



# CITY OF CARSON

## PLANNING COMMISSION STAFF REPORT

**PUBLIC HEARING:** June 14, 2022

**SUBJECT:** Site Plan and Design Review (DOR) No. 1855-21

**APPLICANT:** In-N-Out Burger  
Attention: Marc Levun  
13502 Hamburger Lane  
Baldwin Park, CA 91706

**PROPERTY OWNER:** J & J Carson, LLC  
5850 Canoga Avenue #650  
Woodland Hills, CA 91367

**REQUEST:** Consider approval of a proposed In-N-Out restaurant with Drive-Thru.

**PROPERTY INVOLVED:** 20512 S. Avalon Boulevard

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### COMMISSION ACTION

AYE	NO		AYE	NO	
		<b>Chairperson (Vacant)</b>			<b>Hernandez</b>
		<b>Vice-Chair Palmer</b>			<b>Huff</b>
		<b>Diaz</b>			<b>Monteclaro</b>
		<b>Docdocil</b>			<b>Rashad</b>
		<b>Guerra</b>			<b>D. Thomas</b>
					<b>Alt. (Vacant)</b> <b>Alt. Mfume</b> <b>Alt. Wilson</b>

***Item No. 5A***

## **I. Introduction**

Applicant  
In-N-Out Burger  
Attention: Marc Levun  
13502 Hamburger Lane  
Baldwin Park, CA 91706

Property Owner  
J & J Carson, LLC  
5850 Canoga Avenue #650  
Woodland Hills, CA 91367

## **II. Project Description**

The applicant, In-N-Out Burger, requests approval of DOR No. 1855-21 to construct a new 3,885 square foot In-N-Out restaurant with drive-thru in the CR-D-MUR (Commercial, Regional Center; Design Overlay District; Mixed-Use Residential) zone.

Carson Municipal Code Section 9172.23 (Site Plan and Design Review) requires Planning Commission review of projects within the Design Overlay District having construction valuation of \$50,000 or more.

In-N-Out Burger is an American regional chain of fast-food restaurants with locations primarily in the western and southwestern United States. Its headquarters are in Baldwin Park, California. The company operates more than 350 restaurants, in 7 states. Hours of operation are Sunday through Thursday, 10:00 AM to 1:00 AM and Friday and Saturday, 10:00 AM to 1:30 AM.

## **III. Project Site and Surrounding Land Uses**

The subject property site is located in the CR-D-MUR zone and is designated Mixed Use Residential under the Land Use Element of the General Plan. The subject property is located at the intersection of Carson Plaza Drive and Avalon Boulevard.

Land uses surrounding the proposed project site are primarily commercial uses.



Figure (a) Project Site in context to surrounding zoning.



The following table provides a summary of information regarding the project site:

Site Information	
General Plan Land Use	Mixed-Use Residential
Zone District	CR-D-MUR (Commercial, Regional - Design Overlay District; Mixed-Use Residential)
Site Size	36,674 SF (0.8 acres)
Present Use and Development	Parking
Surrounding Uses/Zoning	North: Commercial, CR-D-MUR (Mixed-Use Residential) South: Commercial, CR-D-MUR (Mixed-Use Residential) East: Commercial, CR-D-MUR (Mixed-Use Residential) West: Commercial, CR-D
Access	Ingress/Egress: Avalon Boulevard & Del Amo Boulevard

#### **IV. Analysis**

##### **Site History**

The subject site was originally developed as a portion of the parking lot for the Carson Mall which was constructed as an indoor mall in 1973. As part of renovations in 1992, the name was changed to the South Bay Pavilion. The subject site measures approximately 36,674 square feet (0.8 acres) and is improved with stripped asphalt for parking and landscaping planters. The subject property is located on the northeast corner of Avalon Boulevard and Carson Plaza Drive and is surrounded by a variety of restaurants to the north, south and west, and the South Bay Pavilion to the east.



