- STANDARD PARKING STALL (9' X 18'-6")
- HANDICAP PARKING STALL (9' X 18'-6")
- VAN HANDICAP PARKING STALL (12' X 18'-6")

PROJECT INFORMATION

Project Address
GRANT LINE ROAD,
TRACY, CA

Assessors Parcel Number
250-020-93

Owner/Applicant
PROLOGIS INC.
815 INTERNATIONAL PKWY
TRACY, CA 95377
CONTACT: MATT SIMS
TEL: (510) 661-4012

Code
CBC 2019
CPC 2019
CMC 2019
CEC 2019

Applicant's Representatives
HPA, INC.
600 GRAND AVE., SUITE 302
OAKLAND, CA 94610
CONTACT: TERESA GOODWIN
PHONE: (925) 113-6896

Zoning
SPECIFIC PLAN: NORTH EAST INDUSTRIAL SPECIFIC PLAN

HPA architecture
hpa, inc.
18831 Bardeen Avenue, Suite 100
Irvine, CA
92612
tel: 949•863•1770
email: hpa@hparchs.com

LICENSED ARCHITECT
RICHARD C. HARRIS
C-22270
08-31-21
RENEWAL DATE
STATE OF CALIFORNIA

Owner:

PROLOGIS®
Ahead of what's next

3353 Gateway Blvd.
Fremont, CA 94538
tel: (510) 656-1900

Project:

Project Big Bird
Tracy-NEI
PHASE 3 G4+5

Tracy CA

Consultants:

CIVIL	K&W
STRUCTURAL	HSA
MECHANICAL	KRAEMER
PLUMBING	KRAEMER
ELECTRICAL	KRAEMER
LANDSCAPE	GREEN DESIGN
FIREPROTECTION	HARRINGTON
SOILS ENGINEER	ENGEO

Title: Overall Site Pan

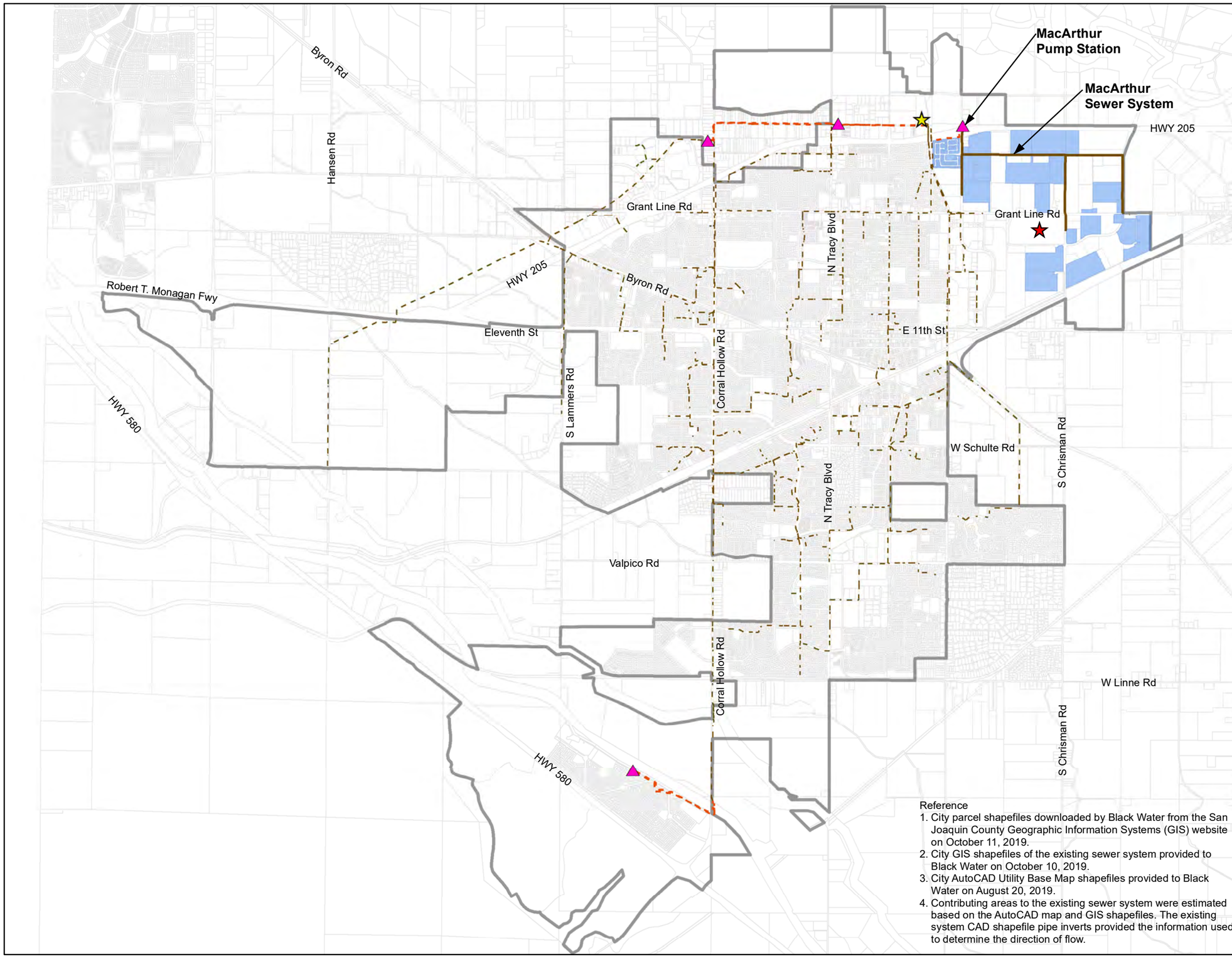
Project Number: 2016
Drawn by: CG
Date: 7/01/20
Revision:

Sheet:

DAB-A1.1

APPENDIX B

MODELING ANALYSIS FIGURES 2-3
DATA OUTPUT
FLOW DATA



Reference
1. City parcel shapefiles downloaded by Black Water from the San Joaquin County Geographic Information Systems (GIS) website on October 11, 2019.
2. City GIS shapefiles of the existing sewer system provided to Black Water on October 10, 2019.
3. City AutoCAD Utility Base Map shapefiles provided to Black Water on August 20, 2019.
4. Contributing areas to the existing sewer system were estimated based on the AutoCAD map and GIS shapefiles. The existing system CAD shapefile pipe inverts provided the information used to determine the direction of flow.

TRACY

LEGEND

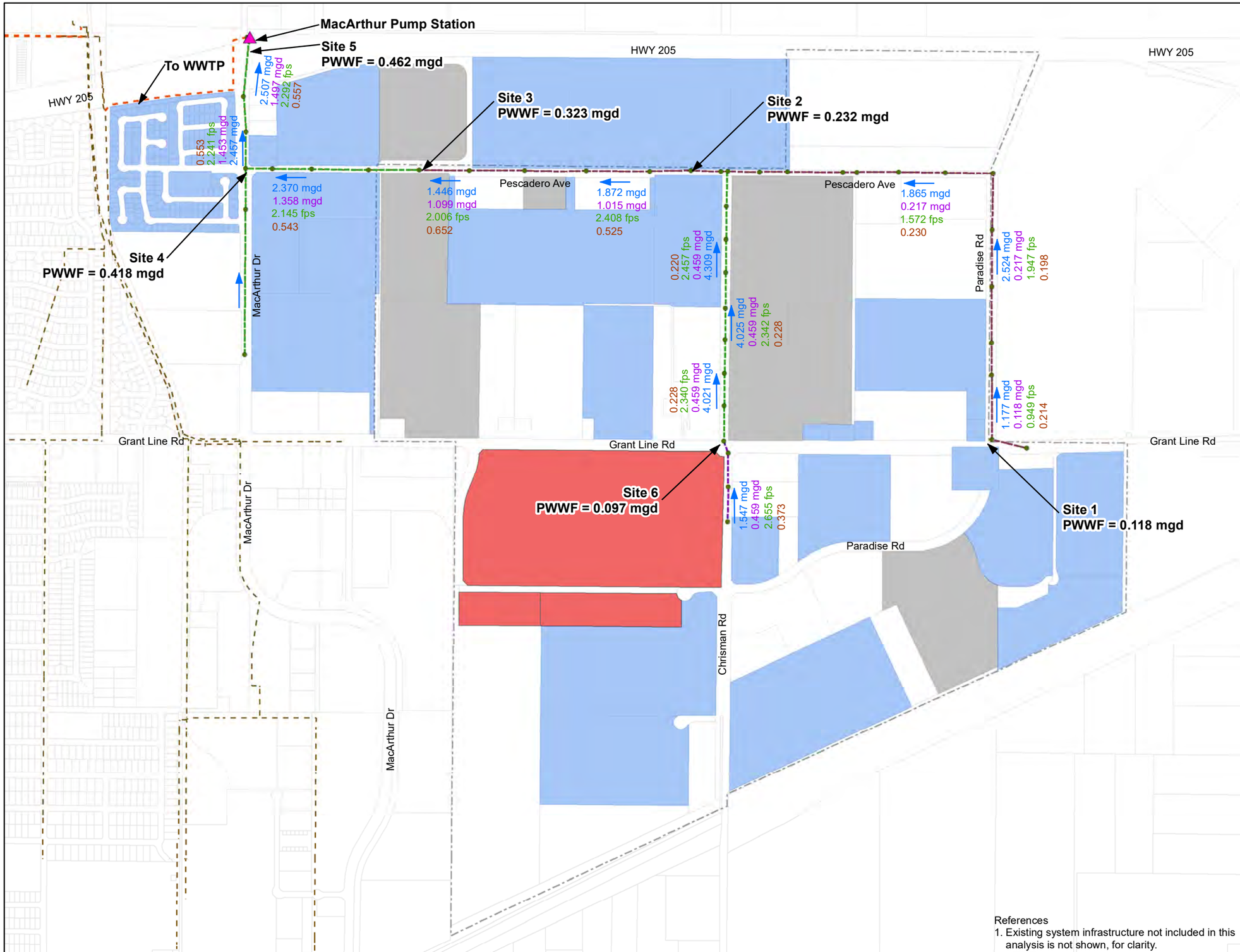
- Tracy City Limits
- Wastewater Treatment Plant
- Pump Station
- Gravity Sewer Pipeline Serving Project
- Existing Sewer Force Main
- Existing Sewer Pipeline
- Existing Contributing Area of Sewer Flow to MacArthur Pump Station (Approximately 500 gross acres)
- Prologis Big Bird Tracy-NEI Phase 3 G4+5 (Proposed Project)

Figure 2

SEWER CAPACITY ANALYSIS

Existing Sewer System Schematic

BLACKWATER CONSULTING ENGINEERS, INC.



References
1. Existing system infrastructure not included in this analysis is not shown, for clarity.

TRACY

LEGEND

- NEI Area
- Pump Station
- Sewer Manhole
- 12 - inch Sewer Pipeline
- 18 - inch Sewer Pipeline
- 15 - inch Sewer Pipeline
- Existing Sewer Force Main
- Existing Sewer Pipeline
- Prologis (Proposed Project)
- Proposed Sewer Flows to MacArthur Pump Station
- Existing Contributing Area of Sewer Flow to MacArthur Pump Station (Approximately 500 gross acres)
- # mgd — Hydraulic Capacity and Direction of Flow
- # mgd — Total Peak Flow
- # fps — Velocity
- # — d/D Ratio

Figure 3

SEWER CAPACITY ANALYSIS RESULTS

Prologis Project Development

BLACKWATER CONSULTING ENGINEERS, INC.

MacArthur Sewer System - Manhole Report

ID	Rim Elevation (ft)	Base Flow (mgd)	Total Flow (mgd)	Storm Flow	Grade (ft)	Status	Hydraulic Jump	Surcharge Depth (ft)	Unfilled Depth (ft)
2057	23.02	0.095	0.095	0	2.86	Not Full	No	-0.67	20.16
2057-1	24.13	0	0	0	3.257	Not Full	No	-0.683	20.873
2057-2	23.04	0	0	0	3.734	Not Full	No	-0.686	19.306
2058	27.522	0	0	0	19.08	Not Full	No	-1.5	8.442
2059	21.2	0.044	0.044	0	1.975	Not Full	No	-0.665	19.225
2060	33.463	0	0	0	2.409	Not Full	No	-0.661	31.054
3395	26.31	0	0	0	7.687	Not Full	No	-0.593	18.623
3396	25.41	0	0	0	8.906	Not Full	No	-0.594	16.504
3397	27.455	0.114	0.114	0	10.141	Not Full	No	-0.684	17.314
3398	27.138	0	0	0	10.719	Not Full	No	-0.614	16.419
3399	26.993	0	0	0	10.841	Not Full	Yes	-0.614	16.152
3399.1	28	0	0	0	13.528	Not Full	No	-1.232	14.472
3399.1	36.8	0	0	0	24.753	Not Full	No	-0.627	12.047
3399.1	37.7	0.459	0.459	0	26.283	Not Full	No	-0.627	11.417
3399.2	29	0	0	0	14.891	Not Full	No	-1.169	14.109
3399.3	30.6	0	0	0	16.201	Not Full	No	-1.169	14.399
3399.4	31	0	0	0	17.571	Not Full	No	-1.169	13.429
3399.5	33	0	0	0	18.652	Not Full	No	-1.158	14.348
3399.6	33	0	0	0	19.792	Not Full	No	-1.158	13.208
3399.7	33	0	0	0	20.912	Not Full	No	-1.158	12.088
3399.8	35.7	0	0	0	22.665	Not Full	Yes	-1.185	13.035
3399.9	35.8	0	0	0	23.096	Not Full	No	-0.694	12.704
3400	26.095	0	0	0	11.168	Not Full	No	-0.821	14.927
3401	25.701	0.225	0.225	0	11.645	Not Full	No	-0.821	14.056
3402	24.874	0	0	0	12.451	Not Full	No	-0.953	12.423
3403	24.607	0	0	0	12.687	Not Full	No	-0.953	11.92
3404	24.453	0	0	0	13.397	Not Full	No	-0.953	11.056
3405	25.02	0	0	0	14.288	Not Full	No	-0.962	10.732
3406	27.38	0	0	0	15.19	Not Full	No	-0.96	12.19
3407	27.627	0	0	0	15.538	Not Full	No	-0.712	12.089
3408	28.599	0	0	0	17.248	Not Full	No	-1.002	11.351
3409	31.561	0	0	0	18.202	Not Full	No	-0.948	13.359
3410	32.409	0.099	0.099	0	18.703	Not Full	No	-0.947	13.706
3411	33.314	0.118	0.118	0	19.167	Not Full	No	-0.983	14.147
3435	32.802	0	0	0	19.5	Not Full	No	-1.25	13.302
3436	23.12	0.168	0.168	0	4.388	Not Full	No	-0.682	18.732
3437	23.08	0.091	0.091	0	4.914	Not Full	No	-0.746	18.166
3438	24.34	0.073	0.073	0	5.555	Not Full	No	-0.435	18.785
3439	25.95	0.011	0.011	0	6.479	Not Full	No	-0.591	19.471
JCT-408	20.5	0	0	0	-0.822	Not Full	No	-0.582	21.322
JCT-88	32.027	0	0	0	19.98	Not Full	No	-1.5	12.047

ID	From ID	To ID	Diameter (in)	Length (ft)	Slope	Total Flow (mgd)	Unpeakable Flow (mgd)	Flow Type	Velocity (ft/s)	d/D	q/Q	Water Depth (ft)	Critical Depth (ft)	Froude Number	Full Flow (mgd)	Backwater Adjustment	Adjusted Depth (ft)	Adjusted Velocity (ft/s)
1824	2060	2059	18	342.037	0.001	1.453	1.453	Free Surface	2.21	0.559	0.602	0.839	0.567	0.471	2.414	No	0.839	2.21
20805-1	3436	2057-2	18	545	0.001	1.358	1.358	Free Surface	2.132	0.545	0.578	0.818	0.547	0.463	2.351	No	0.818	2.132
20805-2	2057-1	2057	18	259	0.001	1.358	1.358	Free Surface	2.135	0.545	0.577	0.817	0.547	0.464	2.355	No	0.817	2.135
20805-3	2057-2	2057-1	18	396	0.001	1.358	1.358	Free Surface	2.145	0.543	0.573	0.814	0.547	0.467	2.37	Yes	0.816	2.14
935	2057	2060	18	352.988	0.001	1.453	1.453	Free Surface	2.241	0.553	0.591	0.83	0.567	0.482	2.457	Yes	0.835	2.226
937	JCT-88	2058	18	1,416.88	0.001	0	0	Free Surface	0	0	0	0	0	0	1.716	No	0	0
CDT-303	3437	3436	18	491.16	0.001	1.19	1.19	Free Surface	2.07	0.503	0.504	0.754	0.511	0.474	2.359	Yes	0.786	1.964
CDT-305	3438	3437	15	486	0.001	1.099	1.099	Free Surface	2.006	0.652	0.76	0.815	0.518	0.419	1.446	No	0.815	2.006
CDT-307	3439	3438	15	538	0.002	1.026	1.026	Free Surface	2.418	0.528	0.547	0.659	0.499	0.587	1.876	Yes	0.737	2.108
CDT-309	3395	3439	15	607	0.002	1.015	1.015	Free Surface	2.405	0.525	0.543	0.657	0.497	0.586	1.869	Yes	0.658	2.398
CDT-313	3396	3395	15	610	0.002	1.015	1.015	Free Surface	2.408	0.525	0.542	0.656	0.497	0.587	1.872	Yes	0.656	2.406
CDT-315	3397	3396	15	399.68	0.003	1.015	1.015	Free Surface	2.908	0.453	0.421	0.566	0.497	0.778	2.41	Yes	0.611	2.635
CDT-317	3398	3397	15	291.445	0.002	0.901	0.901	Free Surface	2.221	0.509	0.516	0.636	0.467	0.552	1.748	No	0.636	2.221
CDT-319	3399	3398	15	69.827	0.002	0.901	0.901	Free Surface	2.222	0.509	0.515	0.636	0.467	0.553	1.75	Yes	0.636	2.221
CDT-320.1	3399.1	3399	18	328	0.009	0.459	0.459	Free Surface	3.31	0.179	0.07	0.268	0.313	1.35	6.57	Yes	0.452	1.582
CDT-320.10	3399.1	3399.9	12	352	0.005	0.459	0.459	Free Surface	2.662	0.373	0.296	0.373	0.352	0.893	1.552	No	0.373	2.662
CDT-320.11	3399.11	3399.1	12	341	0.004	0.459	0.459	Free Surface	2.655	0.373	0.297	0.373	0.352	0.89	1.547	No	0.373	2.655
CDT-320.2	3399.2	3399.1	18	325	0.004	0.459	0.459	Free Surface	2.456	0.22	0.107	0.331	0.313	0.898	4.305	No	0.331	2.456
CDT-320.3	3399.3	3399.2	18	327	0.004	0.459	0.459	Free Surface	2.457	0.22	0.107	0.331	0.313	0.898	4.309	Yes	0.331	2.456
CDT-320.4	3399.4	3399.3	18	343	0.004	0.459	0.459	Free Surface	2.454	0.221	0.107	0.331	0.313	0.897	4.302	No	0.331	2.454
CDT-320.5	3399.5	3399.4	18	306	0.003	0.459	0.459	Free Surface	2.342	0.228	0.114	0.342	0.313	0.841	4.025	No	0.342	2.342
CDT-320.6	3399.6	3399.5	18	325	0.004	0.459	0.459	Free Surface	2.344	0.228	0.114	0.342	0.313	0.842	4.032	Yes	0.342	2.343
CDT-320.7	3399.7	3399.6	18	321	0.003	0.459	0.459	Free Surface	2.34	0.228	0.114	0.342	0.313	0.84	4.021	No	0.342	2.34
CDT-320.8	3399.8	3399.7	18	366	0.005	0.459	0.459	Free Surface	2.632	0.21	0.097	0.315	0.313	0.987	4.747	Yes	0.329	2.478
CDT-320.9	3399.9	3399.8	12	98	0.01	0.459	0.459	Free Surface	3.492	0.306	0.203	0.306	0.352	1.31	2.261	Yes	0.56	1.568
CDT-321	3400	3399	15	306.192	0.002	0.442	0.442	Free Surface	1.838	0.343	0.253	0.429	0.323	0.578	1.748	Yes	0.532	1.373
CDT-323	3401	3400	15	273.505	0.002	0.442	0.442	Free Surface	1.838	0.343	0.253	0.429	0.323	0.578	1.748	No	0.429	1.838
CDT-325	3402	3401	15	538.256	0.002	0.217	0.217	Free Surface	1.501	0.238	0.124	0.297	0.225	0.577	1.748	Yes	0.363	1.135
CDT-327	3403	3402	15	135.304	0.002	0.217	0.217	Free Surface	1.501	0.238	0.124	0.297	0.225	0.577	1.748	Yes	0.297	1.501
CDT-329	3404	3403	15	407.053	0.002	0.217	0.217	Free Surface	1.501	0.238	0.124	0.297	0.225	0.577	1.748	No	0.297	1.501
CDT-331	3405	3404	15	453.268	0.002	0.217	0.217	Free Surface	1.572	0.23	0.116	0.288	0.225	0.615	1.865	Yes	0.293	1.536
CDT-333	3406	3405	15	466.281	0.002	0.217	0.217	Free Surface	1.556	0.232	0.118	0.29	0.225	0.606	1.839	No	0.29	1.556
CDT-335	3407	3406	15	551.655	0	0.217	0.217	Free Surface	0.664	0.431	0.385	0.538	0.225	0.183	0.564	No	0.538	0.664
CDT-337	3408	3407	15	550.188	0.004	0.217	0.217	Free Surface	1.947	0.198	0.086	0.248	0.225	0.825	2.524	Yes	0.393	1.016
CDT-339	3409	3408	15	547.639	0.002	0.217	0.217	Free Surface	1.47	0.241	0.128	0.302	0.225	0.56	1.697	No	0.302	1.47
CDT-341	3410	3409	15	309.154	0.002	0.217	0.217	Free Surface	1.461	0.242	0.129	0.303	0.225	0.556	1.684	No	0.303	1.461
CDT-343	3411	3410	15	632.74	0.001	0.118	0.118	Free Surface	0.949	0.214	0.1	0.267	0.165	0.386	1.177	Yes	0.285	0.866
CDT-345	3435	3411	15	349.115	0.002	0	0	Free Surface	0	0	0	0	0	0	1.735	Yes	0.134	0
CDT-715	2059	JCT-408	18	567.827	0.001	1.497	1.497	Free Surface	2.292	0.557	0.597	0.835	0.575	0.49	2.507	No	0.835	2.292
CDT-75	2058	2057	18	396.955	0.038	0	0	Free Surface	0	0		0	0	0	13.255	No	0	0

ATTACHMENT D

City Draft 11-03-2020

COMMUNITY BENEFIT
MEMORANDUM OF UNDERSTANDING

By and Between the

CITY OF TRACY,

a municipal corporation

and

PROLOGIS, L.P.