##### **Site Plan**

The subject property measures approximately 0.8 acres. The project will include the complete demolition and removal of the existing 36,674 square foot asphalt parking lot. The proposed drive-thru restaurant measures 3,885 square feet. The new restaurant will include Americans with Disabilities Act (ADA) accessible parking. In addition, there will be a new pedestrian hardscaped area, landscape planters with permanent irrigation and a new trash enclosure.

## Access

The applicant will maintain two existing ingress/egress driveways located along Avalon Boulevard and Del Amo Boulevard for vehicular access to the subject property.

## Parking & Traffic

### *Parking*

Carson Municipal Code (CMC) Section 9162.21 (Parking Spaces Required) generally requires 1 parking space for every 100 square-feet of gross floor area for dining and drinking establishments. The proposed restaurant with drive-thru would require 39 parking spaces (3,885 sf / 100 sf = 39 parking spaces) - 37 regular and 2 ADA compliant parking spaces. However, the proposed drive thru restaurant will share parking with the shopping center. The project will utilize a shared parking arrangement for the existing shopping center that includes the subject property.

The proposed project will reduce the overall number of shared parking spaces in the shopping center by 73 spaces, but will continue to result in a surplus of parking spaces (129 spaces) for the shopping center per the CMC (4,527 spaces existing, 4,398 spaces required per code).

### Traffic

The applicant submitted and the City traffic engineer reviewed a transportation impact analysis. The review from City staff confirmed the development will have minimal, if any, effects to nearby intersections. The proposed development is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour, 115 trips during the mid-day PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours which is deemed acceptable and consistent with the majority of roadways in the City of Carson, according to the Transportation and Infrastructure Element chapter of Carson's General Plan, Policy TI-2.1.

Adequate storage length is forecast to be provided for the westbound left turn into the shopping center from Del Amo Boulevard. The southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive is forecast to exceed the available storage length for opening year (2024) without and with Project conditions. To provide adequate stacking length for the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive, a condition of approval is included requiring the applicant/property owner to restripe the southbound approach of the intersection of Avalon Boulevard / Carson Plaza Drive to add a second southbound left turn lane. With the addition of project trips and implementation of these improvements, the southbound left queue lengths are forecast to be reduced by 105 to 138 feet relative to the no project condition. Therefore, the proposed project is forecast to result in no project-related queuing deficiencies for opening year (2024) with Project conditions with implementation of these improvements.

The drive-through lane will have a stacking capacity of 24 vehicles and is forecast to provide sufficient stacking area to accommodate both the average maximum queue of 22 vehicles and 85th-percentile maximum queue of 24 vehicles during the peak lunch and dinner hours for In-N-Out restaurants.

### Building and Architecture

The project is designed in a modern architectural style combining stucco, cloth awnings, and metal framed windows and doors to create interest in the façade. The material selection and featured articulation effectively breaks-up the facade and produces a modern design aesthetic. The project site is located within an existing regional shopping center and like existing restaurants will incorporate typical In-N-Out corporate design elements such as flat roof towers, architectural cornice detail at areas of flat roof parapets, red awnings and color accents, and a white façade. The project is compatible with the surrounding area in that it is in keeping with other commercial restaurants in the vicinity using similar massing, articulation, and fenestration.

### Signage

Carson Municipal Code Section 9136.7 (Signs) allows two square feet of signage for every one linear foot of lot frontage. The proposed restaurant with drive-thru has approximately 150' feet of lot frontage along Carson Street, allowing 300 (150 x 2 = 300) square feet of signage. The proposed signage will be in compliance with the South Bay Pavilion Sign Program. Signage will be reviewed and approved pursuant to a separate sign permit.

As part of the sign package, the applicant had requested a single-tenant monument sign identifying In-N-Out. However, the sign was not consistent with the existing monument signs for the mall which are mostly multi-tenant signs. Accordingly, after discussions with staff, the applicant is now proposing a multi-tenant monument sign concept that is consistent with the existing multi-tenant signs for the mall (Exhibit No. 4). Condition of Approval No. 7 in Section II (Aesthetics/Signage) of Exhibit No. 1.B. has been included to allow the Community Development Director to review and approve the sign in this concept, provided the Director determines it is in substantial compliance with Exhibit No.4 in terms of the proposed design and location.

### Landscaping

Carson Municipal Code Section 9162.52 (Landscaping Requirements) requires automobile parking facilities and any parking facilities visible from the public right-of-way to have interior landscaping of not less than 5%. The proposed restaurant with drive-thru requires a total of 1,759 (35,174 x .05 = 1,758.7) square feet of landscaping. The applicant proposes 7,651 square feet of landscaping which totals to about 21% of the land area.

## **V. CFD/DIF Discussion**

Developer is responsible for payment of interim development impact fees (IDIF) in accordance with Article XI (Interim Development Impact Fee Program) of the Carson Municipal Code, as set forth in Condition of Approval No. 1. The current Fiscal Year 2021-2022 fees (effective July 1, 2021 through June 30, 2022) are set at the rate of \$4.71 per square foot of commercial building constructed. The proposed development includes 3,885 square feet of commercial building space, which at current rates would obligate Developer to pay IDIF in the sum of \$18,298.35 [3,885 sq. ft. (Proposed Project) X \$4.71 per sq. ft. = \$18,298.35]. If the Project increases or decreases in size, the development impact fee amount will be adjusted accordingly at the same rate.

Final IDIF rates and amounts are calculated and due prior to issuance of the building permit(s). If the IDIF for the project is not paid by the end of the 2021-22 fiscal year (i.e., by June 30, 2022), a new IDIF rate/amount will apply for the period of July 1, 2022 through

June 30, 2023, based on the IDIF rate for Fiscal Year 2022-23, and so on for subsequent fiscal year(s). Therefore, if IDIF are paid for the project between July 1, 2022 to June 30, 2023, the required amount will be \$22,416.45, calculated as follows: 3,885 square feet X \$5.77 per square foot = \$22,416.45.

Based on the adopted CFD, the project is exempt due to the subject property's land use (commercial).

## **VI. Zoning and General Plan Consistency**

The proposed project is consistent with the standards of the CR (Commercial, Regional Center) zoning designation and Mixed-Use Residential land use designation and will remain consistent with the surrounding uses.

## **VII. Environmental Review**

Design related issues such as those found in Site Plan and Design Overlay Review No. 1855-21 have been found to be outside CEQA, as it is common sense that such design related issues do not relate to the potential for whether a project causes a significant effect on the environment. (*McCorkle Eastside Neighborhood Group v. City of St. Helena*, 31 Cal.App.5th 80 (2018)). The City cannot impose conditions of approval that constitute environmental impact mitigation measures exceeding the scope of City's review for Site Plan and Design Overlay Review No. 1855-21 under Carson Municipal Code Section 9172.23. Accordingly, the proposed project is not a discretionary "project" within the meaning of CEQA..

## **VIII. Public Notice**

Notice of public hearing was posted to the project site on June 2, 2022. Notices were mailed to property owners and occupants within a 750' radius on June 2, 2022. The agenda was posted at City Hall no less than 72 hours prior to the Planning Commission meeting.

## **IX. Recommendation**

That the Planning Commission:

- **ADOPT** Resolution No. 22-\_\_ , entitled "A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF CARSON APPROVING SITE PLAN AND DESIGN OVERLAY REVIEW NO. 1855-21 FOR A PROPOSED IN-N-OUT RESTAURANT AT 20512 S. AVALON BOULEVARD."

## **X. Exhibits**

1. Draft Resolution
  - A. *Legal Description*
  - B. *Conditions of Approval*
2. Development Plans
3. Transportation Impact Analysis
4. Proposed Multi-Tenant Monument Sign

Prepared by: Max Castillo, Assistant Planner

**CITY OF CARSON**  
**PLANNING COMMISSION**  
**RESOLUTION NO. 21- \_\_\_\_**

**A RESOLUTION OF THE PLANNING COMMISSION OF  
THE CITY OF CARSON APPROVING SITE PLAN AND  
DESIGN OVERLAY REVIEW NO. 1855-21 FOR A  
PROPOSED IN-N-OUT RESTAURANT AT 20512 S.  
AVALON BOULEVARD**