Effective Date: November __, 2020

COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING

This Community Benefit Memorandum of Understanding ("MOU") is made by and between the CITY OF TRACY, a municipal corporation ("City"), and PROLOGIS, L.P. ("Developer") on November ___, 2020. City and Developer are collectively referred to herein as the "Parties" and may each be individually referred to as a "Party."

RECITALS

A. Developer is currently developing multiple industrial and commercial development projects in the City of Tracy. These projects include more than _____ square feet of employment and revenue generating uses for the region.

B. Among the projects Developer has brought to the City is the development of approximately _____ square feet of warehouse and distribution center space in the City's Northeast Industrial ("NEI") Specific Plan Area, If approved, this project is expected to bring additional jobs to the City and generate tax revenue for the region. To enable Developer to develop this project, Developer has asked City to modify certain development standards in the NEI Specific Plan Area to accommodate the Project, and in recognition of Developer's substantial investments in the City and the significant benefits realized by the City from Developer's investments, the City has expressed its willingness to consider such modifications.

C. In appreciation of its long-standing and mutually beneficial relationship with the City, and in exchange for City's cooperation in assisting Developer to continue to make the City an important home for Developer, Developer wishes to provide City with a significant community benefit (the "Future Project").

D. City and Developer have discussed options for Developer to provide such a community benefit and have tentatively agreed that the Future Project should be a multi-purpose gymnasium or similar recreational facility. The parties have agreed, however, that Developer will provide funding in the amount of four million dollars ($4,000,000) for the development of the Future Project, in a location to be determined by the City and subject to the limitations set forth herein.

E. The Parties have further agreed that, prior to commencing development of the Future Project, the Future Project will comply with all applicable State and local laws and requirements.

F. The Parties therefore enter into this MOU to memorialize the basic terms of City's and Developer's obligations with respect to the Future Project.

MEMORANDUM OF UNDERSTANDING

Based upon the foregoing Recitals, which are incorporated herein as provisions of this MOU by reference, and in consideration of the covenants and promises of City and Developer contained in this MOU, the Parties hereby agree as follows:

1. Developer Contribution; Funding and Payment Obligations

As set forth in Section 3 below, Developer shall contribute four million dollars ($4,000,000) to

fund the development of the Future Project ("Developer Contribution"). Such funding shall be provided at a time and in a manner to be determined by City, after consulting with Developer. Subject to the limitations of Section 3 below, City may, at any time during the Term of this MOU (defined below), request payment in cash of all or any portion of the Developer Contribution, and Developer shall make the requested payment within forty-five (45) days of such a written request. At such time as Developer's payment(s) of the Developer Contribution total $4,000,000, this MOU shall immediately expire and Developer shall have no further obligations hereunder.

Not later than ten (10) days prior to the end of the Term, Developer shall make full payment to City of the then-outstanding balance of the Developer Contribution. At the expiration of the Term, subject to Developer's having made such payment to City, this MOU shall automatically expire and Developer shall have no further obligations hereunder.

During the Term, City will make good faith efforts to identify and pursue opportunities for additional funding for the Future Project, in addition to the Developer Contribution.

2. Future Project

The location of the Future Project will be determined by City in its sole discretion. The precise nature and scope of the Future Project is currently undefined. During the Term, Developer and City shall use all commercially reasonable and good faith efforts to work cooperatively to prepare a plan for a multi-purpose gymnasium or other mutually agreeable recreational amenity that is acceptable to both Developer and City as the Future Project. All language to the contrary herein notwithstanding, however, City shall have sole and exclusive discretion to determine the final form of the Future Project.

3. Limitations on Section 1 Rights and Obligations; Early Termination or Tolling

All language in this MOU to the contrary notwithstanding, the Parties' rights and obligations under Section 1 of this MOU shall not become effective until both of the following conditions precedent are satisfied: (i) 30 days have passed following the lapsing of the statute of limitations set forth in Government Code section 65009 ("Statute of Limitations Period") following the City Council's final approval of Specific Plan Amendment SPA20-0005 and Development Review D20-0017 (the "Project Big Bird Approvals"), and (ii) no lawsuit challenging Project Big Bird Approvals has been filed within the Statute of Limitations Period.

A. If no lawsuit challenging the Project Big Bird Approvals is filed during the Statute of Limitations Period, then on the first day following the expiration of the Statute of Limitations Period (January ___, 2021, or the "Contribution Effective Date"), the Parties' rights and obligations under Section 1 shall become effective and shall remain in effect for the remainder of the Term.

B. If a lawsuit is filed within the Statute of Limitations Period, City may notify Developer in writing, that the effectiveness of this MOU is tolled until such time as the lawsuit, including any appeals, is settled by the parties or finally resolved by court order. If the City elects to toll the effectiveness of the MOU, then (i) the Parties' obligations under Section 1 shall immediately be restored and be binding on the Parties for the remainder of the Term, subject to the tolling of the MOU, and (ii) the time period from the filing date of the lawsuit in the superior court through and including the date upon which the lawsuit is settled by the parties or finally resolved by court order, as applicable, shall not count against the Term of the MOU as set forth in Section 4.

C. If the Project Big Bird Approvals, or either of them, do not survive the settlement or final resolution of the lawsuit described in Section 3.B above, or if Developer chooses to abandon the Project Big Bird Approvals, then immediately upon the effectiveness of such settlement, final resolution, or abandonment, this MOU shall terminate without further action of the Parties, and the Parties shall have no further rights or obligations under this MOU.

4. Term

The Parties agree to be bound by this MOU commencing on the Effective Date set forth in the Preamble, and unless terminated earlier pursuant to Section 3 above, this MOU shall remain in effect until the date that is four (4) years from the Contribution Effective Date. The period of time from the Effective Date through the date that is four (4) years from the Contribution Effective Date is referred to herein as the Term. The Parties may extend the Term at any time prior to its expiration by an amendment pursuant to Section 5.

5. Amendment

No amendment or modification of this MOU will be binding unless it is in a writing duly authorized and signed by the Mayor or its designee, on behalf of City, and by the duly authorized representatives of Developer.

6. Default and Remedies.

Any failure by City or Developer to perform any material term or condition of this MOU, which failure continues for a period of thirty (30) days following written notice of such failure from the other Party, shall constitute a default under this MOU. Any notice given pursuant to the preceding sentence shall specify the nature of the alleged failure and, where appropriate, the manner in which such alleged failure may be satisfactorily cured. If the nature of the failure is such that it cannot reasonably be cured within such 30-day period, then commencement of the cure within such time period, and diligent prosecution of completion of the cure thereafter, shall be deemed to be a cure within such 30-day period.

No failure or delay in giving notice of a default shall constitute waiver of the default; provided, however, that the provision of notice and an opportunity to cure shall be a prerequisite to the enforcement of any obligations or any actions to correct the default.

The Parties hereby acknowledge that City would not have entered into this MOU if doing so would subject it to any risk of liability for money damages, either for a default, for any type of breach of this MOU, for repudiation of this MOU, or for any other actions with respect to its negotiation, preparation, implementation or application. The Parties further acknowledge that money damages and remedies at law are inadequate, and that specific performance shall be the sole and exclusive remedy available to the Parties for a default or breach of this MOU.

7. Signatures

The individuals executing this MOU represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this MOU on behalf of the respective legal entities of Developer and City. This MOU shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

8. Assignment and Successors

Developer may not assign its rights or obligations under this MOU, in part or in whole, without City's written consent. Notwithstanding the foregoing, Developer may assign its obligations hereunder to an "affiliate entity," as defined herein, without requiring prior written consent, provided that, concurrently with such assignment, assignee assumes all obligations under this MOU. For purposes of this MOU, the term "affiliate entity" means any entity in which (a) Developer holds at least fifty percent (50%) of the ownership of such entity, or (b) an entity that holds at least fifty percent (50%) of the ownership of Developer.

9. Indemnification

To the fullest extent permitted by law, Developer shall indemnify, defend and hold harmless City, and its elected and appointed councils, boards, commissions, officers, agents, employees, volunteers and representatives from any and all loss, liability, fines, penalties, forfeitures, costs and damages, and from any and all claims, demands and actions in law or equity (including any Legal Action as defined in Section 3 above, and including attorneys' fees and litigation expenses) (collectively, "Claims") by any Person or entity, arising or alleged to have arisen out of or in any way related to Developer's and City's approval and execution of this MOU. City shall timely notify Developer of any such Claims and Developer shall timely pay all costs incurred by City in defending any such Claims, and Developer shall be solely responsible to pay, in a timely manner and on City's behalf, any and all awards of money damages, attorney fees, and court costs against City.

10. Counterparts

This MOU may be executed in multiple counterparts, each of which shall be deemed an original, but all of which, together, shall constitute one and the same instrument. The Parties may also deliver executed copies of this MOU to each other by electronic mail (including PDF or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes. No Party may raise the use of any image transmission device or method or the fact that any signature was transmitted as an image as a defense to the enforcement of this MOU. At the request of either Party, the Parties will confirm signatures by signing and delivering an original document.

11. Independent Contractor Status

Developer is an independent contractor and is solely responsible for all acts of its employees, agents, or subcontractors, including any negligent acts or omissions. Developer is not City's employee and Developer shall have no authority, express or implied, to act on behalf of City as an agent, or to bind City to any obligation whatsoever, unless City provides prior written authorization to Developer.

12. Entire Agreement.

This MOU embodies the entire understanding between the Parties with respect to its subject

matter and can be changed only by an instrument in writing signed by the Parties.

THE PARTIES AGREE to this MOU as witnessed by the signatures below:

CITY:

Jenny Haruyama, City Manager

Dated: _____

Approved as to form:

Leticia Ramirez, City Attorney

Dated: _____

DEVELOPER:

PROLOGIS, L.P.

By: DocuSigned by: Ali Harandi 552BB3DC5D1E487...

Name: Ali Harandi

Title: Investment Officer

Exhibit 1

ORDINANCE _____

AN ORDINANCE OF THE CITY OF TRACY AMENDING THE MAXIMUM BUILDING HEIGHT AND THE MINIMUM BUILDING SETBACK IN THE NORTHEAST INDUSTRIAL SPECIFIC PLAN

WHEREAS, The Northeast Industrial Specific Plan establishes the development standards for properties within the Specific Plan area, and

WHEREAS, The amendment to the Northeast Industrial Specific Plan would increase the building height maximum to 125 feet and establish a building setback of 250 feet for buildings exceeding 60 feet in height, to be applicable only to industrial buildings on the project site located on the south side of Grant Line Road, between Chrisman Road and Skylark Way, and north of the future Paradise Road extension, and

WHEREAS, The project is exempt from CEQA pursuant to CEQA Guidelines Section 15162(a) and 15168(c)(2), which pertains to projects with a certified Environmental Impact Report (EIR) where the project does not propose substantial changes that will result in a major revision of the previous EIR. On May 8, 1996, the City of Tracy certified the Northeast Industrial EIR (SCH# 95102050). The project does not propose new significant changes to the environment that was not analyzed in the Northeast Industrial EIR, including the areas of traffic, air quality, utilities, and aesthetics. Therefore, no further environmental assessment is needed, and

WHEREAS, The Planning Commission considered this matter at a duly noticed public hearing held on October 28, 2020 and recommended that City Council amend the Tracy Municipal Code Sections 10.08.3560(c) and (d) regarding landscaping requirements for parking areas by a 4:1 vote, and

WHEREAS, The City Council held a duly noticed public hearing to consider the ordinance on November 10, 2020;

NOW THEREFORE, The Tracy City Council does ordain as follows:

SECTION 1. The Northeast Industrial Specific Plan, Building Floor Area Ratio and Height and Building Setbacks sections on page 24 are amended to read as follows:

"**Building Floor Area Ratio and Height**

Land Use	***Max. Floor Area Ratio***	***Max. Building Height***
General Commercial	0.35	46 ft.
Office	0.35	60 ft.
Light Industrial	0.50	60 ft. *except as noted below

* The maximum building height for Light Industrial uses is 60 feet, except in the area bounded by Grant Line Rd. to the north, Chrisman Rd. to the east, Skylark Way to the west, and Paradise Road to the south, where the maximum building height is 125 feet.

Building Setbacks

The following shall be the minimum building and parking setbacks required for all building types. Figure 14 illustrates these guidelines.

1. Building setback from any property line adjacent to a street or Caltrans right-of-way shall be 25 feet minimum. Rear and side yard building setbacks from property lines not adjacent to a street or Caltrans right-of-way shall be 15 feet minimum.
   Building setback from any property line for buildings exceeding 60 feet in height located in the area bounded by Grant Line Rd. to the north, Chrisman Rd. to the east, Skylark Way to the west, and Paradise Road is 250 feet minimum.
2. A 5 foot wide landscape setback is required along property lines not adjacent to a right-of-way. On the property lines perpendicular to the street frontage on industrial streets, the landscaped setback is only required to a point 150 feet onto the parcel from the street right-of-way or 50 feet back of building face, whichever is greater.
3. Parking setback from any property line along a public street or the Caltrans right-of-way for commercial land uses shall be 10 feet and for industrial uses shall be 15 feet.
4. Parking shall not be permitted within 10 feet of the building entry face of any commercial structure. In the event the building has an arcade or other shade structure along this frontage, the structure can be located within this required setback. Parking shall not be permitted within 15 feet of the office face or portion of a building. On industrial buildings, a 15 foot setback to the parking area shall be provided at building entries.
5. Commercial buildings shall be sited so as to create and enhance the streetscape. This can only be accomplished if all or a portion of the buildings are located near the street. On commercial sites of over 4 acres, at least one building must be located with a minimum setback from public-right-of-way to building face of 50 feet. On corner sites adherence to this requirement is encouraged on both frontages, however, only required on the major street frontage."

SECTION 2. Except as herein added or changed, the remaining sections of the Tracy Municipal Code not set forth above, shall remain in full force.

SECTION 3. If any section, subsection, sentence, clause or phrase of this Ordinance is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portions of this Ordinance.

SECTION 4. This Ordinance takes effect 30 days after its final passage and adoption.

SECTION 5. This Ordinance shall either (1) be published once in a newspaper of general circulation, within 15 days after its final adoption, or (2) be published in summary form and posted in the City Clerk's office at least five days before the Ordinance is adopted and

within 15 days after adoption, with the names of the Council Members voting for and against the Ordinance. (Gov't. Code §36933.)

* *

The foregoing Ordinance _____ was introduced at a special meeting of the Tracy City Council on the 10th day of November, 2020, and finally adopted on the _____ day of _____, 2020, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:

_____
MAYOR

ATTEST:

_____
CITY CLERK

RESOLUTION 2020-_____

APPROVING A DEVELOPMENT REVIEW PERMIT FOR AN APPROXIMATELY 99-FOOT TALL, 1,355,618 SQUARE FOOT INDUSTRIAL BUILDING AND ASSOCIATED SITE IMPROVEMENTS ON AN APPROXIMATELY 86-ACRE AREA SOUTH OF E. GRANT LINE ROAD, EAST OF SKYLARK WAY, AND WEST OF CHRISMAN ROAD (ASSESSOR'S PARCEL NUMBERS 250-020-93, 250-020-80, 250-020-81, AND 250-020-95)

WHEREAS, On May 26, 2020, the City received a development review permit application for an industrial project located on the south side of Grant Line Road, between Chrisman Road and Skylark Way, a site totaling approximately 86 acres and located within the Northeast Industrial Specific Plan area (Application No. D20-0017), and a specific plan amendment application to the Northeast Industrial Specific Plan to modify development standards which would permit the proposed project (Application No. SPA20-0005), and

WHEREAS, The development review permit application is a Tier 1 project that is subject to Planning Commission and City Council review in accordance with Tracy Municipal Code, Title 10, Article 30, and

WHEREAS, The project is exempt from CEQA pursuant to CEQA Guidelines Section 15162(a) and 15168(c)(2), which pertains to projects with a certified Environmental Impact Report (EIR) where the project does not propose substantial changes that will result in a major revision of the previous EIR. On May 8, 1996, the City of Tracy certified the Northeast Industrial EIR (SCH# 95102050). The project does not propose new significant changes to the environment that was not analyzed in the Northeast Industrial EIR, including the areas of traffic, air quality, utilities, and aesthetics. Therefore, no further environmental assessment is needed, and

WHEREAS, The Planning Commission conducted a public hearing to review and consider the development review permit application on October 28, 2020 and recommended approval of the project by a 4:1 vote, and

WHEREAS, The City Council conducted a public hearing to review and consider the development review permit application on November 10, 2020;

NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Tracy hereby approves development review permit D20-0017 for an approximately 1,355,618-square foot, 99-foot tall industrial building and associated parking, landscaping, and trucking areas on approximately 86-acres of property located south of Grant Line Road, east of Skylark Way, and west of Chrisman Road (Assessor's Parcel Numbers 250-020-93, 250-020-80, 250-020-81, and 250-020-95), subject to the conditions contained in Exhibit 1 and based on the following findings:

1) The proposal increases the quality of the project site, and enhances the property in a manner that therefore improves the property in relation to the surrounding area and the citizens of Tracy, because the proposed project improves the use and aesthetic quality of the currently undeveloped site, enhancing the property with a new building, decorative masonry walls, and generous landscaping improvements. The building is designed with varied façade articulation comprised of a combination of concrete and metal finishes of various colors and textures that provide visual interest to the large and tall building.

Though the building measures to approximately 99 feet at it tallest point, only two-thirds of the building are proposed at this height and is designed to substantially step back from the lower one-third of the building, which is proposed to be only be approximately 30 feet in height. This significant building articulation provides visual variety to the otherwise large building massing. The also building has changes in parapet wall heights and varied building façade depths that prevent visual monotony. The presence of vertical wavy metal textures and accent colors at the building corners and every few hundred lineal feet on the top half of the building break up the long, straight appearance of the building and provides an interesting contrast to the lower half of the building, which is comprised of concrete walls adorned with substantial glazing at the primary building entrance, several complementary colors and scorelines in horizontal manner. Because the building is taller than other buildings in the vicinity, it is set back several hundred feet from the public right-of-way, thereby reducing the effect of large building mass near public pedestrian sidewalks and roadways. The building is oriented such that trucking areas face away from the more heavily traveled arterial roadways, and all parking areas, truck docks and loading areas, and ground-mounted equipment will be screened from public view by decorative screen walls and dense landscape screens comprised of trees and large shrubs. The project site will also have large landscaped areas on the perimeters of the site, which soften public views of the tall building and further the aesthetic quality of the streetscapes. Additionally, a large landscaped area will be established at the northeast corner of the site, which provides an additional visual buffer between the industrial site and the intersection of Grant Line Road and Chrisman Road.

2) The proposal conforms to the City of Tracy General Plan, the Northeast Industrial Specific Plan, the City's Design Goals and Standards, any applicable Infrastructure Master Plans, City Standard Plans, and other City regulations.