**WHEREAS**, on October 29, 2021, the Department of Community Development received an application from In-N-Out Burger, for real property located at 20512 S. Avalon Blvd. and legally described in Exhibit “A” attached hereto, requesting approval of Design Overlay Review No. 1855-21 to construct a new 3,885 square foot In-N-Out restaurant with drive-thru; and

**WHEREAS**, studies and investigations were made and a staff report with recommendations was submitted, and the Planning Commission, upon giving the required notice, did on the fourteenth day of June, conduct a duly noticed public hearing as required by law to consider said design overlay application. Notice of the hearing was originally posted and mailed to property owners and properties within a 750-foot radius of the project site by June 2, 2022; and

**NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF CARSON, CALIFORNIA, HEREBY RESOLVES AS FOLLOWS:**

**SECTION 1.** The Planning Commission finds that the foregoing recitals are true and correct, and are incorporated herein by reference.

**SECTION 2.** The Planning Commission finds as follows:

- a) The proposed project is consistent with the General Plan of the City of Carson. The project site has a General Plan Land Use designation of Mixed-Use Residential and the proposed fast-food drive-through restaurant development is compatible with the surrounding uses.
- b) The proposed project is compatible in architecture and design with existing and anticipated development in the vicinity, including the aspects of site planning, land coverage, landscaping, appearance and scale of structures, open spaces, and other features relative to a harmonious and attractive development of the area. The proposed project consists of developing a 3,885 square foot In-N-Out restaurant with drive-thru in place of existing asphalt parking. The project is compatible with the surrounding area in that it is in keeping with other commercial restaurants in the vicinity using similar massing, articulation and fenestration. The project site is located within an existing regional shopping center and like existing restaurants will incorporate typical In-N-Out corporate design elements such as flat roof towers, architectural cornice detail at areas of flat roof parapets, red awnings and color accents, and a white façade.
- c) The project design will allow for and promote safe and convenient circulation for pedestrians and vehicles.

**Evidence:** Carson Municipal Code (CMC) Section 9162.21 (Parking Spaces Required) generally requires 1 parking space for every 100 square-foot of gross floor area for dining

and drinking establishments. The proposed restaurant with drive-thru would require 39 parking spaces (3,885 sf / 100 sf = 39 parking spaces) 37 regular and 2 ADA compliant parking spaces. However, the proposed drive-thru restaurant will share parking with the existing shopping center that includes the subject property, utilizing a shared parking arrangement. The proposed project will reduce the overall number of shared parking spaces in the shopping center by 73 spaces, but will continue to result in a surplus of parking spaces (129 spaces) for the shopping center per the CMC (4,527 spaces existing, 4,398 spaces required per code).

The applicant submitted and the City Traffic Engineer reviewed a transportation impact analysis. The review from City staff confirmed the development will have minimal, if any, effects to nearby intersections. The proposed development is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour, 115 trips during the mid-day PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour. The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours which is deemed acceptable and consistent with the majority of roadways in the City of Carson, according to the Transportation and Infrastructure Element chapter of Carson's General Plan, Policy TI-2.1.

According to the study, adequate storage length is forecast to be provided for the westbound left turn into the shopping center from Del Amo Boulevard, but the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive is forecast to exceed the available storage length for opening year (2024) without and with Project conditions. To provide adequate stacking length for the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive, a condition of approval is being imposed on the project requiring the applicant/property owner to restripe the southbound approach of the intersection of Avalon Boulevard / Carson Plaza Drive to add a second southbound left turn lane. As the study found, with the addition of project trips and implementation of these improvements, the southbound left queue lengths are forecast to be reduced by 105 to 138 feet relative to the no project condition. Therefore, the proposed project is forecast to result in no project-related queuing deficiencies for opening year (2024) with project conditions with implementation of these improvements.