* *

The foregoing Resolution 2020-_____ was adopted by the City Council of the City of Tracy on the 10th day of November, 2020, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:

_____
MAYOR

ATTEST:

_____
CITY CLERK

City of Tracy
Conditions of Approval
Project Big Bird
Application Number D20-0017

A. General Provisions and Definitions.

A.1. General. These Conditions of Approval apply to:

The Project: An approximately 1,355,618-square foot, 99-foot tall industrial building and associated parking, landscaping, and trucking areas

The Property: An approximately 86-acre site located south of Grant Line Road, east of Skylark Way, and west of Chrisman Road, Assessor's Parcel Numbers 250-020-93, 250-020-80, 250-020-81, and 250-020-95

A.2. Definitions.

a. "Applicant" means any person, or other legal entity, defined as a "Developer."

b. "City Engineer" means the City Engineer of the City of Tracy, or any other duly licensed Engineer designated by the City Manager, or the Development Services Director, or the City Engineer to perform the duties set forth herein.

c. "City Regulations" means all written laws, rules, and policies established by the City, including those set forth in the City of Tracy General Plan, the Tracy Municipal Code ordinances, resolutions, policies, procedures, the Northeast Industrial Areas Specific Plan, and the City's Design Documents (including the Standard Plans, Standard Specifications, and relevant Public Facility Master Plans).

d. "Development Services Director" means the Director of the City of Tracy Development Services Department, or any other person designated by the City Manager or the Development Services Director to perform the duties set forth herein.

e. "Conditions of Approval" shall mean the conditions of approval applicable to the Project, Application Number D20-0017. The Conditions of Approval shall specifically include all conditions set forth herein.

f. "Developer" means any person, or other legal entity, who applies to the City to divide or cause to be divided real property within the Project boundaries, or who applies to the City to develop or improve any portion of the real property within the Project boundaries. The term "Developer" shall include all successors in interest.

A.3. Compliance with submitted plans. Except as otherwise modified herein, the project shall be constructed in substantial compliance with the site, civil, elevation, building section, line of sight, and landscape plans, including colors and materials, received by the Development Services Department on October 5, 2020 to the satisfaction of the Development Services Director.

A.4. Payment of applicable fees. The applicant shall pay all applicable fees for the project, including, but not limited to, development impact fees, building permit fees, plan check

fees, grading permit fees, encroachment permit fees, inspection fees, school fees, or any other City or other agency fees or deposits that may be applicable to the project.

A.5. Compliance with laws. The Developer shall comply with all laws (federal, state, and local) related to the development of real property within the Project, including, but not limited to:

- the Planning and Zoning Law (Government Code sections 65000, et seq.)
- the California Environmental Quality Act (Public Resources Code sections 21000, et seq., "CEQA"),
- the Guidelines for California Environmental Quality Act (California Administrative Code, title 14, sections 1500, et seq., "CEQA Guidelines"),
- California Building Code, and
- California Fire Code

A.6. Compliance with City regulations. Unless specifically modified by these Conditions of Approval, the Developer shall comply with all City regulations, including, but not limited to, the Tracy Municipal Code (TMC), Standard Plans, the Northeast Industrial Areas (NEI) Specific Plan, and Design Goals and Standards.

A.7. Protest of fees, dedications, reservations, or other exactions. Pursuant to Government Code section 66020, including section 66020(d)(1), the City HEREBY NOTIFIES the Developer that the 90-day approval period (in which the Developer may protest the imposition of any fees, dedications, reservations, or other exactions imposed on this Project by these Conditions of Approval) has begun on the date of the conditional approval of this Project. If the Developer fails to file a protest within this 90-day period, complying with all of the requirements of Government Code section 66020, the Developer will be legally barred from later challenging any such fees, dedications, reservations or other exactions.

B. Development Services Department, Planning Division Conditions

Contact: Kimberly Matlock (209) 831-6430 kimberly.matlock@cityoftracy.org

B.1. Architecture. Prior to the approval of a building permit, the applicant submit detailed plans for the smokers' shelter to demonstrate that it will architecturally complement the main building in terms of design and color to the satisfaction of the Development Services Director.

B.2. Parking area. Before the approval of a building permit, the applicant shall submit the following to the satisfaction of the Development Services Director:

B.2.1 Site plans and construction details that demonstrate 12-inch wide concrete curbs along the perimeter of landscape planters where such planters are parallel and adjacent to vehicular parking spaces to provide access to vehicles without stepping into the landscape planters.

B.2.2 Detailed plans that demonstrate the parking stalls are striped in accordance with Standard Plan 154.

B.2.3 Detailed plans that demonstrate any sidewalk, landscape planters, or bio-retention areas perpendicular to parking stalls overhang up to 24 inches into the parking stall in place of wheel stops where feasible. Any landscape planter overhang may not be double-counted toward the required amount of parking area landscaping.

B.2.4 Bicycle parking spaces shall be provided in accordance with Tracy Municipal Code Section 10.08.3510.

B.2.5 Detailed plans that demonstrate a minimum of one foot candle throughout the parking area as defined in TMC Section 10.08.3450.

B.3. Landscaping & irrigation. Before the approval of a building permit, the applicant shall provide detailed landscape and irrigation plans consistent with the following to the satisfaction of the Development Services Director:

B.3.1. Said plans shall demonstrate compliance with the NEI Specific Plan and the Tracy Municipal Code Section 10.08.3560 for parking area landscaping. Said plans shall clearly delineate the property line and shall include a planting legend indicating, at minimum, the quantity, planting size, and height and width at maturity.

B.3.2. Each planter shall contain a combination of trees, shrubs, and live groundcover. Trees shall be a minimum of 24” box size, shrubs shall be a minimum size of 5 gallon, and groundcover shall be a minimum size of 1 gallon at planting. Landscaping shall be continuously maintained to prevent incidence of wildfire.

B.3.3. Where trees are planted ten feet or less from a sidewalk or curb, root barriers dimensioned 8 feet long by 24 inches deep shall be provided adjacent to such sidewalk and curb, centered on the tree.

B.3.4. Said plans shall demonstrate that the land to the south of reconstructed Paradise Road is landscaped and irrigated with a combination of trees, shrubs, and groundcover.

B.3.5. Landscape & Irrigation Maintenance. Prior to the issuance of a building permit for each phase, the Developer shall execute a two-year landscape and irrigation maintenance agreement and submit financial security, such as a performance bond, to ensure the success of all on-site landscaping for the term of the agreement. The security amount shall be equal to $2.50 per square foot of the landscaped area or equal to the actual labor and material installation cost of all on-site landscaping and irrigation for that phase.

B.4. Employee break areas. Before the approval of a building permit, the applicant shall submit plans that show locations and details for high-quality outdoor employee break

spaces. Such spaces shall be incorporated as part of site design and should include special paving, tables, benches, shade trees and other amenities that support employee events and serve as an informal gathering space and shall be designed to be used by anyone, e.g. not only those who smoke.

B.5. Fencing. No chain-link or vinyl fencing is permitted where visible from any public right-of-way, and no barbed wire, razor wire, or electric fence is permitted anywhere on site.

B.6. Screening utilities and equipment. Before the approval of a building permit, the applicant shall submit detailed plans that demonstrate the following:

B.6.1. Trash collection areas, such as trash and recycling compactors or traditional trash and recycling dumpsters shall be screened by structures or enclosures architecturally complementary of the main building to the satisfaction of the Development Services Director. Trash and recycling collection enclosures shall include a solid roof structure, solid metal doors, and solid walls sufficiently sized to fully screen the dumpsters. The enclosure, including the roof, shall be architecturally compatible with the buildings, which includes but is not limited to, design, materials, and colors. A six-inch concrete curb and/or bollards may be installed on the interior of the enclosure for the protection and durability of the enclosure walls. A building permit is required prior to construction of such enclosures for the evaluation of design and location to the satisfaction of the Development Services Director.

B.6.2. No roof mounted equipment, including, but not limited to, HVAC units, vents, fans, antennas, sky lights and dishes, whether proposed as part of this application, potential future equipment, or any portion thereof, shall be readily visible from any public right-of-way, which includes, but is not limited to, Grant Line Road, Chrisman Road, Skylark Way, Paradise Court, future Paradise Road, and the I-205 freeway. The plans shall demonstrate that such equipment is fully screened from view behind parapet walls to the satisfaction of the Development Services Director.

B.6.3. All vents, gutters, downspouts, flashing, and electrical conduits shall be internal to the structures and other ground-mounted, wall-mounted, or building-attached utilities, including bollards, shall be painted to match the color of the adjacent surfaces or otherwise designed in harmony with the building exterior to the satisfaction of the Development Services Director.

B.6.4. All PG&E transformers, phone company boxes, Fire Department connections, backflow preventers, irrigation controllers, and other on-site utilities, shall be vaulted or substantially screened from view behind structures or landscaping, to the satisfaction of the Development Services Director.

B.6.5. Truck loading areas, dock doors, and trash compactors shall be substantially screened from view from the public right-of-way, which includes, but is not limited to, Grant Line Road, Chrisman Road, Skylark Way, Paradise Court, and future Paradise Road, as shown in the plans. Landscape screening shall

be tall and dense enough to substantially screen to the top of trailers, dock doors, and trash compactors from public view. Where there are gaps between trees and beneath tree canopies, screen shrubs shall be planted to prevent views between tree trunks.

B.7. Signs. No business identification signs are approved with this development review permit. All business identification signs shall obtain a sign permit in accordance with the NEI Specific Plan and the Tracy Municipal Code.

B.8. Compliance with Mitigation Measures. Unless specifically modified by these Conditions of Approval, the Developer shall comply with all mitigation measures identified in the General Plan Environmental Impact Report certified on February 1, 2011 and the Northeast Industrial Concept Development Plan Environmental Impact Report certified on May 8, 1996.

B.9. Habitat conservation. Prior to issuance of any permits for ground disturbance, the applicant shall comply with the San Joaquin County Habitat Conservation Division and a signed copy of the Incidental Take Minimization Measures shall be submitted to the Engineering Division as verification of compliance.

C. Development Services Department, Engineering Division Conditions

Contact: Nanda Gottiparthy (925) 251-0100 nanda@sngassociates.com

C.1. General Conditions

Developer shall comply with the applicable sections of approved documents and/or recommendations of the technical analyses/ reports prepared for the Project listed as follows:

a) *Tracy NEI Phase 3 Traffic Analysis* – Traffic Memorandum prepared by Kimley-Horn Associates, dated October 16, 2020, and any subsequent updates. ("***Traffic Analysis***")

b) *Prologis Big Bird Tracy NEI Phase 3 G4+5 Project Sewer Collection System Hydraulic Capacity Analysis,* prepared by Blackwater Consulting Engineers, Inc., dated October 15, 2020, and any subsequent updates. ("***Wastewater Analysis***")

c) *Hydraulic Evaluation of Project Big Bird,* prepared by West Yost Associates Inc., dated August 12, 2020, and any subsequent updates. ("***Water Analysis***")

d) *Review of NEI Phase 3 Mass Grading for Stormwater Quality Requirements and Interim Runoff Detention Conditions,* prepared by Wood Rodgers, Inc., dated October 19, 2020, and any subsequent updates. ("***Storm Drain Analysis***")

e) *Stormwater Volume Management Options for Phase 1 of NEI Phase 3 Mass Grading,* prepared by Wood Rodgers, Inc., dated October 19, 2020, and any subsequent updates. ("***Interim Storm Drain Analysis***")

C.2. Grading Permit

All grading work shall require a Grading Plan. All grading work shall be performed and completed in accordance with the recommendation(s) of the Project's Registered Geotechnical Engineer. The City will not accept a Grading Permit application for the Project until Developer provides all documents related to said Grading Permit required by the applicable City Regulations and these Conditions of Approval, to the satisfaction of the City Engineer, including, but not limited to, the following:

C.2.1. Grading and Drainage Plans prepared on a 24" x 36" size 4-mil thick polyester film (mylar). Grading and Drainage Plans shall be prepared under the supervision of and stamped and signed by a Registered Civil Engineer.

C.2.2. Payment of the applicable Grading Permit fees which include grading plan checking and inspection fees, and other applicable fees as required by these Conditions of Approval.

C.2.3. All existing on-site water well(s), septic system(s), and leech field(s), if any, shall be abandoned or removed in accordance with the City and San Joaquin County requirements. Developer shall be responsible for all costs associated with the abandonment or removal of the existing well(s), septic system(s), and leech field(s) including the cost of permit(s) and inspection. Developer shall submit a copy of written approval(s) or permit(s) obtained from San Joaquin County regarding the removal and abandonment of any existing well(s), prior to the issuance of the Grading Permit.

C.2.4. Prior to the issuance of the Grading Permit, Developer shall submit to the Utilities Department (stephanie.hiestand@cityoftracy.org) one (1) electronic copy and one (1) hard copy of the Storm Water Pollution Prevention Plan (SWPPP) as submitted in Stormwater Multiple Applications and Reporting Tracker System (SMARTS) along with either a copy of the Notice of Intent (NOI) with the state-issued Wastewater Discharge Identification number (WDID) or a copy of the receipt for the NOI. After the completion of the Project, the Developer is responsible for filing the Notice of Termination (NOT) required by SWQCB, and shall provide the City, a copy of the completed Notice of Termination. Cost of preparing the SWPPP, NOI and NOT including the annual storm drainage fees and the filing fees of the NOI and NOT shall be paid by the Developer. Developer shall comply with all the requirements of the SWPPP, applicable Best Management Practices (BMPs) and the Multi-Agency Post-Construction Stormwater Standards Manual adopted by the City in 2015 and any subsequent amendment(s).

C.2.5. Developer shall provide a PDF copy of the Project's Geotechnical Report signed and stamped by a Registered Geotechnical Engineer. The technical report must include relevant information related to soil types and characteristics, soil bearing capacity, compaction recommendations, retaining wall recommendations, if necessary, paving recommendations, slope recommendations, and elevation of the highest observed groundwater level.

C.2.6. Two (2) sets of Hydrologic and Storm Drainage Calculations for the design of the on-site and off-site storm drainage system.

C.2.7. Developer shall provide a copy of the approved Incidental Take Minimization Measures (ITMM) habitat survey [San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)] from San Joaquin Council of Governments (SJCOG).

C.2.8. Developer shall provide a copy of the approved Air Impact Assessment (AIA) with an Indirect Source Review (ISR) and Dust Control from San Joaquin Valley Air Pollution Control District (SJVAPCD).

C.2.9. If required, Construction Easements or agreements with the owners of the adjacent properties shall be obtained prior to the start of any construction encroaching onto the adjacent properties.

C.2.10. If at any point during grading that the Developer, its contractor, its engineers, and their respective officials, employees, subcontractor, and/or subconsultant exposes/encounters/uncovers any archeological, historical, or other paleontological findings, the Developer shall address the findings as required per the General Plan Cultural Resource Policy and General Plan EIR; and subsequent Cultural Resource Policy or mitigation in any applicable environmental document.

C.3. Encroachment Permit - No applications for encroachment permit will be accepted by the City as complete until the Developer provides all relevant documents related to said encroachment permit required by the applicable City Regulations and these Conditions of Approval, to the satisfaction of the City Engineer, including, but not limited to, the following:

C.3.1. Improvement Plans prepared on a 24” x 36” size 4-mil thick polyester film (mylar), if necessary that incorporate all the requirements described in these Conditions of Approval. Improvement Plans shall be prepared under the supervision of, and stamped and signed by a Registered Civil, Traffic, Electrical, Mechanical Engineer, and Registered Landscape Architect for the relevant work.

C.3.2. Signed and stamped Engineer’s Estimate that summarizes the cost of constructing all the public improvements shown on the Improvement Plans.

C.3.3. Signed and notarized Offsite Improvement Agreement (OIA) and Improvement Security, to guarantee completion of the identified public improvements that are necessary to serve the Project as required by these Conditions of Approval. The form and amount of Improvement Security shall be in accordance with Section 12.36.080 of the Tracy Municipal Code (TMC), and the OIA. The Developer’s obligations in the OIA shall be deemed to be satisfied upon City Council’s acceptance of the public improvements and release of the Improvement Security.

C.3.4. If required, signed and notarized Deferred Improvement Agreement (DIA) and Improvement Security, to allow deferment of completion of improvements as required by these Conditions of Approval. The form and amount of Improvement Security shall be in accordance with the DIA and Section 12.36.080 of the TMC. The Developer’s obligations in the DIA shall be deemed to be satisfied upon the release of the Improvement Security.

C.3.5. Payment of applicable fees required by these Conditions of Approval and City Regulations, including but not limited to, plan checking, grading and encroachment permits and agreement processing, construction inspection, and testing fees. The engineering review fees will be calculated based on the fee rate adopted and updated by the City Council. Developer shall submit payment in the form of a check for the aforementioned fees.

C.3.6. Traffic Control Plan - Prior to starting the work for any work within City's right-of-way, the Developer shall submit a Traffic Control Plan (TCP). TCP can be split among the different construction phases. TCP will show the method and type of construction signs to be used for regulating traffic at the work areas within these streets. TCP shall conform to the Manual on Uniform Traffic Control Devices as amended by the State of California, latest edition (MUTCD-CA). TCP shall be prepared under the supervision of, signed and stamped by a Registered Civil Engineer or Registered Traffic Engineer.

C.3.7. Access and Traffic Circulation to Existing Businesses/Residents - Developer shall take all steps necessary to plan and construct site improvements such that construction operations do not impact safety and access (including emergency vehicles) to the existing businesses and residents throughout the duration of construction. Developer shall coordinate with the owners and cooperate to minimize impacts on existing businesses. All costs of measures needed to provide safe and functional access shall be borne by the Developer.

C.3.8. No street trench shall be left open, uncovered, and/or unprotected during night hours and when the Developer's contractor is not performing construction activities. Appropriate signs and barricades shall be installed on the street and on all trenches during such times. If the Developer or its contractor elects to use steel plates to cover street trenches, said steel plates will be skid-resistance, and shall be ramped on all sides. Ramps will be a minimum two-foot wide and will run the entire length of each side.

C.4. <u>Improvement Plans</u>:

Improvement Plans shall contain the design, construction details and specifications of all improvements necessary to serve the Project. The Improvement Plans shall be drawn on a 24" x 36" size 4-mil thick polyester film (mylar) and shall be prepared under the supervision of, and stamped and signed by a Registered Civil, Traffic, and Registered Landscape Architect for the relevant work. The Improvement Plans shall be completed to comply with City Regulations, City Design Standards, Standard Plans and Specifications, these Conditions of Approval, and the following requirements:

C.4.1. The Improvement Plans, including the Grading and Drainage Plans, shall be prepared in accordance with the City's Subdivision Ordinance and Design Standards. The improvement plans shall be prepared to specifically include, but not be limited to, the following items:

a. All existing and proposed utilities such as domestic water line, irrigation service, fire service line, storm drain, and sanitary sewer, including the size and location of the pipes.

b. All supporting engineering calculations, materials information or technical specifications, cost estimate, and technical reports.

c. Developer shall provide a PDF copy of the Project's Geotechnical Report signed and stamped by a Registered Geotechnical Engineer.

d. The Project's on-site drainage connections to City's storm drainage system and on-site storm water treatment as approved by the City Engineer. Improvement Plans to be submitted with the hydrology and storm drainage calculations for the sizing of the on-site storm drainage system.

C.4.2. Grading and Drainage Plans

Site Grading

a. Include all proposed erosion control methods and construction details to be employed and specify materials to be used.

b. All grading work shall be performed and completed in accordance with the recommendation(s) of the Project's Geotechnical Engineer. A copy of the Project's Geotechnical Report must be submitted with the Grading and Storm Drainage Plans.

c. When the grade differential between the Project Site and adjacent property(s) exceeds 12 inches, a reinforced concrete or masonry block, or engineered retaining wall is required for retaining soil. The Grading Plan shall show construction detail(s) of the retaining wall or masonry wall. The entire retaining wall and footing shall be constructed within the Project Site. Structural calculations shall be submitted with the Grading and Storm Drainage Plans.

d. The Developer shall be responsible for obtaining permission from owner(s) of the adjacent and affected property(s) for grading beyond the property boundaries. If required, slope easement must be recorded prior to the issuance of the final building certificate of occupancy.

Storm Drainage

e. The Developer shall design and install storm drain lines and connection to the City's NEI Drainage System, per the ***Storm Drain Analysis*** and City Regulations.

f. Grading for the site shall be designed such that the Project's storm water can overland release to a public street that has a functional storm drainage system with adequate capacity to drain storm water from the Project Site, in the event that the on-site storm drainage system fails or it is clogged. The storm drainage release point is recommended to be at least 0.70 foot lower than the building finish floor elevation and shall be improved to the satisfaction of the City Engineer.

g. Developer shall submit hydrology and hydraulic calculations and improvement plans for storm drain lines within proposed Paradise Road alignment and Chrisman Road.

Crate and Barrel Temporary Retention Basins 1A and 1B

h. As noted in the ***Interim Storm Drain Analysis*** TM, if Detention Basin NEI and/or other downstream storm drain facilities per the Storm Drainage Master Plan are not in service when the Crate & Barrel Temporary Retention Basins 1A and 1B are filled in as part of the NEI Phase 3 Mass Grading project, the Developer shall provide an additional 35 acre-feet of storage in the NEI Retention Basin for interim temporary Retention Basin(s). The Temporary Retention Basin(s) shall be designed in accordance with City Regulations and Standards. The Temporary Retention Basin(s) shall be designed to retain storm water run-off from the Project resulting from 200% of the 10-year, 48-hour storm event in compliance with Sections 5.06 and 5.07 of City of Tracy Design Standards.

   (i) Alternatively, if the Developer reaches an agreement with the Pescadero Reclamation District, a 1,75 cfs pump shall be provided to discharge into Pescadero Reclamation District facilities.

   (ii) The Developer shall comply with the requirements of the *Indemnification Obligation for Interim Storm Drainage* Exhibit.

Temporary Drainage System – Onsite Retention Basin(s)

i. If Detention Basin NEI and/or other downstream storm drain facilities per the Storm Drainage Master Plan are not in service when the project is constructed, then the Developer may construct as interim onsite Temporary Retention Basin(s). The Temporary Retention Basin(s) shall be designed in accordance with City Regulations and Standards. The Temporary Retention Basin(s) shall be designed to retain storm water run-off from the Project resulting from 200% of the 10-year, 48-hour storm event in compliance with Sections 5.06 and 5.07 of City of Tracy Design Standards.

j. The Developer shall provide a geotechnical investigation with respect to the Temporary Retention Basin(s) that validates percolation rates for the subsurface soils at and below the bottom of the basin are acceptable.

k. Developer shall be responsible for maintenance of onsite Temporary Retention Basin(s) until the above-mentioned downstream drainage facilities are installed and accepted by the City. The Developer shall sign an improvement agreement (Deferred Improvement Agreement), to assure completion of the Developer's obligation to repair and maintain said basin(s) while the storm drainage retention basin is in service and then to modify/remove Temporary Retention Basin(s) and connect on-site storm drainage system to the master plan facilities when constructed (by others) and operational. The scope of improvements and security required with the Deferred Improvement Agreement will be determined during the improvement plan review.

l. Excavated materials shall be kept within the basin site. If the excavated materials are removed from the basin site, the Subdivider shall post cash security equivalent to the cost of import backfill materials, hauling to the basin site, spreading, compacting and re-grading the basin site. If excavated materials are retained on-site, the stockpile of excavated materials shall not be

higher than 8 feet and slope should not be steeper than 1:1.

m. A metal fence and access gate shall be installed by the Subdivider to enclose the basin site.

n. The bottom of the temporary on-site storm drainage retention basin(s) shall be 5 feet above the observed highest groundwater elevation at the basin site, or as approved by the City Engineer. The Geotechnical Report shall also indicate the observed highest groundwater elevation at the basin site.

o. The Developer shall record a temporary storm drainage easement to grant rights to the City to access the temporary storm drainage retention basin(s) for any necessary emergency repair or maintenance work the City may have to perform within the basin site. The temporary access easement shall include a sunset clause that the easement will automatically be terminated at such time as the above-referenced permanent storm drainage improvements are completed.

Stormwater Treatment:

p. As detailed in the ***Storm Drain Analysis***, the public street systems serving the project site will need to include storm water quality treatment provisions. Storm water runoff from Skylark Way, Paradise Road, and Chrisman Road shall be treated in conformance with the Multi-Agency Post-Construction Stormwater Standards Manual, dated June 2015.

q. Calculations related to the design and sizing of on-site storm water treatment facilities must be submitted with the Grading and Storm Drainage Plans and approved by City's Stormwater Coordinator prior to issuance of the Grading Permit for the Project.

r. The design and construction details of the Project's onsite storm drainage system and treatment facilities shall meet City Regulations and shall comply with the applicable requirements of the Multi-Agency Post-Construction Stormwater Standards Manual, dated June 2015, and any subsequent amendments.

s. Prior to the issuance of the building certificate of occupancy, the Developer shall submit a signed and notarized Stormwater Treatment Facilities Maintenance Agreement (STFMA) as a guarantee for the performance of Developer's responsibility towards the repair and maintenance of on-site storm water treatment facilities.

C.4.3. Sanitary Sewer

a. Prior to the issuance of Building Permit for the Project, Developer shall submit improvement plans and secure approval of plans from the City's Building Division, for the design of on-site sewer improvements. The Developer shall design and install sanitary sewer facilities including the Project's sewer connection in accordance with City Regulations and utility improvement plans approved by the City Engineer.

b. As shown in the ***Wastewater Analysis***, sewage from the project shall ultimately connect to the existing 18" sewer line in the Chrisman Road extension north of Grant Line Road.

c. The Developer is responsible for the cost of installing the Project's sanitary sewer connection, including but not limited to, replacing asphalt concrete pavement, reconstructing curb, gutter and sidewalk, restoring pavement marking and striping, and other improvements that are disturbed as a result of installing the Project's sanitary sewer connection.

d. The City's responsibility to maintain sewer lateral is from the onsite sewer manhole or sewer cleanout at the right-of-way line/property line to the point of connection with the sewer main.

C.4.4. Water System

a. Developer shall comply with the recommendations of the ***Water Analysis***.

b. For water line in Paradise Road, Developer shall remove the existing 12-inch water line in the private access Paradise Road and install the new 12-inch water main in the realigned Paradise Road. (Upsizing of the existing 8-inch water main in Paradise Road cul-de-sac is recommended.) Developer shall not receive any fee credits or reimbursements for this work.

c. During the construction of the Project, the Developer is responsible for providing water infrastructure (temporary or permanent) capable of delivering adequate fire flows and pressure appropriate to the various stages of construction and as approved by the City of Tracy Fire Code Official.

d. Interruption to the water supply to the existing businesses and other users will not be allowed to facilitate construction of improvements related to the Project. The Developer shall be responsible for notifying business owner(s) and users, regarding construction work. The written notice, as approved by the City Engineer, shall be delivered to the affected residents or business owner(s) at least 72 hours before start of work. Prior to starting the work described in this section, the Developer shall submit a Work Plan acceptable to the City that demonstrates no interruptions to the water supply, and Traffic Control Plan to be used during the installation of the offsite water mains and connections.

e. Domestic and Irrigation Water Services – The Developer shall design and install domestic and irrigation water service connection, including a remote-read water meter (the water meter to be located within City's right-of-way) and a Reduced Pressure Type back-flow protection device in accordance with City Regulations. The domestic and irrigation water service connection(s) must be completed before the final inspection of the building. The City shall maintain water lines from the water meter to the point of connection with the water distribution main (inclusive) only. Repair and maintenance of all on-site water lines, laterals, valves, fittings, fire hydrant and appurtenances shall be the responsibility of the Developer.

f. All costs associated with the installation of the Project's water connection(s) including the cost of removing and replacing asphalt concrete pavement,

pavement marking and striping such as crosswalk lines and lane line markings on existing street or parking area(s) that may be disturbed with the installation of the permanent water connection(s), or domestic water service, and other improvements shall be paid by the Developer.

g. Fire Service Line – Location and construction details of fire service line including fire hydrant(s) that are to serve the Project shall be approved by the South San Joaquin County Fire Authority Fire Marshal. Prior to the approval of the Improvement Plans by the City Engineer, the Developer shall obtain written approval from the Fire Marshal for the design, location and construction details of the fire service connection to the Project, and for the location and spacing of fire hydrants that are to be installed or planned to serve the Project.

C.4.5. Roadway Improvements on Grant Line Road

Prior to issuance of the temporary or final certificate of occupancy, the Developer shall complete construction of improvements on Grant Line Road and driveways in compliance with recommendations in the ***Traffic Analysis***, and satisfy applicable requirements specified in these Conditions of Approval and City Regulations.

a. Grant Line Road is classified as a 4-lane major arterial with median in the Tracy Transportation Master Plan (TMP). The Developer shall remove and replace the existing sidewalk along the entire frontage of the Property on Grant Line Road with a 10-foot wide Class I Bikeway and a 7-foot wide landscape strip between cub & gutter and new Class I Bikeway.

b. The Developer shall design and install improvements to construct the sidewalk/Class I Bikeway along the full frontage of the Project on Grant Line Road, install project driveways, and modify striping on Grant Line Road for the full frontage of the Project. The improvement plans shall include all improvements and striping of Grant Line Road required to safely transition to the existing roadway improvements east and west of the Project Limits.

(iii) The roadway improvements to be constructed with this Project shall include, but are not limited to, concrete curb, gutter and sidewalk, accessible ramps, asphalt concrete pavement, signing and striping, storm drains, catch basins, fire hydrants, traffic signal, LED street lights, landscape with automatic irrigation system, undergrounding of overhead utilities, and other improvements as determined by the City Engineer that are necessary for a safe transition from a newly improved street to existing street sections on the east and west ends.

(iv) The roadway improvements must be designed and constructed by the Developer to meet the applicable requirements of the latest edition of the California Department of Transportation Highway Design Manual (HDM) and the California Manual of Uniform Traffic Control Devices (MUTCD), the applicable City Regulations, and these Conditions of Approval. Design and construction details of the Offsite Roadway Improvements must be shown on the Improvement Plans.

(v) Upon completion of street improvements on Grant Line Road, including overlay at utility cuts as required per these Conditions, the Developer shall slurry seal the entire street width for the project frontage prior to restriping.

(vi) The frontage improvements on Grant Line Road are Developer's Responsibility and are therefore not eligible for any fee credits.

(vii) The Developer shall take all steps necessary to plan and construct site improvements such that construction operations do not impact safety and access (including emergency vehicles) to the existing businesses, farms, and residences throughout the duration of construction. Developer shall coordinate with the owners and cooperate to minimize impacts. All costs of measures needed to provide safe and functional access shall be borne by the Developer.

c. Developer shall dedicate 10-foot wide Public Utility Easement for the full frontage of the Project on Grant Line Road.

C.4.6. Chrisman Road

Chrisman Road is classified as a 6-lane parkway in the Tracy Transportation Master Plan (TMP). North of Paradise Road, the existing portion of Chrisman Road between Grant Line Road and Paradise Road, adjacent to the project has been constructed approximately on the eastern half of the future roadway and the widened curb returns at the intersections. The subject roadway will be widened toward the project site.

a. The existing right-of-way along the west side of Chrisman Road is 30', measured from the Section Line/centerline of Chrisman Road. The Developer shall dedicate an additional 64' feet of right-of-way along the frontage of the Property on Chrisman Road to widen the existing street section to a 6-lane Parkway with a median and a minimum right-of-way width of 134' feet. (Near the intersection with Paradise Road, 73' of right-of-way dedication will be required to provide an overall right-of-way of 143' total width to accommodate the proposed dedicated right turn lane.)

(i) The Developer will be eligible to receive transportation impact fee credits for costs of widening the portion of Chrisman Road that are the City's responsibility. (City's responsibility is three southbound travel lanes and median; Developer's responsibility is landscape planter and Class 1 Bikeway along project frontage and dedicated right turn lane at Chrisman Road/Paradise Road intersection.)

(ii) The roadway improvements to be constructed with this Project shall include, but are not limited to, concrete curb, gutter and sidewalk, accessible ramps, asphalt concrete pavement, signing and striping, storm drains, catch basins, fire hydrants, LED street lights, landscape with automatic irrigation system, undergrounding of overhead electric line and other improvements as determined by the City Engineer that are necessary for a safe transition from a newly improved street to existing street sections on the north and south ends.

(iii) The Chrisman Road/Grant Line Road intersection shall be reconfigured to have one left turn, two through lands, and one right turn lane for the northbound approach, and one left turn, two through lanes, and one right turn lane for the southbound approach.

(iv) The Chrisman Road/Paradise Road intersection shall be reconfigured to have one left turn, two through lands, and one shared through/right turn lane turn lane for the northbound approach, and one left turn, three through lanes, and one right turn lane for the southbound approach.

(v) The striping plan for Chrisman Road shall show lane drops and/or lane merge to transition from three southbound travel lanes for the segment between Grant Line Road to Paradise to one southbound lane for the segment south of Paradise Road.

b. Overhead electric line along Chrisman Road shall be placed in an underground facility on west side of Chrisman Road.

C.4.7. <u>Paradise Road</u>

Paradise Road west of Chrisman Road currently ends at a cul-de-sac with a private drive aisle, public access easement extending west to Skylark Way. Proposed Paradise Road extension will be designed as an Industrial Street with TWLTL.

a. The alignment for the proposed Paradise Road extension will be located approximately 200’ south of the existing private drive aisle intersection at Skylark Way.

b. Paradise Road right-of-way shall accommodate the TMP Industrial Street with Two-way Left Turn Lane (TWLTL). The roadway improvements to be constructed with this Project shall include, but are not limited to, concrete curb, gutter and sidewalk, accessible ramps, asphalt concrete pavement, signing and striping, storm drains, catch basins, fire hydrants, LED street lights, landscape with automatic irrigation system, and other improvements as determined by the City Engineer that are necessary for a safe transition from a newly improved street to existing street sections at Chrisman Road and at Skylark Way.

c. The existing cul-de-sac of Paradise Road will need to be reconstructed and realigned as a through street. The existing Crate and Barrel driveway on the south side of the road will need to be modified accordingly. Sight triangles shall be provided for new driveway locations for Crate and Barrel.

d. Developer shall submit an Irrevocable Offer of Dedication of right-of-way for Paradise Road between Chrisman Road and Skylark Way within 30 days from approval of the Offsite Improvement Agreement.

e. Developer shall dedicate 10-foot wide Public Utility Easement for the full frontage of the Project on Paradise Road.

f. The Developer shall be responsible for all design and construction costs related to improvements on Paradise Road extension.

C.4.8. Skylark Way

Skylark Way located on west side of proposed building is an existing TMP Industrial Street with a TWLTL. This Industrial standard roadway will be extended approximately 200' to the south with the proposed Paradise Road extension.

a. The roadway improvements to be constructed with this project shall include, but are not limited to, approximately 20' widening of existing Skylark Way from center line towards east side, concrete curb, gutter and sidewalk, accessible ramps, asphalt concrete pavement, signing and striping, landscape with automatic irrigation system and other improvements as determined by the City Engineer.

b. Skylark Way will be super-elevated to slope towards the curb and gutter and existing infiltration planter located on the west side of Skylark Way.

c. The developer shall be responsible for all design and construction costs related to improvements on Skylark Way.

C.4.9. Project Driveways:

The Developer shall install six driveways to serve the site in accordance with the recommendations of the "*Traffic Analysis"* and City Regulations. Two driveways will be constructed along Skylark Way, three driveways will be constructed on Grant Line Road, and one driveway will be constructed along Chrisman Way.

a. Project Driveway 1: The southerly driveway on Skylark Way (Driveway 1) shall be designed to operate as a full access, Side Street Stop Control (SSSC) for STAA Truck and Trailer traffic only. The driveway design shall include sight distance triangles for the driveway entrance.

b. Project Driveway 2: The northerly driveway on Skylark Way, Project Driveway 2, shall be a full access, passenger vehicle access only driveway. Traffic control shall be Side Street Stop Control. The driveway should be located approximately 420' south of Grant Line Road (Skylark Way Station 112+00±) to allow left turns to access the site using the two-way left turn lane.

c. Project Driveway 3: The westerly driveway to the site from Grant Line Road shall be a Right In/Right Out, SSSC driveway for passenger vehicles only.

d. Project Driveway 4: The middle driveway to the site from Grant Line Road shall aligned with the primary access driveway serving the Tracy Warehouse property on the north side of Grant Line Road (1547 E. Grant Line Road). Project Driveway 4 shall be a full access signalized driveway, designed to operate as a joint primary access for this Project and the Tracy Warehouse property. Certain median modifications identified in the Traffic Analysis recommendations and the installation of a traffic signal will be required to allow full access traffic movements at this location for both projects.

(i) The Developer shall design and install the traffic signal for Driveway 4 prior to issuance of temporary or final Certificate of Occupancy for the Project.

The Developer shall pay for all costs relating to design, construction and inspection for the traffic signal.

(ii) The Tracy Warehouse property developer has paid Traffic Signal In-Lieu Fees to the City of Tracy in the amount of $85,000 for his share of the cost of the proposed traffic signal; the Prologis NEI Phase 3 Property Developer shall receive this amount from the City upon completion of the Traffic Signal installation.

(iii) The cost of modifying the median island per the Traffic Analysis recommendations will be the responsibility of the Developer.

(iv) The Developer shall dedicate required easements for maintenance access of the on-site traffic signal loops and associated traffic signal equipment.

(v) The Developer shall enter into an Off-site Improvement Agreement and post required security to guarantee installation of the traffic signal.

e. Project Driveway 5: The easterly driveway entrance to the site from Grant Line Road shall be located approximately 500 feet west of the intersection of Chrisman Road and Grant Line Road; this driveway shall be designed and constructed to operate as a "Right-in / Right-out" SSSC.

f. Project Driveway 6: Driveway 6 will be located approximately 650 feet south of the Grant Line Road/Chrisman Road intersection and approximately 700 feet north of the Chrisman Road/Paradise Road intersection. This driveway shall be designed as a Right-in/Right-out SSSC driveway for both passenger vehicles and Trucks/trailers.

C.4.10. Offsite Improvements

a. MacArthur Drive/Grant Line Road Intersection. As noted in the ***Traffic Analysis***, the MacArthur Drive/Grant Line Road intersection shall be modified to add a west bound right-turn lane with an overlap and associated traffic signal modification to optimize the cycle length. Developer shall design and construct intersection improvements.

(i) As noted in the ***Traffic Analysis***, the Project's fair share of the intersection improvements for the MacArthur Drive/Grant Line Road intersection is 44.64%: Developer shall request formation of Benefit Assessment District for reimbursement of costs in excess of the Project's Fair Share obligation as identified in the ***Traffic Analysis***.

b. Chrisman Road/Paradise Road Intersection. In the Cumulative Condition, the Chrisman Road/Paradise Road intersection will be converted from an AWSC to a signalized intersection.

(i) As noted in the ***Traffic Analysis***, the Project's fair share of the signal cost is 8.99%; Developer shall pay Fair Share costs as identified in the ***Traffic Analysis***.

c. Chrisman Road/Eleventh Street Intersection. In the Cumulative Condition, the Chrisman Road/Eleventh Street intersection will be modified to add a second westbound left turn lane.

(i) As noted in the ***Traffic Analysis***, the Project's fair share of intersection improvements cost is 3.29%; Developer shall pay Fair Share costs as identified in the ***Traffic Analysis***.

C.4.11. Joint Utility Trench Plans:

The Developer shall submit Joint Utility Trench plans for the installation of electric, gas, telephone and TV cable main and service lines that are necessary to be installed to serve the Project. These utilities shall be installed within the PUE.

a. Overhead utilities along the frontage of the project (with the exception of the high-voltage transmission lines with voltages greater than 34.5 KV) shall be placed in an underground facility in accordance with Tracy Municipal Code Chapter 11.08.

b. Overhead electric lines along Chrisman Road shall be placed in an underground facility on east side of building

c. The Developer shall submit Joint Trench Utility improvement plans for the installation of new electric, gas, telephone and TV cable lines to serve the Project. These utilities shall be installed within the 10-foot wide Public Utility Easement (PUE) that will be offered for dedication to the City.

C.4.12. Street Cut(s):

When street cuts are made for installation of utilities, the Developer is required to install 2-inch thick asphalt concrete overlay with reinforcing fabric at least 25 feet from all sides and for the entire length of the utility trench. A 2-inch deep grind on the existing asphalt concrete pavement will be required where the asphalt concrete overlay will be applied and shall be uniform thickness to maintain current pavement grades, cross and longitudinal slopes. The limits of the 2-inch asphalt concrete overlay shall conform to Section 3.14 of the 2008 Design Standards.

C.4.13. Street Repairs:

The Developer shall be responsible for any repairs or reconstruction of street pavement, curb, gutter and sidewalk and other public improvements along the frontage of the Project along Grant Line Road, if determined by the City Engineer to be in poor condition or damaged by construction activities related to the Project.

C.4.14. Offsite Improvement Agreement:

In order to guarantee completion of the Offsite Roadway Improvements, the Developer is required to enter into an Offsite Improvement Agreement (OIA) with the City and post improvement security in the amounts approved by the City Engineer, prior to the Encroachment Permit. The OIA requires authorization from the City Council. The Developer shall pay applicable engineering review fees such as plan checking, agreement and permit processing, testing, and construction inspection fees based on current charge rate and as required by these Conditions of Approval.

C.5. Building Permit:

No building permit within the Project boundaries will be approved by the City until the Developer demonstrates, to the satisfaction of the City Engineer, compliance with all required Conditions of Approval, including, but not limited to, the following:

C.5.1. Payment of the applicable Master Plan and Northeast Industrial Development Impact Fees as applicable to this project.

C.5.2. Payment of San Joaquin County Facilities Fees as required in Chapter 13.24 of the Tracy Municipal Code, and these Conditions of Approval.

C.5.3. Payment of the Regional Traffic Impact Fees (RTIF) as required in Chapter 13.32 of the Tracy Municipal Code and these Conditions of Approval.

C.5.4. Payment of additional City and County fees as required by the Tracy Municipal Code and as applicable to this project.

C.5.5. Submit a signed and notarized Grant Deed for the dedication of the necessary right-of-way on Chrisman Road, Paradise Road, and Skylark Way

C.5.6. Submit a signed and notarized Grant of Easement for the dedication of the necessary traffic detecting loops easement and associated improvements.

C.6. Acceptance of Public Improvements:

Public improvements will not be accepted by the City Council until after the Developer completes construction of the relevant public improvements, and also demonstrates to the City Engineer satisfactory completion of the following:

C.6.1. Correction of all items listed in the deficiency report prepared by the assigned Engineering Inspector relating to public improvements subject to City Council's acceptance.

C.6.2. Certified "As-Built" Improvement Plans (or Record Drawings). Upon completion of the construction by the Developer, the City shall temporarily release the originals of the Improvement Plans to the Developer so that the Developer will be able to document revisions to show the "As Built" configuration of all improvements.

C.6.3. Planting materials dedicated to the City conform to the 90-day "Maintenance and Plant Establishment" period in accordance with paragraph 308.07 of the City's Standard Specifications.