The drive-through lane will have a stacking capacity of 24 vehicles and is forecast to provide sufficient stacking area to accommodate both the average maximum queue of 22 vehicles and 85th-percentile maximum queue of 24 vehicles during the peak lunch and dinner hours for In-N-Out restaurants.

Accordingly, the finding required by CMC 9172.23(D)(1)(c) is made in the affirmative.

- d) All signage associated with this project shall comply with applicable Carson Municipal Code provisions, and shall exhibit attractiveness, effectiveness and restraint in signing graphics and color.

The applicant is proposing a multi-tenant monument sign concept that is consistent with the existing multi-tenant signs for the mall. A Condition of Approval has been included to allow the Community Development Director to review and approve the sign in this concept, provided the Director determines it is in substantial compliance with Exhibit No. 4 to the June 14, 2022 Planning Commission staff report pertaining to consideration of the entitlement approved in this Resolution, both in terms of the proposed design and location.



- e) The proposed development will be in one phase (i.e., will not be a phased development).
- f) The required findings pursuant to Section 9172.23 (D), “Site Plan and Design Review”, can be and are made in the affirmative.

**SECTION 3.** Design related issues such as those found in Site Plan and Design Overlay Review No. 1855-21 have been found to be outside CEQA, as it is common sense that such design related issues do not relate to the potential for whether a project causes a significant effect on the environment. (*McCorkle Eastside Neighborhood Group v. City of St. Helena*, 31 Cal.App.5th 80 (2018)). The City cannot impose conditions of approval that constitute environmental impact mitigation measures exceeding the scope of City’s review for Site Plan and Design Overlay Review No. 1855-21 under Carson Municipal Code Section 9172.23. Accordingly, the proposed project is not a discretionary “project” within the meaning of CEQA. A Notice of Exemption shall be filed with the County Clerk of the County of Los Angeles pursuant to the California Environmental Quality Act.

**SECTION 4.** The Planning Commission of the City of Carson, pursuant to the findings noted above, does hereby approve Design Overlay Review No. 1855-21 to construct a new 3,885 square foot In-N-Out restaurant with drive-thru at 20512 S. Avalon Boulevard, subject to the Conditions of Approval contained in Exhibit “B,” attached hereto.

**SECTION 5.** This decision of the Planning Commission shall become effective and final 15 days after the date of the action unless an appeal is filed in accordance with Section 9173.4 of the Zoning Ordinance.

**SECTION 6.** The Secretary of the Planning Commission shall certify to the adoption of this Resolution.

**PASSED, APPROVED and ADOPTED** this 14<sup>th</sup> day of June, 2022.

\_\_\_\_\_  
**CHAIRPERSON**

**ATTEST:**

\_\_\_\_\_  
**SECRETARY**

## **EXHIBIT "A"**

### **Legal Description**

The Land referred to herein below is situated in the City of Carson, County of Los Angeles, State of California, and is described as follows:

#### **PARCEL ONE:**

PARCELS 1, 2 AND 3, INCLUSIVE, IN THE CITY OF CARSON, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON PARCEL MAP NO. 71684, FILED OCTOBER 2, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 TO 88, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT ALL 100 PERCENT OF THE OIL, GAS, PETROLEUM, AND OTHER HYDROCARBON SUBSTANCES WHICH LIE BELOW A PLANE PARALLEL TO AND 500 FEET BELOW THE NATURAL SURFACE OF SAID LAND WITHOUT, ANY RIGHT TO ENTER UPON THE SURFACE OF SAID LAND TO EXPLORE FOR, DEVELOP, OR REMOVE SAID SUBSTANCES, BUT WITH FULL RIGHT TO EXPLORE FOR, DEVELOP AND REMOVE THE SAME BY MEANS OF WELLS OR EQUIPMENT, HAVING SURFACE LOCATIONS OUTSIDE THE OUTER BOUNDARIES OF SAID REAL PROPERTY, IN AND UNDER OR RECOVERABLE FROM SAID REAL PROPERTY, AS EXCEPTED IN THE DEED FROM DEL AMO ESTATE COMPANY, A CORPORATION, RECORDED NOVEMBER 8, 1963 IN BOOK D2250 PAGE 752, OFFICIAL RECORDS.