C.7. Temporary or Final Building Certificate of Occupancy:

No Temporary or Final Building Certificate of Occupancy will be issued by the City until the Developer provides reasonable documentation, which demonstrates, to the satisfaction of the City Engineer, that:

C.7.1. The Developer has satisfied all the requirements set forth in Condition C.6, above.

C.7.2. Prior to issuance of the Certificate of Occupancy for the project, the Developer shall grant access rights to the City for the use, operation, repair, and maintenance of traffic detecting loops, wires, conduits, and pull boxes that will be located within the Property. The Developer shall submit a signed and notarized Grant of Easement and provide legal description and plat map that describes the easement

area. The Developer shall pay for the cost of dedicating easement and preparing the legal description and plat map.

C.7.3. The Developer has completed construction of all required public facilities for the building for which a certificate of occupancy is requested and all the improvements required in these Conditions of Approval. Unless specifically provided in these Conditions of Approval, or some other applicable City Regulations, the Developer shall use diligent and good faith efforts in taking all actions necessary to construct all public facilities required to serve the Project, and the Developer shall bear all costs related to construction of the public facilities (including all costs of design, construction, construction management, plan check, inspection, and contingency).

C.8. Improvement Security:

The Developer shall provide improvement security for all public facilities, as required by the Offsite Improvement Agreement, and these Conditions of Approval. The form of the improvement security may be a surety bond, letter of credit or other form in accordance with section 12.36.080 of the TMC and the Development Agreement. The amount of improvement security shall be as follows:

C.8.1. Faithful Performance (100% of estimated cost of constructing the public facilities),

C.8.2. Labor & Materials (100% of estimated cost of constructing the public facilities), and

C.8.3. Warranty (10% of estimated cost of constructing the public facilities)

C.9. Release of Improvement Security:

Improvement Security(s) described herein shall be released to the Developer after City Council's acceptance of public improvements, and after the Developer demonstrates, to the satisfaction of the City Engineer, compliance of these Conditions of Approval, and completion of the following:

C.9.1. Improvement Security for Faithful Performance, Labor & Materials, and Warranty shall be released to Developer in accordance with Section 12.36.080 of the TMC.

C.9.2. Written request from Developer and a copy of recorded Notice of Completion

C.10. Special Conditions

C.10.1. All streets and utilities improvements within City's right-of-way shall be designed and constructed in accordance with City Regulations, and City's Design documents including the City's Facilities Master Plan for storm drainage, roadway, wastewater and water adopted by the City, or as otherwise specifically approved by the City.

C.10.2. If a tile drain system (irrigation system installed decades ago by farmers or irrigation districts) exists within the Project that also runs to the adjacent properties, the Developer shall coordinate with the owners of the neighboring properties for the relocation of affected tile drains, installation of interceptors and reconnecting to the outfall system. The Developer is fully responsible for any damage, repair and maintenance from the Project's activities including but not limited to all type of construction, the weight of the building and vehicular movements to existing tile drain system within the Project. The

Developer shall indemnify, defend, and hold harmless the City (including its elected officials, officers, agents, and employees) from and against any and all claims, demands, damages, liabilities, costs, and expenses (including court costs and attorney's fees) resulting from or arising out of merely the existence of the tile drain system and interceptors or from damaged or undamaged existing underground tile drain system issues by Developer or Developer's agents, representatives, contractors, subcontractors, or employees, adjacent property owner or adjacent property owner's agents, representatives, contractors, subcontractors, or employees.

C.10.3. All improvement plans shall contain a note stating that the Developer (or Contractor) will be responsible to preserve and protect all existing survey monuments and other survey markers. Any damaged, displaced, obliterated or lost monuments or survey markers shall be re-established or replaced by a licensed Land Surveyor at the Developer's (or Contractor's) sole expense. A corner record must be filed in accordance with the State law for any reset monuments (California Business and Professions Code Section 8871).

C.10.4. Developer shall pay for the future costs of maintenance including PG&E charges for all new streetlights to be installed by the Project

C.10.5. Nothing contained herein shall be construed to permit any violation of relevant ordinances and regulations of the City of Tracy, or other public agency having jurisdiction. This Condition of Approval does not preclude the City from requiring pertinent revisions and additional requirements to the Grading Permit, Encroachment Permit, Building Permit, Improvement Plans, OIA, if the City Engineer finds it necessary due to public health and safety reasons, and it is in the best interest of the City. The Developer shall bear all the cost for the inclusion, design, and implementations of such additions and requirements, without reimbursement or any payment from the City.

D. Utilities Department, Water Resources Division Conditions

Contact: Stephanie Hiestand (209) 831-6333 stephanie.hiestand@cityoftracy.org

D.1. Prior to issuance of a construction or building permit, the applicant shall demonstrate compliance with the 2015 Post-Construction Stormwater Standards (PCSWS) Manual and obtain approval through the following:

D.1.1. Develop a Project Stormwater Plan (PSP) that identifies the methods to be employed to reduce or eliminate stormwater pollutant discharges through the construction, operation and maintenance of source control measures, low impact development design, site design measures, stormwater treatment control measures and hydromodification control measures.

D.1.1.a. Design and sizing requirements shall comply with PCSWS Manual.

D.1.1.b. Demand Management Areas must be clearly designated along with identification of pollutants of concern.

D.1.1.c. Calculations of the Stormwater Design Volume and/or Design Flow with results from the Post-Construction Stormwater Runoff Calculator must be submitted in the PSP for approval.

D.1.1.d. Per the PCSWS Manual, include a hydromodification management plan ensuring the post-project runoff flow rate shall not exceed estimated pre-project flow rate for the 2-year, 24 hour storm.

D.1.1.e. Submit one (1) hard copy of the PSP and an electronic copy to the Utilities Department (WaterResources@cityoftracy.org), include the project name, address and Project # and/or Permit # in the title or subject line.

D.1.2. A separate plan sheet(s) designated SW shall be submitted in the plan set that includes the identified methods for pollution prevention outlined in the submitted PSP. You must include all standards, cross sections and design specifications such as landscape requirement in treatment areas including type of irrigation installation and/or height of drain inlet above the flow line, etc. in these SW plan sheets along with legend.

D.1.3. Develop and electronically submit to the Utilities Department for approval (WaterResources@cityoftracy.org) a preliminary Operations and Maintenance (O & M) Plan that identifies the operation, maintenance, and inspection requirements for all stormwater treatment and baseline hydromodification control measures identified in the approved PSP.

D.1.4. No later than two (2) months after approval notification of the submitted PSP, the applicant shall electronically submit the following information to the Utilities Department (WaterResources@cityoftracy.org) for development of a draft stormwater maintenance access agreement, in accordance with the MAPCSWS:

i. Property Owner(s) name and title report; or Corporate name(s) and binding documents (resolutions, etc) designating ability to sign agreement
ii. Property Address
iii. Exhibit A – legal property description
iv. Exhibit B – approved O & M Plan

D.2. Prior to issuance of a grading permit, the applicant shall provide proof of permit coverage under the Construction General Permit and submittal of an electronic Stormwater Pollution Prevention Plan (SWPPP), to be submitted to WaterResources@cityoftracy.org.

D.3. Prior to Certificate of Occupancy, the applicant shall complete the following to the satisfaction of the Utilities Director:

D.3.1. Return to the City Clerk, a legally signed and notarized copy of the final maintenance access agreement including all exhibits and approved O & M plan received from the Utilities Department.

D.3.2. Obtain final approval by the Utilities Department of the constructed and installed Stormwater pollution prevention methods outlined in the PSP. Frequent inspections of the Post-Construction treatment measures should occur during the construction phase by calling 209-831-6333.

D.3.3. The project shall be in full compliance with Construction General Permit including 70% stabilization of the project with Notice of Termination approval.

D.4. Before the approval of a construction, grading or building permit, the applicant shall demonstrate compliance with Tracy Municipal Code Chapters 11.28 and 11.34 and Chapter 4 of the California Green Building Standards Code to the satisfaction of the Utilities Director.

D.5. Prior to issuance of a construction or building permit, applicant shall demonstrate compliance with the 2015 Model Water Efficient Landscape Ordinance and obtain approval by the Utilities Department through the following:

D.5.1. Develop and submit electronically and by hard copy, a Landscape Document Package (LDP) that identifies the methods to be employed to reduce water usage through proper landscape design, installation and maintenance. This LDP shall consist of:

i. A project information sheet that includes the checklist of all documents in the LDP;
ii. The Water Efficient Landscape Worksheets that include a hydrozone information table and the water budget calculations – Maximum Applied Water Allowance and Estimate Total Water Use;
iii. A soil management report, after compaction and from various locations throughout the project;
iv. A landscape design plan that includes the statement, “I agree to comply with the requirements of the 2015 water efficient landscape ordinance and shall submit for approval a complete Landscape Document Package:
v. An irrigation design plan with schedule; and
vi. A grading design plan.

D.5.2. A Certificate of Completion must be completed, signed, and submitted to the Utilities Department prior to Final approval for Occupancy.

E. Development Services Department, Building Division Conditions

Contact: Sean McNamara (209) 831-6412 sean.mcnamara@cityoftracy.org

E.1. The Applicant shall submit a building permit application along with all pertinent construction documents such as plans, specifications, and/or calculations to the Building Safety Division prior to the construction of any regulated structures, on-site improvements, or accessibility features. Construction documents shall conform to the Title 24 California Code of Regulations edition effective on the date of application for a building permit.

E.2. Any portions of the project being planned in non-compliance with the Title 24 CCR requirements, shall be submitted to the Building Official as an alternative material, design, and/or method of construction in accordance with CBC §104.11 for review, and be approved prior to construction. Per applicant response a performance-based design analysis has been approved conceptually, and the team is working toward gaining site specific approval. If approval of a proposed alternative material, design, and/or method of construction is not granted, the design and construction shall be in strict conformance to the requirements of Title 24 CCR.

F. South San Joaquin County Fire Authority (SSJCFA) Conditions

Contact: Courtney Wood (209) 831-6737 courtney.wood@sjcfire.org

F.1. Prior to construction, applicant shall submit construction documents to the South San Joaquin County Fire Authority for review and approval.

F.1.1. Construction documents shall be designed to the current edition of the California Code of Regulations, Title 24, as amended by the City of Tracy Municipal Code.

F.1.2. Deferred submittals shall be listed on the coversheet of each page. Each deferred submittal shall be submitted, reviewed and approved by SSJCFA prior to installation.

F.1.3. Fire protection water supply must be submitted separately from construction permit. All piping and installation shall be in accordance with CFC §507 & NFPA standards. Approval of grading and/or on-site improvements does not grant installation of underground fire service.

F.1.4. Fire sprinklers shall be designed by a licensed fire protection contractor or engineer. Hydraulic calculations, specifications and plans shall be submitted prior to issuance of building permit.

F.1.5. A request for fire flow shall be submitted to the South San Joaquin County Fire Authority and results shall be approved by the Fire Marshal prior to construction. Fire flow requirements shall be in accordance with CFC Appendix B.

F.1.6. Fire department connections shall be installed in accordance with CFC §912 and NFPA standards. A hydrant shall be placed within 100’ of the FDC, in accordance with NFPA 14 §6.4.5.4. FDC locations shall be approved by the fire code official prior to issuance of construction permit.

F.1.7. Fire control room locations shall be approved the fire code official prior to the issuance of construction permit.

F.1.8. Aerial fire apparatus access roads shall have a width of not less than 26’0”.

F.1.9. All gates shall be equipped with mean of opening by the fire Authority in case of emergency in accordance with CFC as amended by Tracy Municipal Code.

F.1.10. Provide a truck turning template which clearly shows the truck turning radius of 29'-9" inside and 47'-7" outside. Truck turning template shall show all ingress and egress paths available.

F.2. Applications received by our offices are subject to the current fee schedule for South San Joaquin County Fire Authority.

F.2.1. Application processing fees and minimum plan review fees are due at time of submittal of construction documents.

F.2.2. Additional plan review fees, minimum inspection fees and administrative fees are calculated on approval of project and shall be paid prior to issuance of permit.

F.2.3. Permit holder is responsible for any additional inspection fees incurred, and shall be paid prior to final inspection.

F.3. The Fire Authority will exercise CFC §104.7.2 to utilize third party fire protection engineers for the reviews of the fire protection systems.

F.4. Prior to occupancy of each new business, the tenant shall contact South San Joaquin County Fire Authority for a new business inspection. Additional fees may be required for New Business, Annual and Operational Fire Permits. All fees shall be paid prior to approval of inspections.

F.5. Prior to construction, all-weather fire apparatus access roads shall be installed. Fire apparatus access roads during construction shall have a minimum 20' unobstructed width in accordance with CFC §503.

F.6. All hydrants shall be installed, inspected and tested prior to bringing combustible materials onsite, including storage.

F.7. Knox boxes shall be required. The operator of the building shall immediately notify the Fire Authority and provide the new key where a lock is changed or rekeyed. The key to such shall be secured in the key box.

F.8. Building and each tenant space shall be provided with approved address identification in accordance with CFC §505.

F.9. Prior to final inspection, emergency radio responder coverage shall be tested to confirm coverage areas. It is beneficial for the applicant to conduct testing at foundation as retrofitting for the conduit is costly. If coverage is inadequate, a separate permit for emergency radio responder coverage shall be submitted to SSJCFA for review and approval prior to installation.
Additional improvements may warrant additional testing to be performed. Testing shall be the determination of the fire code official.

RESOLUTION 2020-_____

APPROVING A COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE CITY OF TRACY AND PROLOGIS, L.P. FOR THE DEVELOPMENT OF OR FUNDING FOR A MULTI-USE GYMNASIUM OR SIMILAR RECREATIONAL AMENITY

WHEREAS, Since as early as 2013, Prologis has been an important developer in the City of Tracy, and has developed more than 15 million square feet of employment- and revenue-generating uses in multiple locations throughout the City, and

WHEREAS, On May 26, 2020, Prologis applied to the City for an amendment to the Northeast Industrial ("NEI") Specific Plan (Application No. SPA20-0005) and a development review permit for an industrial project on a site totaling approximately 86 acres located on the south side of Grant Line Road, between Chrisman Road and Skylark Way and within the NEI Specific Plan area (Application No. D20-0017) (together hereafter, the "Project"), and

WHEREAS, In order for the City to approve and for Prologis to implement the Project the City would be required to exercise its legislative discretion to amend the NEI Specific Plan to modify certain existing NEI Specific Plan development standards, and

WHEREAS, In exchange for the City's willingness to consider exercising its legislative discretion in the manner required to approve the Project, and in acknowledgement of its long-standing and mutually beneficial relationship with the City, Prologis offered to provide the City with funding for a community benefit in the form of a multi-use gymnasium or other recreational amenity, and

WHEREAS, On July 28, 2020, the Tracy City Council gave direction to staff to negotiate a Community Benefit Memorandum of Understanding (MOU) with Prologis to implement its offer of a community benefit, and

WHEREAS, The negotiated MOU, as proposed and attached hereto as Exhibit A, would provide for Prologis to contribute four million dollars ($4,000,000) to the City for the development of a multi-use gymnasium or other similar recreational amenity, and

WHEREAS, As proposed, the MOU would give the City and Prologis in excess of four (4) years to work cooperatively together to determine the specific form of the community amenity, but the ultimate form and location of the amenity would be subject to the City's final review and approval, in the City's sole discretion, and

WHEREAS, The MOU would also give the City time to identify potential additional funding sources and secure additional funding for completion of a high-quality amenity that will serve the community for decades into the future, and

WHEREAS, The City Council conducted a public meeting to review and consider the proposed Community Benefit MOU on November 10, 2020;

NOW, THEREFORE, BE IT RESOLVED, That the City Council of the City of Tracy hereby approves the Community Benefit Memorandum of Understanding between the City of Tracy and Prologis, L.P., for the development of a multi-purpose gymnasium or similar recreational amenity, in substantially the form of Exhibit A hereto.

* *

The foregoing Resolution 2020-_____ was adopted by the City Council of the City of Tracy on the 10th day of November, 2020, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:

_____
MAYOR

ATTEST:

_____
CITY CLERK

City Draft 11-03-2020

COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING

By and Between the

CITY OF TRACY,

a municipal corporation

and

PROLOGIS, L.P.

Effective Date: November __, 2020

COMMUNITY BENEFIT MEMORANDUM OF UNDERSTANDING

This Community Benefit Memorandum of Understanding ("MOU") is made by and between the CITY OF TRACY, a municipal corporation ("City"), and PROLOGIS, L.P. ("Developer") on November ___, 2020. City and Developer are collectively referred to herein as the "Parties" and may each be individually referred to as a "Party."

RECITALS

A. Developer is currently developing multiple industrial and commercial development projects in the City of Tracy. These projects include more than _____ square feet of employment and revenue generating uses for the region.

B. Among the projects Developer has brought to the City is the development of approximately _____ square feet of warehouse and distribution center space in the City's Northeast Industrial ("NEI") Specific Plan Area, If approved, this project is expected to bring additional jobs to the City and generate tax revenue for the region. To enable Developer to develop this project, Developer has asked City to modify certain development standards in the NEI Specific Plan Area to accommodate the Project, and in recognition of Developer's substantial investments in the City and the significant benefits realized by the City from Developer's investments, the City has expressed its willingness to consider such modifications.

C. In appreciation of its long-standing and mutually beneficial relationship with the City, and in exchange for City's cooperation in assisting Developer to continue to make the City an important home for Developer, Developer wishes to provide City with a significant community benefit (the "Future Project").

D. City and Developer have discussed options for Developer to provide such a community benefit and have tentatively agreed that the Future Project should be a multi-purpose gymnasium or similar recreational facility. The parties have agreed, however, that Developer will provide funding in the amount of four million dollars ($4,000,000) for the development of the Future Project, in a location to be determined by the City and subject to the limitations set forth herein.

E. The Parties have further agreed that, prior to commencing development of the Future Project, the Future Project will comply with all applicable State and local laws and requirements.

F. The Parties therefore enter into this MOU to memorialize the basic terms of City's and Developer's obligations with respect to the Future Project.

MEMORANDUM OF UNDERSTANDING

Based upon the foregoing Recitals, which are incorporated herein as provisions of this MOU by reference, and in consideration of the covenants and promises of City and Developer contained in this MOU, the Parties hereby agree as follows:

1. Developer Contribution; Funding and Payment Obligations

As set forth in Section 3 below, Developer shall contribute four million dollars ($4,000,000) to

fund the development of the Future Project ("Developer Contribution"). Such funding shall be provided at a time and in a manner to be determined by City, after consulting with Developer. Subject to the limitations of Section 3 below, City may, at any time during the Term of this MOU (defined below), request payment in cash of all or any portion of the Developer Contribution, and Developer shall make the requested payment within forty-five (45) days of such a written request. At such time as Developer's payment(s) of the Developer Contribution total $4,000,000, this MOU shall immediately expire and Developer shall have no further obligations hereunder.

Not later than ten (10) days prior to the end of the Term, Developer shall make full payment to City of the then-outstanding balance of the Developer Contribution. At the expiration of the Term, subject to Developer's having made such payment to City, this MOU shall automatically expire and Developer shall have no further obligations hereunder.

During the Term, City will make good faith efforts to identify and pursue opportunities for additional funding for the Future Project, in addition to the Developer Contribution.

2. Future Project

The location of the Future Project will be determined by City in its sole discretion. The precise nature and scope of the Future Project is currently undefined. During the Term, Developer and City shall use all commercially reasonable and good faith efforts to work cooperatively to prepare a plan for a multi-purpose gymnasium or other mutually agreeable recreational amenity that is acceptable to both Developer and City as the Future Project. All language to the contrary herein notwithstanding, however, City shall have sole and exclusive discretion to determine the final form of the Future Project.

3. Limitations on Section 1 Rights and Obligations; Early Termination or Tolling

All language in this MOU to the contrary notwithstanding, the Parties' rights and obligations under Section 1 of this MOU shall not become effective until both of the following conditions precedent are satisfied: (i) 30 days have passed following the lapsing of the statute of limitations set forth in Government Code section 65009 ("Statute of Limitations Period") following the City Council's final approval of Specific Plan Amendment SPA20-0005 and Development Review D20-0017 (the "Project Big Bird Approvals"), and (ii) no lawsuit challenging Project Big Bird Approvals has been filed within the Statute of Limitations Period.

A. If no lawsuit challenging the Project Big Bird Approvals is filed during the Statute of Limitations Period, then on the first day following the expiration of the Statute of Limitations Period (January ___, 2021, or the "Contribution Effective Date"), the Parties' rights and obligations under Section 1 shall become effective and shall remain in effect for the remainder of the Term.

B. If a lawsuit is filed within the Statute of Limitations Period, City may notify Developer in writing, that the effectiveness of this MOU is tolled until such time as the lawsuit, including any appeals, is settled by the parties or finally resolved by court order. If the City elects to toll the effectiveness of the MOU, then (i) the Parties' obligations under Section 1 shall immediately be restored and be binding on the Parties for the remainder of the Term, subject to the tolling of the MOU, and (ii) the time period from the filing date of the lawsuit in the superior court through and including the date upon which the lawsuit is settled by the parties or finally resolved by court order, as applicable, shall not count against the Term of the MOU as set forth in Section 4.

C. If the Project Big Bird Approvals, or either of them, do not survive the settlement or final resolution of the lawsuit described in Section 3.B above, or if Developer chooses to abandon the Project Big Bird Approvals, then immediately upon the effectiveness of such settlement, final resolution, or abandonment, this MOU shall terminate without further action of the Parties, and the Parties shall have no further rights or obligations under this MOU.

4. Term

The Parties agree to be bound by this MOU commencing on the Effective Date set forth in the Preamble, and unless terminated earlier pursuant to Section 3 above, this MOU shall remain in effect until the date that is four (4) years from the Contribution Effective Date. The period of time from the Effective Date through the date that is four (4) years from the Contribution Effective Date is referred to herein as the Term. The Parties may extend the Term at any time prior to its expiration by an amendment pursuant to Section 5.

5. Amendment

No amendment or modification of this MOU will be binding unless it is in a writing duly authorized and signed by the Mayor or its designee, on behalf of City, and by the duly authorized representatives of Developer.

6. Default and Remedies.

Any failure by City or Developer to perform any material term or condition of this MOU, which failure continues for a period of thirty (30) days following written notice of such failure from the other Party, shall constitute a default under this MOU. Any notice given pursuant to the preceding sentence shall specify the nature of the alleged failure and, where appropriate, the manner in which such alleged failure may be satisfactorily cured. If the nature of the failure is such that it cannot reasonably be cured within such 30-day period, then commencement of the cure within such time period, and diligent prosecution of completion of the cure thereafter, shall be deemed to be a cure within such 30-day period.

No failure or delay in giving notice of a default shall constitute waiver of the default; provided, however, that the provision of notice and an opportunity to cure shall be a prerequisite to the enforcement of any obligations or any actions to correct the default.

The Parties hereby acknowledge that City would not have entered into this MOU if doing so would subject it to any risk of liability for money damages, either for a default, for any type of breach of this MOU, for repudiation of this MOU, or for any other actions with respect to its negotiation, preparation, implementation or application. The Parties further acknowledge that money damages and remedies at law are inadequate, and that specific performance shall be the sole and exclusive remedy available to the Parties for a default or breach of this MOU.

7. Signatures

The individuals executing this MOU represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this MOU on behalf of the respective legal entities of Developer and City. This MOU shall inure to the benefit of and be binding upon the Parties hereto and their respective successors and assigns.

8. Assignment and Successors

Developer may not assign its rights or obligations under this MOU, in part or in whole, without City's written consent. Notwithstanding the foregoing, Developer may assign its obligations hereunder to an "affiliate entity," as defined herein, without requiring prior written consent, provided that, concurrently with such assignment, assignee assumes all obligations under this MOU. For purposes of this MOU, the term "affiliate entity" means any entity in which (a) Developer holds at least fifty percent (50%) of the ownership of such entity, or (b) an entity that holds at least fifty percent (50%) of the ownership of Developer.

9. Indemnification

To the fullest extent permitted by law, Developer shall indemnify, defend and hold harmless City, and its elected and appointed councils, boards, commissions, officers, agents, employees, volunteers and representatives from any and all loss, liability, fines, penalties, forfeitures, costs and damages, and from any and all claims, demands and actions in law or equity (including any Legal Action as defined in Section 3 above, and including attorneys' fees and litigation expenses) (collectively, "Claims") by any Person or entity, arising or alleged to have arisen out of or in any way related to Developer's and City's approval and execution of this MOU. City shall timely notify Developer of any such Claims and Developer shall timely pay all costs incurred by City in defending any such Claims, and Developer shall be solely responsible to pay, in a timely manner and on City's behalf, any and all awards of money damages, attorney fees, and court costs against City.

10. Counterparts

This MOU may be executed in multiple counterparts, each of which shall be deemed an original, but all of which, together, shall constitute one and the same instrument. The Parties may also deliver executed copies of this MOU to each other by electronic mail (including PDF or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes. No Party may raise the use of any image transmission device or method or the fact that any signature was transmitted as an image as a defense to the enforcement of this MOU. At the request of either Party, the Parties will confirm signatures by signing and delivering an original document.

11. Independent Contractor Status

Developer is an independent contractor and is solely responsible for all acts of its employees, agents, or subcontractors, including any negligent acts or omissions. Developer is not City's employee and Developer shall have no authority, express or implied, to act on behalf of City as an agent, or to bind City to any obligation whatsoever, unless City provides prior written authorization to Developer.

12. Entire Agreement.

This MOU embodies the entire understanding between the Parties with respect to its subject

matter and can be changed only by an instrument in writing signed by the Parties.

THE PARTIES AGREE to this MOU as witnessed by the signatures below:

CITY:

Jenny Haruyama, City Manager

Dated: _____

Approved as to form:

Leticia Ramirez, City Attorney

Dated: _____

DEVELOPER:

PROLOGIS, L.P.

By: DocuSigned by: Ali Harandi 552BB3DC5D1E487...

Name: Ali Harandi

Title: Investment Officer

November 10, 2020

AGENDA ITEM 4.B

REQUEST

PUBLIC HEARING TO CONSIDER INTRODUCING AN ORDINANCE APPROVING AN AMENDMENT TO THE DEVELOPMENT AGREEMENT WITH TRACY HILLS PROJECT OWNER, LLC AND TRACY PHASE I, LLC FOR THE TRACY HILLS PROJECT LOCATED AT THE SOUTHWEST CORNER OF CORRAL HOLLOW ROAD AND TRACY HILLS DRIVE, APPLICATION NUMBER DA20-0001

EXECUTIVE SUMMARY

Tracy Hills Project Owner, LLC submitted a request to negotiate an amendment to the Development Agreement they have with the City. This amendment relates to the financing and timing of public infrastructure delivery, clarifications on how to obtain reimbursements from other benefitting developments, and clarifying certain provisions of the Residential Growth Allotment (RGA) process.

DISCUSSION

This agenda item involves a public hearing to consider Tracy Hills Project Owner, LLC and Tracy Hills Phase I, LLC ("Developer," or Tracy Hills), application for an amendment to that certain Development Agreement by and between the City of Tracy and the Tracy Hills Project Owner, LLC and Tracy Phase I, LLC, recorded in the official records of San Joaquin County as Document No. 2016-066658 (hereafter, the "DA"). The DA relates to the development of the Tracy Hills Project, which proposes a mix of residential, commercial, recreational uses, and parklands on the 2,732-acre site that comprises the Tracy Hills Specific Plan area (hereafter, the "Project").

The proposed amendment to the DA would:

- Make changes to the construction timing of various Corral Hollow Road Improvements, and
- Include provisions to allow Developer to accelerate when reimbursements are provided for completing certain traffic infrastructure improvements, and
- Allow the developer to prioritize Impact Fee funding to certain traffic improvements listed in the existing DA, with the exception of the Linne Road-Corral Hollow Road intersection improvements, which would be capped at $1.6 million of Tracy Hills impact fees, and
- Clarify that Developer may obtain reimbursements from third parties (not the City) that benefit from Developer's funding of certain improvements, and
- Clarify certain aspects of the granting of Residential Growth Allotments under the City's existing Growth Management Ordinance and implementation guidelines.

History of DA and Summary of Key Terms in the proposed DA Amendment:

On April 5, 2016, the City Council of the City of Tracy adopted the Tracy Hills Specific Plan ("THSP"), and also approved the DA. The THSP, the DA and the Conditions of

Approval (collectively, the "Project Approvals") impose various obligations on Developer relating to development of the THSP area including, among other things, the construction of various transportation infrastructure improvements.

On January 9, 2020, Developer submitted a written application to City to amend the DA to modify and clarify its provisions relating to (a) the timing and construction of Corral Hollow Road improvements, (b) the use of benefit districts to recover costs incurred by developer that exceed its fair share for program and non-program public improvements, (c) provisions for recycled water infrastructure, and (d) Residential Growth Allotments ("RGAs") and the life of building permits.

On July 7, 2020, Council authorized staff to being negotiation for the DA Amendment. Since that time, City and Developer negotiated, refined and modified Developer's proposal to amend the DA. The modified proposal is reflected in the proposed First Amendment to the DA, a copy of which is attached hereto as Exhibit 1 to the proposed Ordinance.

Key Terms of Proposed DA Amendment

Key terms in the proposed Amended DA are outlined below, beginning with the public benefits that the City would receive via the DA followed by the public benefits that the City would receive under the DA as amended.

Public Benefits:

Existing DA Benefits:

- $5 million Community Benefit Fee to be used at the discretion of the City
- $2 million to fund design of the WWTP Phase 2B
- $5.5 million to fund the site acquisition, design and construction of the Tracy Hills fire station, as well as completing the design and construction of said fire station
- Widening of Corral Hollow Road to four lanes, including sidewalk from the southern portion of the California Aqueduct to the intersection of Corral Hollow Road prior to the final inspection of the structure that contains the 1800th residential building permit (advanced from the trigger identified in the EIR, which was the 2,588 AM Peak Hour Trip (approx. 5,000 residential unit))
- Additional open space benefits

Additional Benefits from Proposed DA Amendment:

- Tracy Hills to provide an additional $1.4 million dollars to be used to fund the projected shortfall in the construction of the Tracy Hills fire station. Developer's total contribution for the fire station is $6.9 million

- Tracy Hills and City agree to use $1.6 million dollars of TH Traffic Impact Fees collected to be used toward the Corral Hollow and Linne Intersection Project

Developer Benefits:

Existing DA Benefits:

- Vesting project approvals for the Tracy Hills Specific Plan, including GMO Guidelines

- Allow for certain development impact fees to be paid at final inspection

- Have 85% of all Traffic Impact Fees collected to be appropriated to the following give projects:

    - All I-580 interchange improvements at Corral Hollow Road;
    - All required improvements to Corral Hollow Road from Linne Road to the southern Property boundary, including railroad and canal crossings;
    - All I-580 interchange improvements at Lammers Road;
    - All required improvements to Lammers Road from Old Schulte Road to I-580, including railroad and canal crossings; and
    - Linne Road improvements from Corral Hollow Road to MacArthur Boulevard.

- DA term of 25 years

- Deferral of some recycled water impact fees to later phases of the Project

Additional Benefits from Proposed First Amendment:

- <u>Tracy Hills is requesting to "swap" the early widening of Corral Hollow Road from the northerly portion to the southerly portion</u>. The northerly portion extends from the California Aqueduct to the intersection of Corral Hollow Road and Linne Road. The southerly portion is on land that is owned by developer and extends from the California Aqueduct south to the I-580. The improvements that Developer proposes to complete first would include full widening on land in front and adjacent to their Project. The widening is a four-lane road with center median islands with sidewalks and landscaping on both sides of the streets; one of the sidewalks is a class 1 bike lane (i.e. 10-ft sidewalk / bike trail).

  The current DA requires that the northerly section widening is completed by 1,800 residential units (not car trips). This provision was included in the DA at the direction of the City Council. The Tracy Hills EIR concluded that in order to maintain the City's traffic level of service standards the widening of this same section is required or triggered at 2,566 AM Peak Trips (which equals approximately 5,000 residential dwelling units).

Through this DA Amendment, Tracy Hills is proposing to do the southerly widening next year. The northerly portion of the widening would commence by the 2,600th residential unit (that equals 1,430 AM Peak Trips or 2,730 PM Peak Trips; the EIR triggers this segment widening at 2,588 AM Peak Trips), and the sidewalk will be installed at that time if the work has not already been done by others. Our analysis shows that both the original DA trigger and the new proposal exceed the City's standards in terms of vehicular traffic level of service. It may be argued that in terms of vehicular traffic level of service that the swap is approximately even. The main issue with the proposal is the pedestrian and cyclist connectivity policy objectives may be delayed by the City agreeing to push out the trigger from 1,800 units to commencing construction by the 2,600 unit.

As indicated above, the current DA trigger of 1,800 units for the completion of Corral Hollow Road between Linne Road and the California Aqueduct was specifically included at the direction of Council through the exercise of their discretion during the approval of the existing DA in 2016.

- 85% of Traffic Impact Fee to remain in CIPs for Tracy Hills Triggered Traffic Improvements. The existing DA establishes that 85% of Traffic Impact Fee funds collected from the Project shall be used for five (5) key traffic infrastructure items that will be triggered by Tracy Hills. They include:

    - The Corral Hollow / I-580 Interchange,
    - All Corral Hollow road way improvements from I-580 to Linne Road,
    - Lammers Road I-580 Interchange,
    - All Lammers Road improvements; and
    - Linne Road Improvements from Corral Hollow Road to MacArthur Blvd.

  The DA Amendment request is for the Developer to control which projects are the priority and Developer would work with staff on the specific funding allocation for the 85% of traffic impact fee funds. In the existing DA, the City has control over the use and priority of the 85% funds and priority of projects. It should be noted that regardless of who prioritizes the funds, the five listed projects will utilize the 85% traffic impact fees for completion and Developer's proposal would not change the timing of the five improvements.

- Accelerating Reimbursement of 85% Traffic Funds Upon Project Completion. The City's current code has specific criteria for when and how developers will be reimbursed funds that they contributed in excess of their fair share for constructing certain public infrastructure projects. In summary, the reimbursement to the developer takes place over a period of time. The request by Tracy Hills is to seek an accelerated reimbursement for the five (5) traffic infrastructure items list above. For example, once Tracy Hills triggers any of the five (5) items, they would enter into an Off-site Improvement Agreement (OIA) to construct the improvement using their own funds. Once the Project is complete and accepted by the City, the City will process the reimbursement of the funds that was collected and reserved for these five (5) traffic infrastructure items listed above.

Environmental Document

On April 5, 2016, the City Council certified the Environmental Impact Report (EIR) for the Tracy Hills Project, which also reviewed and supported the City's approval of the Original DA. In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15168(c)(2), the changes to the DA would remain within the scope of the development program evaluated in the 2016 EIR, and so no further environmental review is required.

Planning Commission Review

At their regularly scheduled meeting on October 28, 2020, the Planning Commission reviewed, evaluated, and discussed the proposed DA. The main areas of discussion related to the timing of the Corral Hollow Road widening and the proposed provision in the DA allowing the developer to direct the funding of certain development impact fees they pay. The Planning Commission expressed their desire to see a DA amendment that reflected the communities desire to facilitate improved traffic movement along Corral Hollow Road. Accordingly, they recommended that the provision related to moving the "trigger" for Corral Hollow Road widening from the current 1,800 unit trigger out to 2,600 units. The Planning Commission recommended that the improvements to the intersections and Corral Hollow roadway nearer to the freeway interchange would better facilitate improved traffic mobility than instead widening Corral Hollow Road north of the aqueduct, which would be accomplished later.

For clarity, the Planning Commission extensively discussed the proposed provision in the DA that would enable the developer to allocate 85% of the traffic impact fees they pay to the City be used for 5 improvements necessary for the development of Tracy Hills, all of which were previously identified. Allowing the Developer this financing flexibility in directing the use of those fees does not affect the City's ability to identify, require, and trigger the completion of any of those improvements. The burden on the developer of this flexibility the developer is seeking is that if a trigger is identified by the City and the traffic fees have been directed by the developer to a different improvement, the developer will still have to fund the triggered improvement, albeit with other developer funds.

STRATEGIC PLAN

This agenda item does not relate to any of the City of Tracy's strategic priorities.

FISCAL IMPACT

This agenda item required staff and outside attorney, and consultant work, which was funded through a Cost Recovery Agreement with the applicant. Accordingly, there is no impact to the General Fund for processing the DA amendment. The DA amendment itself contains provisions related to the timing of infrastructure, which are funded through the collection of development impact fees. The Public Safety fees are advanced to the City and the Developer is receiving fee credits.

Should Council approve the proposed Tracy Hills DA Amendment, there may be some additional administrative costs to developing and directing Traffic Impact Fees to the

various traffic improvement projects. There should not be any additional staff cost related to the other DA Amendment requests.

RECOMMENDATION

Staff recommends that the City Council introduce an Ordinance approving an amendment to the Development Agreement with Tracy Hills Project Owner, LLC and Tracy Phase I, LLC for the Tracy Hills Project located at the southwest corner of Corral Hollow Road and Tracy Hills Drive. Staff's recommendation does not apply to the Development Agreement provision related to the construction timing of Corral Hollow Road improvements because the existing provision was specifically included at the direction of Council through the exercise of their discretion.

Prepared by: Bill Dean, Assistant Director of Development Services
Robert Armijo, City Engineer

Reviewed by: Karin Schnaider, Finance Director
Andrew Malik, Assistant City Manager

Approved by: Jenny Haruyama, City Manager

ATTACHMENTS

Attachment A – Traffic Study
Attachment B – Ordinance including Exhibit 1, the Proposed DA Amendment

Kimley»Horn

MEMORANDUM

From: Frederik Venter, P.E. and Colin Ogilvie | Kimley-Horn and Associates

To: Robert Armijo, P.E. | City of Tracy

Date: October 22, 2020

Re: **Tracy Hills Phase Development Agreement (DA) Traffic Review**

1. Executive Summary

This memorandum evaluates the proposed revisions to the Tracy Hills Development Agreement (DA) (the "Project"). The current DA states that Tracy Hills will widen Corral Hollow Road from the southern edge of the California Aqueduct to the intersection with Linne Road at the 1,800th residential dwelling unit trigger in the Tracy Hills development.

The developer proposes to revise the DA to instead widen Corral Hollow Road from two to four lanes from the I-580 westbound ramps to the southern edge of the California Aqueduct in the Spring of 2021. North of the California Aqueduct would remain 2 lanes.

In addition to the widening of Corral Hollow, it was assumed that additional intersections improvements identified by traffic studies performed for various Tracy Hills traffic studies were also implemented.

This memorandum reviews the transportation benefits between the two alternatives versus not widening the roadway at all in the 2021 and the 2024 (1,800 DU threshold) conditions.

The analysis shows that the traffic flow along this corridor is controlled by the intersections. If the intersections fail, the corridor fails, and if the intersections operate acceptably, the segments also function acceptable. However, when the intersections operate marginally better that the LOS D/E threshold, lane merges do impact flow on the segments, since cars cannot easily find gaps to merge (i.e. where two lanes merge into one).

A graphical presentation of the analysis findings is indicated in **Figure 1** through **Figure 4**. Both LOS and travel time is reported. The analysis finds that the travel time does improve with the widening, as can be expected. In 2021 there is little improvement in LOS. It shows that for 2024 conditions, widening improves the LOS, however it is already acceptable without the widening in all AM and PM peak hour conditions.

No bicycle or pedestrian facilities currently exist between the Tracy Hills Development and the City streets to the north. The closest connection is just north of Linne Road on Corral Hollow Road. The current DA widening on the northerly section will connect the Tracy Hills development from just south of the California Aqueduct to Linne Road and small gaps would remain on the south side at the Tracy Hills Development and at across the railroad tracks to the north to establish full connectivity. The proposed DA widening at the south end of Corral Hollow Road will result on no pedestrian and bicycle connectivity until the roadway between the Aqueduct and to north of the railroad tracks is widened to four lanes.

2. Introduction

The Project consists of a proposal to revise the current DA to state that Corral Hollow Road will be widened to four lanes from the I-580 westbound ramps to the southern edge of the California Aqueduct at the 1,500th residential dwelling unit in the Tracy Hills development. North of the California Aqueduct would remain 2 lanes until the 2,588th dwelling unit would be constructed in the Tracy Hills development.

The current DA states that Tracy Hills will widen Corral Hollow Road from the southern edge of the California Aqueduct to the intersection with Linne Road at the 1,800th residential dwelling unit in the Tracy Hills development.

This analysis evaluates travel times, queuing, and LOS results along the Corral Hollow Road Corridor for the following scenarios:

- Year 2021
- Year 2021 Plus Proposed DA
- Year 2024
- Year 2024 Plus Original DA
- Year 2024 Plus Proposed DA

3. Study Methodology

Development Conditions

This traffic study is based upon the following development conditions for the following reviews:

- Year 2021 Conditions
  - Represents Year 2021 traffic with background traffic growth
  - Development of 956 Dwelling Units (DU) in Tracy Hills if 406 units develop every year
    - 753 DU in Phase 1A
    - 203 DU in KT
  - Signalized intersection at Corral Hollow Road and Tracy Hills Drive
- Year 2021 Plus Proposed DA Conditions
  - Year 2021 Conditions with Corral Hollow as a four-lane facility from I-580 to the California Aqueduct.
- Year 2024 Conditions
  - Represents Year 2021 traffic with background traffic growth
  - Development of 1800 Dwelling Units in Tracy Hills if 406 units develop every year
    - 1,170 DU in Phase 1A
    - 214 DU in KT
    - 416 DU in Phase 1B/1C
  - Development of Lammers Road with a connection at Corral Hollow Road south of the I-580 intersection. As of this report, it is undecided if this intersection will be a roundabout or a signalized intersection.
  - Intersection improvements at the following intersections
    - Corral Hollow Road and Linne Road – Signalized and widened to four-lanes

        - Corral Hollow Road and I-580 interchange – Roundabout controlled intersections
- Year 2024 Plus Original DA Conditions
    - Year 2024 Conditions with Corral Hollow as a four-lane facility from the California Aqueduct to Linne Road
- Year 2024 Plus Proposed DA Conditions
    - Year 2024 Conditions with Corral Hollow as a four-lane facility from I-580 to the California Aqueduct

Study Segments

The following segments were chosen as study intersections for the Project:

1. Corral Hollow Road – Linne Road to South of the California Aqueduct
2. Corral Hollow Road – South of the California Aqueduct to Tracy Hills Drive
3. Corral Hollow Road – Tracy Hills Drive to I-580 Westbound Ramps

Background Assumptions

Table 1 provides the development assumptions for the Tracy Hills project currently approved. It was assumed that Tracy Hills would construct 406 dwelling units per year spread equally between each expected development. It should be noted that 1800 dwelling units is constructed in the beginning of year 2024.