#### **PARCEL TWO:**

NON-EXCLUSIVE EASEMENTS FOR INGRESS AND EGRESS, THE PASSAGE AND PARKING OF VEHICLES, THE PASSAGE AND ACCOMMODATION OF PEDESTRIANS AND FOR THE INSTALLATION, OPERATION, MAINTENANCE, REPAIR, RELOCATION AND REMOVAL OF UTILITIES AND INCIDENTAL PURPOSES, OVER AND ACROSS THE "COMMON AREAS" AS SET FORTH, DEPICTED AND DESCRIBED IN THAT CERTAIN DOCUMENT ENTITLED CONSTRUCTION, OPERATION AND RECIPROCAL EASEMENT AGREEMENT RECORDED MARCH 28, 1972 AS INSTRUMENT NO. 2971 OF OFFICIAL RECORDS; AND THAT CERTAIN FIRST AMENDMENT TO CONSTRUCTION OPERATION AND RECIPROCAL EASEMENT AGREEMENT RECORDED FEBRUARY 6, 1992 AS INSTRUMENT NO. 92- 206068 OF OFFICIAL RECORDS; AND THAT CERTAIN SECOND AMENDMENT TO CONSTRUCTION OPERATION AND RECIPROCAL EASEMENT AGREEMENT RECORDED JANUARY 27, 2005 AS INSTRUMENT NO. 2005-0197780 OF OFFICIAL RECORDS; AND THAT CERTAIN THIRD AMENDMENT TO CONSTRUCTION OPERATION AND RECIPROCAL EASEMENT AGREEMENT RECORDED JANUARY 27,

2005 AS INSTRUMENT NO. 2005-0197784 OF OFFICIAL RECORDS; AND THAT CERTAIN FOURTH AMENDMENT TO CONSTRUCTION OPERATION AND RECIPROCAL EASEMENT AGREEMENT RECORDED AUGUST 19, 2013 AS INSTRUMENT NO. 2013-1212491 OF OFFICIAL RECORDS.

For conveyancing purposes only: APN 7381-024-038 (Affects Parcel 1 of Parcel One), 7381-024-039 (Affects Parcel 2 of Parcel One) and 7381-024-040 (Affects Parcel 3 of Parcel One)

**CITY OF CARSON  
COMMUNITY DEVELOPMENT DEPARTMENT  
PLANNING DIVISION**

**EXHIBIT "B"  
CONDITIONS OF APPROVAL  
DESIGN OVERLAY REVIEW NO. 1855-21  
20512 Avalon Boulevard**

**I. GENERAL CONDITIONS**

1. ***Interim Development Impact Fee:*** In accordance with Article XI (Interim Development Impact Fee Program) of the Carson Municipal Code ("CMC"), the applicant, property owner, and/or successor to whom these project entitlements are assigned ("Developer") shall be responsible for payment of one-time interim development impact fees ("IDIF") at the applicable rate detailed below for each square foot of commercial building space constructed for the project. If the project increases or decreases in regards to the square footage constructed, the total IDIF amount will be adjusted accordingly at the applicable rate.

Per CMC 11504, the IDIF shall be paid prior to issuance of the building permit(s), and the applicable IDIF rate (detailed below) shall be that in effect at the time of such payment. No building permit shall be issued prior to the full payment of the required IDIF amount, which payment shall be made in one lump sum installment. IDIF amounts/rates are subject to adjustment every July 1<sup>st</sup> based on State of California Construction Cost Index (Prior March to Current March Adjustment), per CMC Section 11500.

IDIF amounts/rates for commercial development have been set at \$4.71 per square foot for Fiscal Year 2021-22, effective July 1, 2021 through June 30, 2022. Based on these rates, the Developer would be responsible for payment of IDIF in the amount of \$18,298.35 for the proposed project, calculated as follows: 3,885 square feet X \$4.71 per square foot = \$18,298.35. However, if the IDIF for the project is not paid by the end of the 2021-22 fiscal year (i.e., by June 30, 2022), a new IDIF rate/amount will apply for the period of July 1, 2022 through June 30, 2023, based on the IDIF rate for Fiscal Year 2022-23, and so on for subsequent fiscal year(s). The fee for Fiscal Year 2022-23 is set at \$5.77 per square foot. Therefore, if IDIF are paid for the project between July 1, 2022 to June 30, 2023, the required amount will be \$22,416.45, calculated as follows: 3,885 square feet X \$5.77 per square foot = \$22,416.45. Subsequent fiscal year IDIF rates have not yet been determined.

To understand the requirements in more detail, please visit the City's IDIF webpage at <https://ci.carson.ca.us/communitydevelopment/IDIFProgram.aspx> and/or contact James Nguyen at [jnguyen@carsonca.gov](mailto:jnguyen@carsonca.gov) or 310-952-1700 ext. 1310.

***Notice of Imposition of Interim Development Impact Fees; Right to Protest***

Pursuant to CMC Section 11503, Developer is hereby notified of the IDIF imposed on the project, as described and in the amount stated above. In accordance with Government Code Section 66020, Developer may protest the imposition of the IDIF on the project by complying with the requirements set forth in CMC 11900. Any such protest shall be filed within ninety (90) days after the effective of approval by the City of the entitlement(s) or permit(s) that is/are the subject of these conditions of approval.

The ninety (90) day approval period in which the Developer may submit a protest has begun as of the effective date of the City's approval of the entitlement(s) or permit(s) that is/are the subject of these conditions of approval.

If you have any questions or comments regarding this notice, please contact James Nguyen at [jnguyen@carsonca.gov](mailto:jnguyen@carsonca.gov) or (310) 952-1700 ext. 1310.

2. If a building permit for Design Overlay Review No. 1855-21 is not issued within **two years** of their effective date, said permit shall be declared null and void unless an extension of time is approved by the Planning Commission.
3. The approved Resolution, including the Conditions of Approval contained herein, and signed Affidavit of Acceptance, shall be copied in their entirety and placed directly onto a separate plan sheet behind the cover sheet of the development plans prior to Building and Safety plan check submittal. Said copies shall be included in all development plan submittals, including any revisions and the final working drawings.
4. Developer shall submit two complete sets of plans that conform to all the Conditions of Approval to be reviewed and approved by the Planning Division prior to the issuance of a building permit.
5. Developer shall comply with all City, county, state and federal regulations applicable to this project.
6. Any substantial project revisions will require review and approval by the Planning Commission. Any revisions shall be approved by the Planning Division prior to Building and Safety plan check submittal.
7. The applicant and property owner shall sign an Affidavit of Acceptance form and submit the document to the Planning Division within 30 days of receipt of the Planning Commission Resolution.
8. A modification of these conditions, including additions or deletions, may be considered upon filing of an application by the owner of the subject property or his/her authorized representative in accordance with Section 9173.1 of the Zoning Ordinance.
9. It is further made a condition of this approval that if any condition is violated or if any applicable law, statute, ordinance or regulation is violated, this permit may be revoked by the Planning Commission or City Council, as may be applicable; provided the Developer has been given written notice to cease such violation and has failed to do so for a period of thirty days.
10. Precedence of Conditions. If any of these Conditions of Approval alter a commitment made by the Developer in another document, the conditions enumerated herein shall take precedence unless superseded by a Development Agreement, which shall govern over any conflicting provisions of any other approval.
11. City Approvals. All approvals by City, unless otherwise specified, shall be by the department head of the department requiring the condition. All agreements, covenants, easements, deposits and other documents required herein where City is a party shall be in a form approved by the City Attorney. The Developer shall pay the cost for review and approval of such agreements and deposit necessary funds pursuant to a deposit agreement.
12. Deposit Account. A trust deposit account shall be established for all deposits and fees required in all applicable conditions of approval of the project. The trust deposit shall

be maintained with no deficits. The trust deposit shall be governed by a deposit agreement. The trust deposit account shall be maintained separate from other City funds and shall be non-interest bearing. City may make demands for additional deposits to cover all expenses over a period of 60 days and funds shall be deposited within 10 days of the request therefor, or work may cease on the Project.