Table 1 – Tracy Hills Development Assumptions

Year End	Total Tracy Hills Units	Phase 1A+7C	KT	1B	1C
2019	0	0	0	0	0
2020	550	550	0	0	0
2021	956	753	203	0	0
2022	1362	951	214	197	0
2023	1768	1154	214	400	0
	1800	1170	214	416	0
2024	2174	1203	214	432	325

Table 2 provides the Corral Hollow Road improvement assumptions used for this analysis. For consistency analysis, a posted speed limit of 45 MPH was assumed I all the scenarios

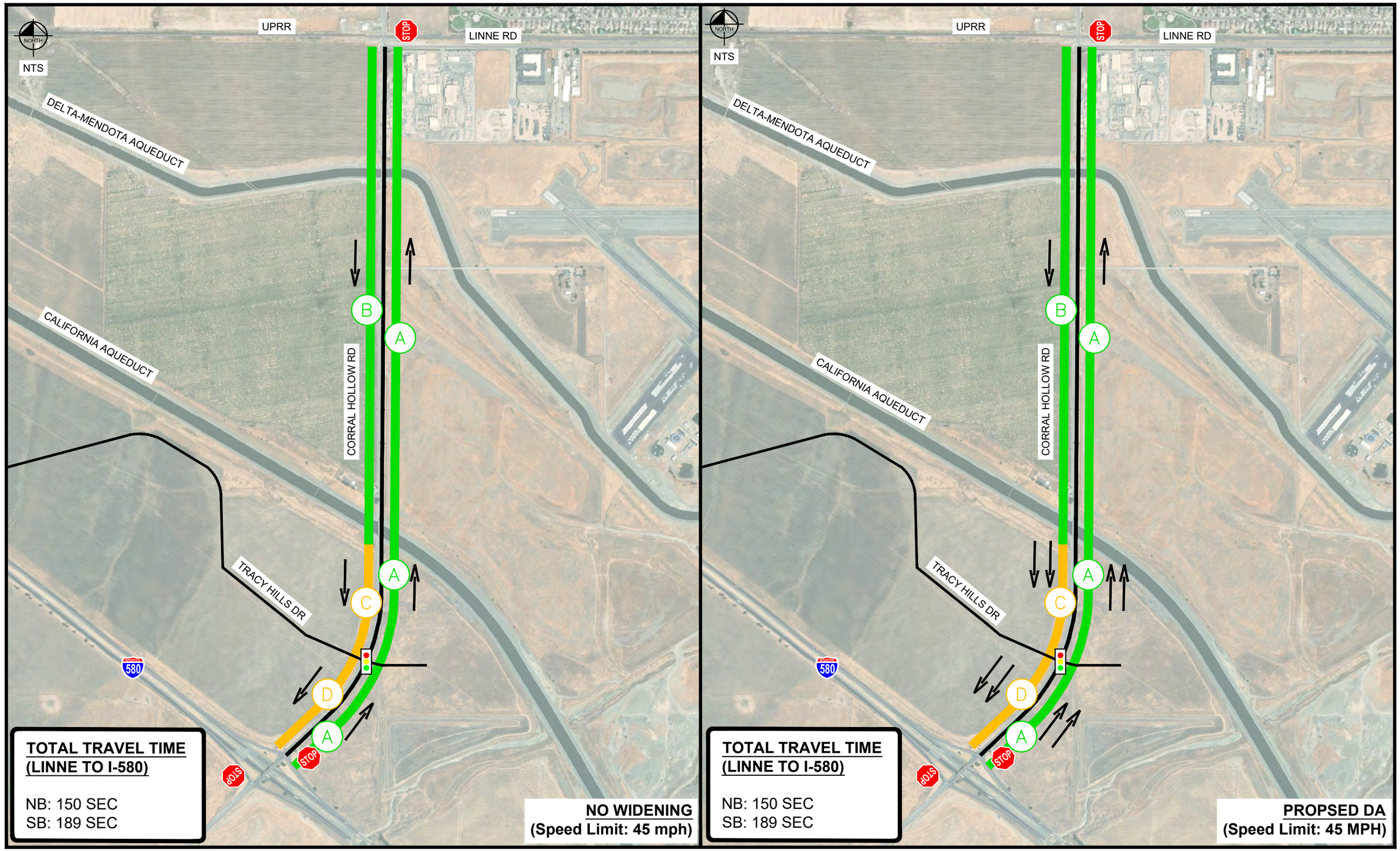
Table 2 - Corral Hollow Road Intersection Improvement Assumptions

Improvements	Year 2021	Year 2021 Plus Proposed DA	Year 2024	Year 2024 Plus Current DA	Year 2024 Plus Proposed DA
Corral Hollow Rd & Linne Rd intersection improvements – signal with 4 lanes	**X**	**X**	**X**	**X**	**X**
Corral Hollow Rd & Tracy Hills Dr intersection Widening – 2 lanes in 2021 and 4 lanes in 2024	**X**	**X**	**X**	**X**	**X**
Corral Hollow Rd & I-580 Roundabout Improvements			**X**	**X**	**x**
Corral Hollow Rd & Lammers Rd Connection RAB or signal			**X**	**X**	**X**

4. Traffic Simulation Results

Average travel times and segment LOS for the 2021 and 2024 AM and PM peak hour scenarios have been plotted and are provided in **Figure 1** through **Figure 4**.

The analysis finds that the travel time does improve with the widening, as can be expected. In 2021 there is little improvement in LOS. It shows that for 2024 conditions, widening improves the LOS, however it is already acceptable without the widening in all AM and PM peak hour conditions.



Kimley»Horn

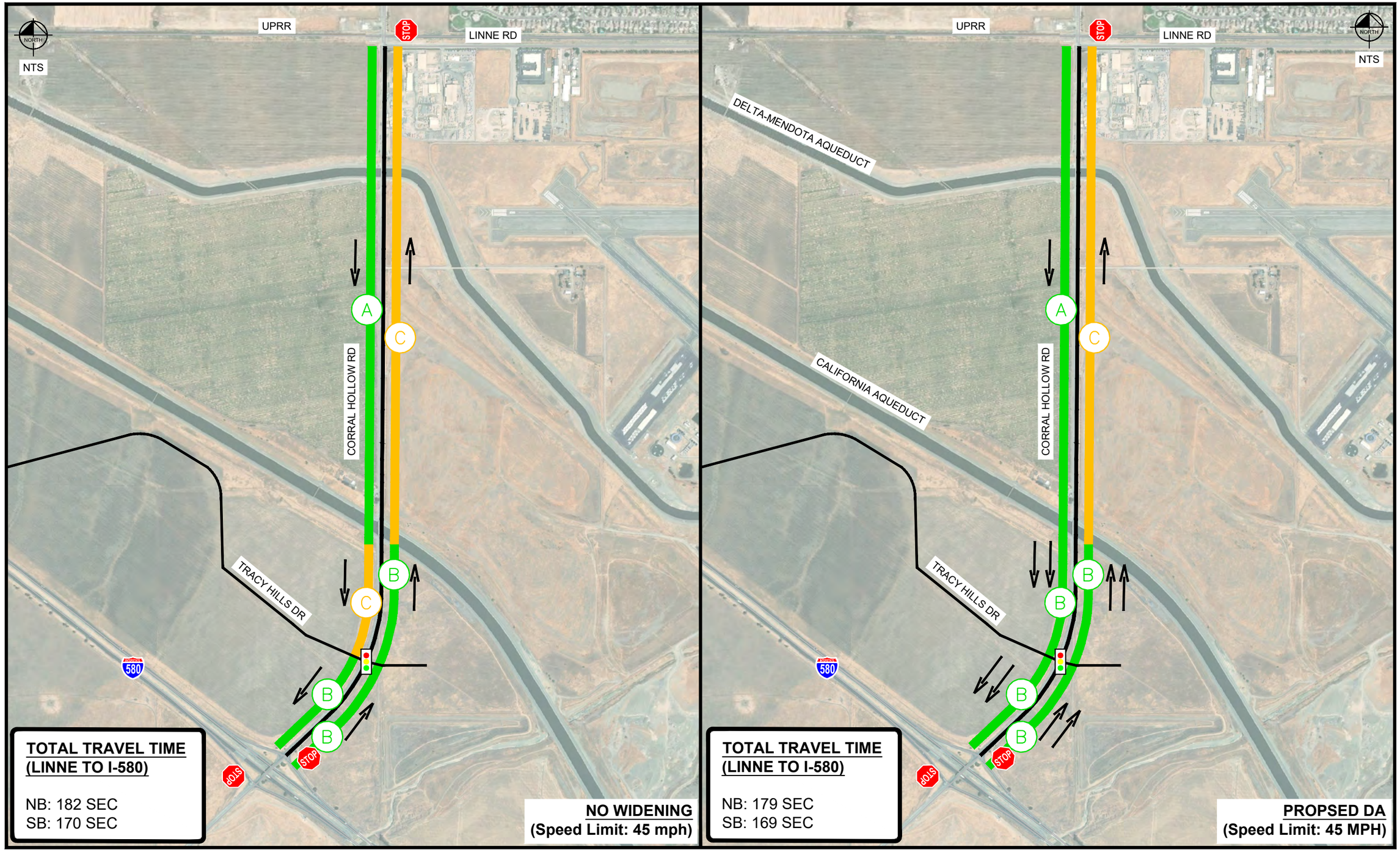
LEGEND

- PROJECT CORRIDOR
- LOS A TO LOS B
- LOS C TO LOS D
- LOS E TO LOS F
- # OF LANES PER SEGMENT
- STOP CONTROL
- SIGNAL CONTROL

Figure 1
Year 2021 (AM Peak Hour)
Traffic Analysis Results

October 2020

Tracy Hills Proposed DA Traffic Review



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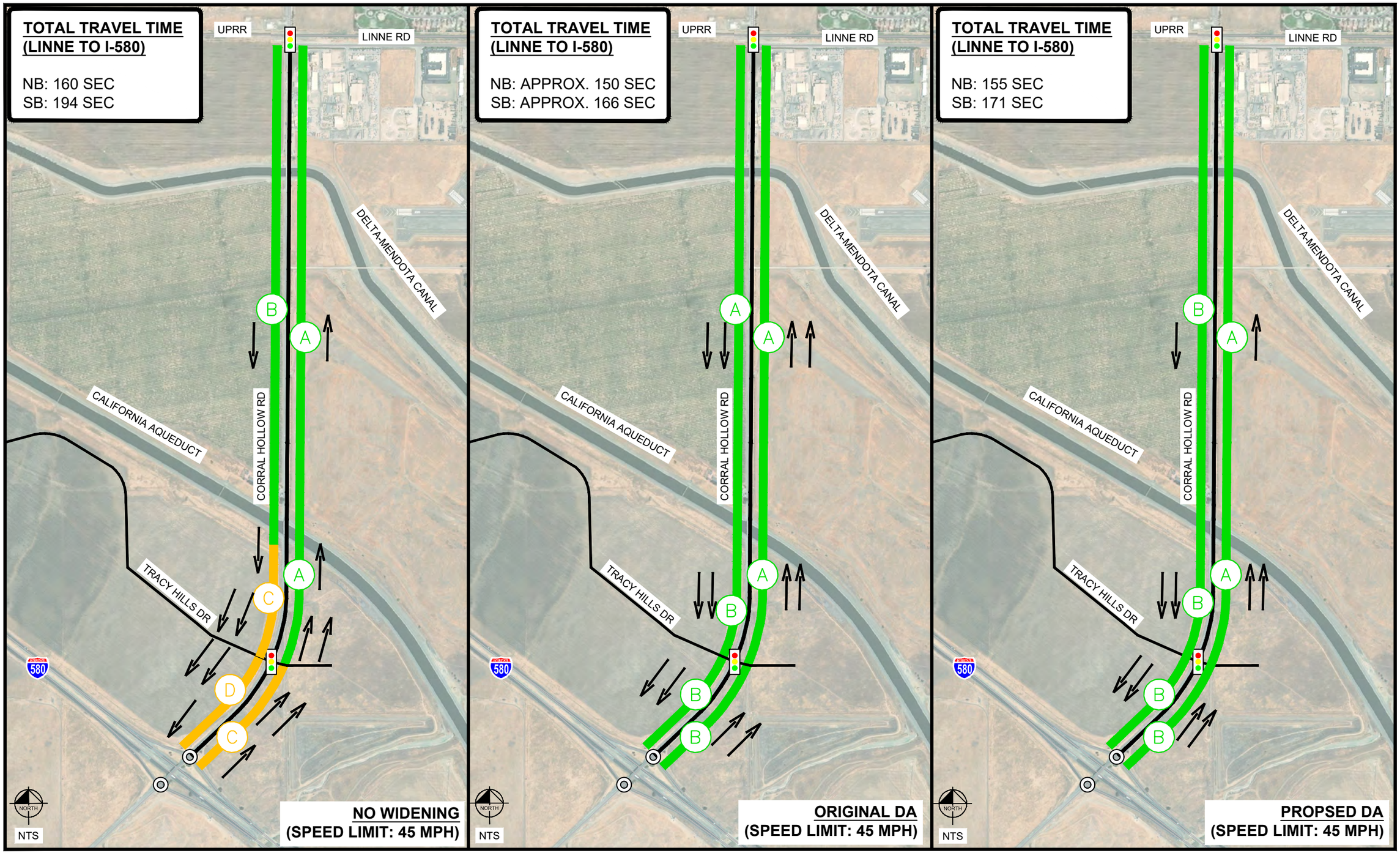
LEGEND

- PROJECT CORRIDOR
- LOS A TO LOS B
- LOS C TO LOS D
- LOS E TO LOS F
- # OF LANES PER SEGMENT
- STOP CONTROL
- SIGNAL CONTROL

Figure 2
Year 2021 (PM Peak Hour)
Traffic Analysis Results

October 2020

Tracy Hills Proposed DA Traffic Review



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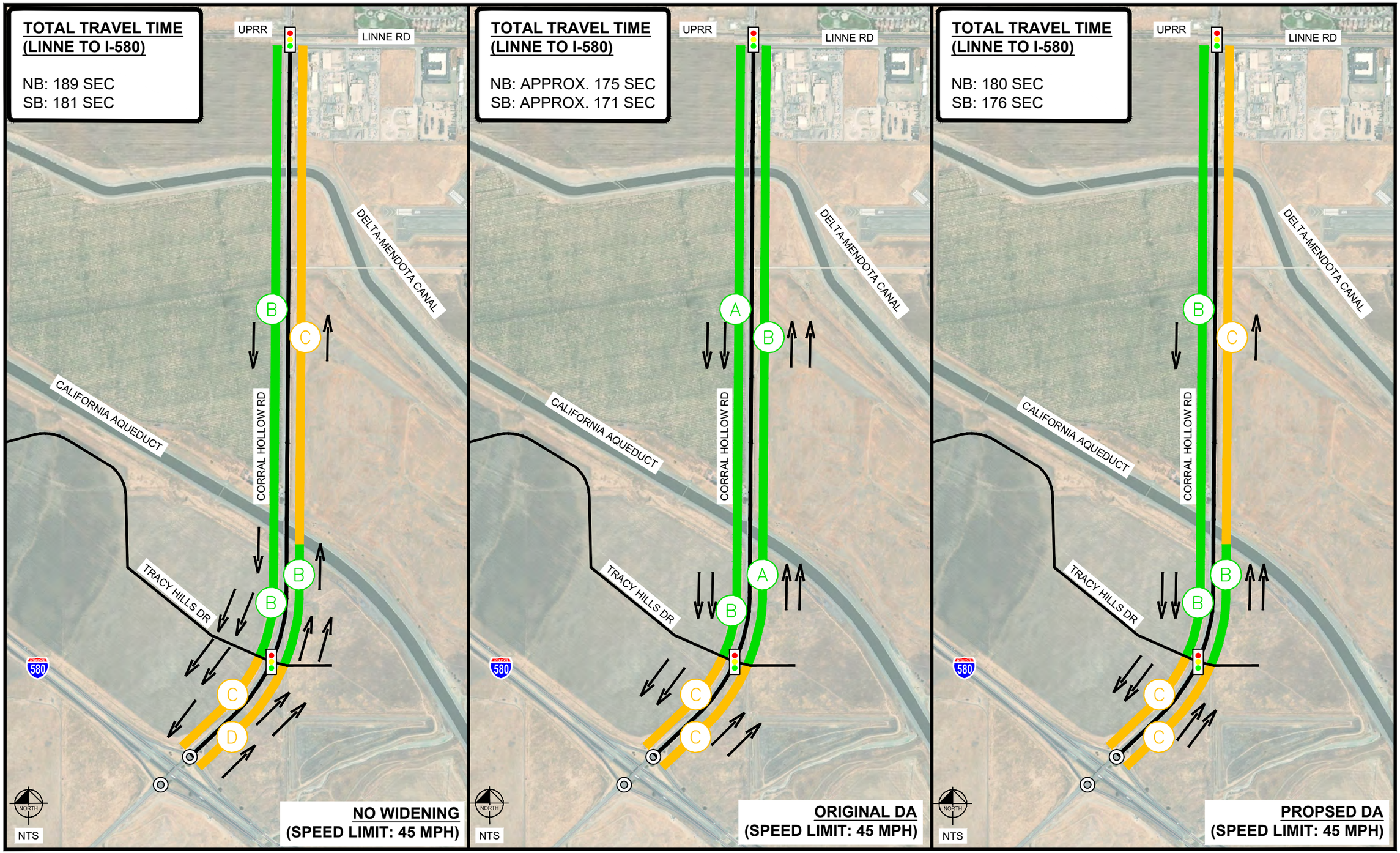
LEGEND

- PROJECT CORRIDOR
- LOS A TO LOS B
- LOS C TO LOS D
- LOS E TO LOS F
- # OF LANES PER SEGMENT
- STOP CONTROL
- SIGNAL CONTROL
- ROUNDABOUT

Figure 3
Year 2024 (AM Peak Hour)
Traffic Analysis Results

October 2020

Tracy Hills Proposed DA Traffic Review



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LEGEND

- PROJECT CORRIDOR
- LOS A TO LOS B
- LOS C TO LOS D
- LOS E TO LOS F
- # OF LANES PER SEGMENT
- STOP CONTROL
- SIGNAL CONTROL
- ROUNDABOUT

Figure 4
Year 2024 (PM Peak Hour)
Traffic Analysis Results

October 2020

Tracy Hills Proposed DA Traffic Review

5. Bike and Pedestrian Connectivity

Bike and pedestrian connectivity were also reviewed for both the original DA and the proposed DA scenario. No bike or pedestrian facilities currently exist south of Linne Road which creates a gap between the Tracy Hills development and the City of Tracy.

The original DA would provide approximately 1.0 mile of bike and pedestrian improvements along Corral Hollow Road from Linne Road to just south of the California Aqueduct. In addition, once the intersection of Corral Hollow Road and Linne Road is constructed these improvements would provide more connectivity to/from the southern edge of Tracy and future developments.

The proposed DA would provide approximately 0.5 miles of bike and pedestrian improvements along Corral Hollow Road; however, these improvements would only occur between the California Aqueduct and I-580. These improvements would isolate bike and pedestrian users from the City of Tracy until improvements from Linne Road to the California Aqueduct are constructed.

ORDINANCE _____

AN ORDINANCE OF THE CITY OF TRACY APPROVING THE FIRST AMENDMENT TO THAT CERTAIN DEVELOPMENT AGREEMENT AMENDMENT BY AND BETWEEN THE CITY OF TRACY AND THE TRACY HILLS PROJECT OWNER, LLC AND TRACY PHASE 1, LLC, APPLICATION NUMBER DA20-0001

WHEREAS, On April 5, 2016, the City Council of the City of Tracy adopted the Tracy Hills Specific Plan (the "**THSP**"), and also approved that certain Development Agreement By And Between The City Of Tracy, The Tracy Hills Project Owner, LLC, And Tracy Phase I, LLC recorded in the official records of San Joaquin County as Document Number 2016-066658 (the "**DA**"), and

WHEREAS, At the same time, the City Council also approved a Large Lot Vesting Tentative Subdivision Map (Application Number T0S0M116) and a Small Lot Vesting Tentative Subdivision Map (Application Number T0S0M0153), the approvals of which were subject to various Conditions of Approval relating to development of the THSP area (the "**Conditions of Approval**"), and

WHEREAS, The THSP, the DA and the Conditions of Approval (collectively, the "**Project Approvals**") impose various obligations on The Tracy Hills Project Owner, LLC and Tracy Phase I, LLC (together, "**Developer**") relating to development of the THSP area including, among other things, the construction of various transportation infrastructure improvements, and

WHEREAS, Among the transportation infrastructure improvements required by the Project Approvals are certain interim improvements at the intersection of Corral Hollow Road and Linne Road, which are described in Condition of Approval Number C.2.7.8.c and are hereinafter referred to as the "**Interim Road Improvements**". The Interim Road Improvements are described in the exhibits to that certain City of Tracy, Deferred Improvement Agreement, Tracy Hills – Phase 1A, recorded in the official records of San Joaquin County as Document Number 2018-016153, in Exhibit B-2 (page 31 of 45) and also in Exhibit C (Section II.S.c on page 11 of 14), and

WHEREAS, On December 17, 2019, the City, Developer, and certain affiliates of Developer entered into a Settlement Agreement to resolve disputes between the City, Developer and the affiliates relating to the application to the Project of the San Joaquin Council of Governments Regional Transportation Impact Fee and the Tracy Infrastructure Master Plan's Development Impact Fees. Under the Settlement Agreement, the City and Developer agreed that the City would assume the obligation to construct the Interim Road Improvements, and

WHEREAS, On January 9, 2020, Developer submitted a written application to the City to amend the DA to modify its provisions relating to (a) the timing and construction of Corral Hollow Road improvements, (b) benefit districts to recover fair share costs of program and non-program public improvements, (c) provisions for recycled water infrastructure, and (d) Residential Growth Allotments ("**RGAs**") and the life of building permits, and

WHEREAS, Between July 7 and October 28, 2020, the City and Developer negotiated, refined and modified Developer's proposal to amend the DA, which modified proposal is reflected in that certain First Amendment to Development Agreement By And Between The City

Of Tracy, The Tracy Hills Project Owner, LLC, And Tracy Phase I, LLC, a copy of which is attached as Exhibit "A" hereto (hereafter, the "**First Amendment**"), and

WHEREAS, The City has evaluated the potential effects of this First Amendment on the environment and considered its consistency with City policies in accordance with applicable requirements of the California Environmental Quality Act ("**CEQA**"), its implementing regulations (the "**CEQA Guidelines**"), and applicable provisions of the Tracy Municipal Code, and determined that the First Amendment is within the scope of the development program evaluated in the Final Supplemental Environmental Impact Report certified by the City on April 5, 2016 (State Clearinghouse # 2013102053) (the "**FSEIR**") in connection with its adoption of the THSP and approval of the DA, and

WHEREAS, On October 28, 2020, the City of Tracy's Planning Commission conducted a duly noticed public hearing on Developer's application to amend the DA as set forth in this First Amendment in accordance with all applicable requirements of the State law and the City of Tracy Municipal Code, and

WHEREAS, On November 10, 2020, the City Council of the City of Tracy conducted a duly noticed public hearing on the proposed First Amendment, and performed its first reading of the proposed First Amendment, in accordance with all applicable requirements of the State law and the City of Tracy Municipal Code, and

WHEREAS, On December ___, 2020, the City Council conducted its second reading of Ordinance approving the First Amendment;

NOW, THEREFORE, BE IT RESOLVED, As follows:

The City Council of the City of Tracy does ordain as follows:

1. Recitals. The foregoing recitals are true and correct and are incorporated herein as findings.

2. Compliance with CEQA. The potential changes to the DA and the Project are within the scope of the development program that was described and evaluated in the FSEIR and therefore, pursuant to the applicable requirements of CEQA and the CEQA Guidelines, no further environmental review is required for the First Amendment.

3. Findings regarding Development Agreement. The City Council finds that the proposed Development Agreement:

a. is consistent with the objectives, policies, general land uses and programs specified in the City General Plan (attached hereto as Exhibit "2" Consistency findings between the General Plan and the Development Agreement) and the Tracy Hills Specific Plan, as amended;

b. is in conformity with public convenience, general welfare, and good land use practices;

c. will not be detrimental to the health, safety, and general welfare of persons residing in the immediate area, nor be detrimental or injurious to property or

persons in the general neighborhood or to the general welfare of the residents of the City as a whole;

d. will not adversely affect the orderly development of property or the preservation of property values, and

e. is consistent with the provisions of Government Code Sections 65864 et seq.

4. Approval of First Amendment to Development Agreement. The City Council hereby approves the First Amendment to Development Agreement by and between the City of Tracy, The Tracy Hills Project Owner, LLC, and Tracy Phase 1, LLC, in the form attached hereto as Exhibit "A".

5. Effective Date. This Ordinance takes effect 30 days after its final passage and adoption.

6. Publication. This Ordinance shall either (1) be published once in a newspaper of general circulation, within 15 days after its final adoption, or (2) be published in summary form and posted in the City Clerk's office at least five days before the ordinance is adopted and within 15 days after adoption, with the names of the Council Members voting for and against the ordinance. (Gov't. Code §36933.)

* *

The foregoing Ordinance _____ was introduced at a special meeting of the Tracy City Council on the 10th day of November 2020, and finally adopted on the ___ day of _____, 2020, by the following vote:

AYES: COUNCIL MEMBERS:
NOES: COUNCIL MEMBERS:
ABSENT: COUNCIL MEMBERS:
ABSTAIN: COUNCIL MEMBERS:

_____
MAYOR

ATTEST:

_____
CITY CLERK

Exhibit A

Recording Requested By:

City of Tracy
Development Services
333 Civic Center Plaza
Tracy, CA 95376

And When Recorded Mail To:

City of Tracy
Office of the City Clerk
333 Civic Center Plaza
Tracy, CA 95376
Attn: Adrianne Richardson

SPACE ABOVE THIS LINE FOR RECORDER'S INFORMATION

CITY OF TRACY
FIRST AMENDMENT TO DEVELOPMENT AGREEMENT BY AND BETWEEN THE CITY OF TRACY AND THE TRACY HILLS PROJECT OWNER, LLC AND TRACY PHASE I, LLC

This **FIRST AMENDMENT TO DEVELOPMENT AGREEMENT BY AND AMONG THE CITY OF TRACY, THE TRACY HILLS PROJECT OWNER, LLC, AND TRACY PHASE I, LLC ,** (hereinafter "**First Amendment**") is made and entered into by and between the **CITY OF TRACY**, a municipal corporation (hereinafter "**City**"), on one hand, and **TRACY PHASE I, LLC,** a Delaware limited liability company, **TRACY PHASE IB, LLC,** a Delaware limited liability company, **TRACY PHASE 2, LLC**, a Delaware limited liability company, **TRACY PHASE 3**, LLC, a Delaware limited liability company, **TRACY PHASE 4**, LLC, a Delaware limited liability company, and **TRACY BPS, LLC,** a Delaware limited liability company, on the other hand (collectively, "**Developer**").

RECITALS

A. On April 5, 2016, the City Council of the City of Tracy adopted the Tracy Hills Specific Plan (the "**THSP**"), and also approved that certain Development Agreement between City and Developer (more specifically, Tracy Phase I, LLC and The Tracy Hills Project Owner, LLC, the predecessor-in-interest to Tracy Phase 1B, LLC, Tracy Phase 2, LLC, Tracy Phase 3, LLC, Tracy Phase 4, LLC, and Tracy BPS, LLC) recorded in the official records of San Joaquin County as Document Number 2016-066658 (the "**DA**").

B. At the same time, the City Council also approved a Large Lot Vesting Tentative Subdivision Map (Application Number T0S0M116) and a Small Lot Vesting Tentative Subdivision Map (Application Number T0S0M0153), the approvals of which were subject to various Conditions of Approval relating to development of the THSP area (the "**Conditions of Approval**").

C. The THSP, the DA and the Conditions of Approval (collectively, the "**Project Approvals**") impose various obligations on Developer relating to development of the THSP area including, among other things, the construction of various transportation infrastructure improvements.

D. On December 17, 2019, City, Developer, and certain affiliates of Developer entered into a Settlement Agreement to resolve disputes between City, Developer and the affiliates relating to the application to the Project of the San Joaquin Council of Governments Regional Transportation Impact Fee and the Tracy Infrastructure Master Plan's Development Impact Fees. Under the Settlement Agreement, City and Developer agreed that City would assume the obligation to construct the certain road Improvements on Linne Road from Corral Hollow Road to McArthur Boulevard identified in the DA in Section 3.3(b)(iii).

E. On January 9, 2020, Developer submitted a written application to City to amend the DA to modify its provisions relating to (a) the timing and construction of Corral Hollow Road improvements in Section 3.4(d), (b) benefit districts to recover fair share costs of program and non-program public improvements, (c) provisions for recycled water infrastructure, and (d) Residential Growth Allotments ("**RGAs**") and the life of building permits.

F. Between July 8 and October 28, 2020, City and Developer negotiated, refined and modified Developer's proposal to amend the DA, which modified proposal is reflected in this First Amendment, and City evaluated the potential effects of this First Amendment on the environment and considered its consistency with City policies in accordance with applicable requirements of the California Environmental Quality Act, State laws, and the City of Tracy Municipal Code.

G. On October 28, 2020, the City of Tracy's Planning Commission conducted a duly noticed public hearing on Developer's application to amend the DA as set forth in this First Amendment in accordance with all applicable requirements of the State law and the City of Tracy Municipal Code, after which the Planning Commission recommended to the City Council that the City Council _____ this First Amendment.

H. On the ___ day of _____ , 2020, the City Council of the City of Tracy conducted a duly noticed public hearing on and conducted the first reading of Ordinance _____ to approve Developer's proposed First Amendment to the DA, after which the City Council voted by a majority of its members to approve said Ordinance and the proposed First Amendment.

I. On the ____ day of _____, 2020, the City Council conducted its second reading of and approved Ordinance _____, which took effect on the _____ day of _____, 2021.

J. With this First Amendment, City and Developer hereby amend the DA as provided herein.

NOW THEREFORE, CITY AND DEVELOPER MUTUALLY AGREE AS FOLLOWS:

1. <u>AMENDMENTS TO THE DEVELOPMENT AGREEMENT</u>.

1.1. <u>Amendment to Section 3.3</u>. Section 3.3 is deleted and replaced in its entirety with the following:

"3.3 Fees, Credits and Reimbursements

(a) Developer shall pay all applicable City fees, including without limitation those set forth in the City's Municipal Code (including but not limited to the Development Impact Fees) and the Master Plans as set forth in this Section 3.3. The time for Developer's payment of applicable Development Impact Fees shall be established by and set forth in a contract executed by the City and Developer pursuant to Government Code section 66007(c).

(b) At the time of Developer's payment of all City Traffic Impact Fees (i.e., TIMP—Traffic), Developer shall make such payments, and City shall allocate such payments, as follows:

(i) Developer will pay to City in cash fifteen percent (15%) of Developer's gross Traffic Impact Fee (TIF) obligation. Such 15% of Developer's TIF payments shall be allocated to master plan transportation improvement projects and master plan program management costs as the City deems appropriate, in its sole and exclusive discretion;

(ii) To the extent that Developer has accrued credits against its TIF payment obligations, Developer may (in Developer's sole and exclusive discretion) apply all or any portion of such credits against the remaining eighty-five percent (85%) balance of Developer's then-outstanding gross TIF obligation; and

(iii) To the extent that Developer's credits are not sufficient to fully satisfy such 85% balance, or to the extent that Developer does not elect to apply its accrued credits to such 85% balance, Developer shall pay the remainder of such 85% balance in cash to the City. Until the City's completion of its final inspection of the structure that is projected in the EIR to generate the two thousand five hundred and eighty-eighth (2,588th) am peak hour trip within the Tracy Hills Specific Plan area, the City shall, at the direction of Developer, appropriate such cash payments into one or more of the Capital Improvement Program (CIP) fund(s) created for the following improvements:

- All I-580 interchange improvements at Corral Hollow Road;
- All required improvements to Corral Hollow Road from Linne Road to the southern Property boundary, including railroad and canal crossings;
- All I-580 interchange improvements at Lammers Road;
- All required improvements to Lammers Road from Old Schulte Road to I-580, including railroad and canal crossings; and
- Linne Road improvements from Corral Hollow Road to McArthur Boulevard.

Notwithstanding the foregoing, the first one million six hundred thousand dollars ($1,600,000) of cash payments by Developer to satisfy the remainder of the 85% balance of Developer's TIF payment obligation described above shall be appropriated into the CIP fund for the portion of the Corral Hollow Road and Linne

Road widening projects that are associated with the intersection of those two roads. From and after the City's completion of its final inspection of the structure that is projected in the EIR to generate the two thousand five hundred and eighty-eighth (2,588th) am peak hour trip within the Tracy Hills Specific Plan area, the City shall, in consultation with the Developer, appropriate such cash payments into one or more of the Capital Improvement Program (CIP) fund(s) indicated immediately hereinabove.

(iv) Prior to initiating construction of each improvement described in Section 3.3(b)(iii), the City and Developer shall enter into an Off-Site Improvement Agreement ("OIA") to provide for and govern the construction of such improvement. Among other things, and notwithstanding any contrary provisions in this Agreement or the City of Tracy Municipal Code, the OIA shall advance the date upon which Developer is eligible for reimbursement of costs incurred in connection with the design, permitting and construction of the improvement to the date that the City Council accepts the completed improvement.

(c) Subject to Developer's compliance with the requirements of Section 4.8 below, Developer shall be eligible for a credit against Developer's obligation to pay Public Safety Facilities Impact fees consistent with the provisions and requirements of this Section 3.3, Section 3.4 and Section 4.8 below.

(d) Except as specifically set forth in Section 3.3(b)(iii) and (iv), all credits and reimbursements available to Developer, including without limitation credits and reimbursements available as a result of Developer's election to fund, design and/or construct Master Plan Infrastructure under Section 3.4 below, shall be determined and granted according to the Existing Rules. City hereby agrees that, where Developer is eligible under the Existing Rules, based upon any specific expenditure, for both credit against future fees and reimbursement, Developer may elect to receive credit (consistent with applicable Existing Rules) against future fees paid for Project development rather than reimbursement. Developer and City shall enter into improvement agreements as required by T.M.C. § 13.08.010 to allocate credits, identify the amount of credits, and to allocate credit to specific developments. Developer is not required to allocate such credit pro rata or via any specific formula, but may allocate, pursuant to the procedures in § 13.08.010, in such manner and pursuant to such formula as it deems appropriate in its sole and absolute discretion, subject to all other requirements such as availability of credits and use of credits only for "like-kind" impact fees. Given the scale of the Project and the large initial investment in many improvements that will qualify for credit, it is anticipated that Developer shall have balances of available credits confirmed by improvement agreements in advance of actual building permit issuance. In such event, Developer may allocate such credits to specific lots by a subsequent written direction to the City Engineer indicating the available credits being applied to specific lots."

1.2. Amendment to Section 3.4(d). Section 3.4(d) of the DA is deleted and replaced in its entirety with the following:

"(d) Construction of Corral Hollow Road Improvements. Any and all other language in this Agreement, the EIR or the MMRP to the contrary notwithstanding, Developer and City hereby agree that Developer shall complete the Corral Hollow Road widening and associated improvements at the following times: (A) upon approval by the City of designs prepared by Developer, Developer shall use commercially reasonable efforts to proceed to install (i) roadway widening within existing City right-of-way between the CalTrans right-of-way and the future location of the southern terminus of the planned Corral Hollow bridge at the California Aqueduct, (ii) sidewalks along the roadway described in the preceding subsection (i) which are adjacent to Developer's land zoned mixed use business park or adjacent to the KT Project or where they can be installed within existing City right-of-way, and (iii) upon approval by Caltrans (to be obtained by City), the traffic control improvements on the eastbound side of I-580 at the Corral Hollow/Interstate I-580 off ramps, subject to approval by Caltrans, and (B) upon the City's completion of the final inspection of the structure that will contain the two thousand six hundredth (2,600th) dwelling unit in the Project, Developer shall commence construction of the widening of Corral Hollow Road from the southern terminus of the bridge crossing the California Aqueduct to the intersection with Linne Road, as described in Mitigation Measure 4.13-5b of the EIR (collectively, the "CH Widening Work"). Upon execution of an Offsite Improvement Agreement with appropriate security (as determined by the City) for the CH Widening Work or a portion thereof consistent with the Transportation Master Plan (as determined by the City Engineer), Developer shall be entitled to a credit against subsequently-due Transportation Impact Fees in an amount equal to one-third (1/3) of the costs of the sidewalks completed as part of the CH Widening Work, as well as such credits as may be available to Developer for the non-sidewalk components of the CH Widening Work under Section 3.3(d) of this Agreement. At the appropriate time, as determined by the City, Developer shall cooperate with the City to form a Benefit District to secure reimbursement to the City of one-third (1/3) of the costs of the sidewalks from the benefitting property owners. At the appropriate time, as determined by Developer, City shall cooperate with Developer to secure reimbursement to Developer of two-thirds (2/3) of the costs of the sidewalks and the costs of all right-of-way acquisitions, which reimbursements may be through a Benefit District or may be through some other mechanism for reimbursement consistent with then-existing City policies and requirements for reimbursements."

1.3. Amendment to Section 3.4(e)(v). Section 3.4(e)(v) of the DA is deleted and replaced in its entirety with the following:

"(v) Developer hereby acknowledges and agrees that Developer is not, and shall not be, eligible for any credits(s) against any City fees, or any reimbursement(s) from City of any costs incurred by Developer in funding, designing or constructing non-Master Plan infrastructure, based on Developer's election fund, design and/or construct non-Master Plan infrastructure pursuant to this Section 3.4(e). This section (v) does not limit Developer's rights to seek reimbursement from other benefitted property owners."

1.4. Addition of Section 3.9. A new Section 3.9 is hereby added to the DA as follows:

"3.9 Residential Growth Allotment Procedures.

(a) Each Residential Growth Allotment ("RGA") properly allocated to Developer pursuant to the applicable provisions of the City's adopted Growth Management Ordinance ("GMO") Guidelines (Resolution 2014-145, adopted September 2, 2014), as they may be amended, shall be deemed by the City to be "perfected" when a "building permit" is issued consistent with the provisions of this Section 3.9.

(b) For purposes of this Section 3.9, the type of "building permit" that will be effective to "perfect" a RGA may be a plumbing permit or may be another type of permit approved by the City, provided that if Developer wishes to rely on a plumbing permit to perfect an RGA, the following requirements must be met:

(i) The lot that corresponds to the plumbing permit is within a residential subdivision described on a tentative subdivision map that has been approved by the City;

(ii) The application for the plumbing permit is accompanied by a plot plan that clearly identifies and describes (a) the land on which the proposed work is to be done by legal description, street address or similar description, and (b) locations of the water and sewer service lines for each dwelling unit proposed to be constructed and any other work that may be completed pursuant to the plumbing permit.

(iii) An inspection fee is paid in an amount sufficient to fund the City's inspection of the work authorized by the plumbing permit. Said fee shall be based on the City's Master Fee Schedule adopted by City Council."

1.5. Amendment to Section 4.8(a). Section 4.8(a) is deleted and replaced in its entirety with the following:

(a) Fire Station

The following provisions shall be implemented by the City and Developer for construction of the first fire station on the Property, unless otherwise agreed to in writing by City and Developer. In the absence of such other written agreement, Developer shall design and construct the first fire station within twenty-four (24) months of the Effective Date of this Agreement according to the following terms and conditions:

(i) Not later than thirty (30) days from the Effective Date of this Agreement, City and Developer shall execute an improvement agreement providing for City's and Developer's site acquisition, design and construction of the first fire station (the "Fire Station Agreement") consistent with the following:

(1) Developer shall commence work on the design and construction documents for the fire station within ten (10) days following City's

selection of a fire station site, and construction documents shall be completed no later than nine (9) months (270 days) from the execution of the Fire Station Agreement.

(2) City shall select the fire station site no later than sixty (60) days from the execution of the Fire Station Agreement.

(3) City shall approve the construction documents no later than three (3) months (ninety (90) days) from Developer's submittal of the construction documents.

(4) Not later than sixty (60) days from the date that the City has approved the construction documents for the fire station, Developer shall commence construction of the fire station.

(ii) The fire station shall be complete one year after the commencement of construction.

(iii) The fire station shall be built in accordance with all requirements of the Public Safety Master Plan (as may be amended by the City).

The Developer shall pay the first six million nine hundred thousand dollars ($6.9 million) of costs associated with the site acquisition, design and construction of the fire station. The City shall pay all remaining costs associated with completion of the fire station.

2. **SIGNATURES.** The individuals executing this First Amendment represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this First Amendment on behalf of the respective legal entities of Developer and City. This First Amendment shall inure to the benefit of and be binding upon Developer and City and their respective successors and assigns.

3. **EFFECT OF AMENDMENT.** This First Amendment hereby affirms all terms and conditions set forth in the DA unless specifically modified by this First Amendment. In the event of a conflict between this First Amendment and the DA, this First Amendment shall control. All terms and conditions set forth in the DA not specifically modified by this First Amendment shall remain in full force and effect.

IN WITNESS WHEREOF, City and Developer hereby agree to the full performance of the terms set forth herein.

CITY OF TRACY, a municipal corporation _____ By: Robert Rickman Title: MAYOR Date: _____ Attest:	DEVELOPER: Tracy BPS, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____

_____ By: Adrianne Richardson Title: CITY CLERK Date: _____ Approved as to Form: _____ By: Leticia Ramirez Title: CITY ATTORNEY Date: _____	Tracy Phase I, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____ Tracy Phase IB, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____ Tracy Phase 2, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____ Tracy Phase 3, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____ Tracy Phase 4, LLC, a Delaware limited liability company _____ By: John Stanek Title: Authorized Representative Date: _____

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of Orange)

On November 5, 2020, before me, B. Barregar,
(insert name and title of the officer)
Notary Public, personally appeared John Stanek,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

B. BARREGAR
Notary Public - California
Orange County
Commission # 2274078
My Comm. Expires Jan 28, 2023

Signature B. Barr (Seal)

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