13. Indemnification. The applicant, property owner, and tenant(s), for themselves and their successors in interest (“Indemnitors”), agree to defend, indemnify and hold harmless the City of Carson, its agents, officers and employees, and each of them (“Indemnitees”) from and against any and all claims, liabilities, damages, losses, costs, fees, expenses, penalties, errors, omissions, forfeitures, actions, and proceedings (collectively, “Claims”) against Indemnitees to attack, set aside, void, or annul any of the project entitlements or approvals that are the subject of these conditions, and any Claims against Indemnitees which are in any way related to Indemnitees’ review of or decision upon the project that is the subject of these conditions (including without limitation any Claims related to any finding, determination, or claim of exemption made by Indemnitees pursuant to the requirements of the California Environmental Quality Act), and any Claims against Indemnitees which are in any way related to any damage or harm to people or property, real or personal, arising from Indemnitors’ operations or any of the project entitlements or approvals that are the subject of these conditions. The City will promptly notify Indemnitors of any such claim, action or proceeding against Indemnitees, and, at the option of the City, Indemnitors shall either undertake the defense of the matter or pay Indemnitees’ associated legal costs or shall advance funds assessed by the City to pay for the defense of the matter by the City Attorney. In the event the City opts for Indemnitors to undertake defense of the matter, the City will cooperate reasonably in the defense, but retains the right to settle or abandon the matter without Indemnitors’ consent. Indemnitors shall provide a deposit to the City in the amount of 100% of the City’s estimate, in its sole and absolute discretion, of the cost of litigation, including the cost of any award of attorneys’ fees, and shall make additional deposits as requested by the City to keep the deposit at such level. If Indemnitors fail to provide or maintain the deposit, Indemnitees may abandon the action and Indemnitors shall pay all costs resulting therefrom and Indemnitees shall have no liability to Indemnitors.

## **II. AESTHETICS/SIGNAGE**

1. There shall be no deviation of architectural design or details from the approved set of plans. Any alteration shall be first approved by the Planning Division.
2. Down spouts shall be interior to the structure or architecturally integrated into the structure to the satisfaction of the Planning Division.
3. Any roof-mounted equipment shall be screened to the satisfaction of the Planning Division.
4. Graffiti shall be removed from all areas within twenty-four (24) hours of written notification by the City of Carson, including graffiti found on perimeter walls and fences. Should the graffiti problem persist more than twice in any calendar year, the matter may be brought before the Planning Commission for review and further consideration of site modification (i.e. fencing, landscaping, chemical treatment, etc.).
5. The proposed project site shall be maintained free of debris, litter and inoperable vehicles at all times. The subject property shall be maintained to present an attractive appearance to the satisfaction of the Planning Division.
6. All signage shall be approved under separate permit.

7. The multi-tenant moment sign shall be substantially consistent with Exhibit No. 4 attached to the June 14, 2022 Carson Planning Commission staff report pertaining to consideration of Design Overlay Review No. 1855-21, both in terms of design and location, as determined by the Community Development Director.

### **III. LANDSCAPE/IRRIGATION**

1. Comply with the provisions of Section 9168 of the Zoning Ordinance, “Water Efficient Landscaping.”
2. Landscaping shall be provided with a permanently installed, automatic irrigation system and operated by an electrically-timed controller station set for early morning or late evening irrigation.
3. Installation of 6” x 6” concrete curbs are required around all landscaped planter areas, except for areas determined by National Pollutant Discharge Elimination System (NPDES) permit or other applicable condition of approval that requires certain landscaped areas to remain clear of concrete curbs for more efficient storm water runoff flow and percolation. Revised landscaping and irrigation plans shall be reviewed and approved by the Planning Division should subsequent modifications be required by other concerned agencies regarding the removal of concrete curbs.
4. The proposed irrigation system shall include best water conservation practices.
5. Installation, maintenance, and repair of all landscaping shall be the responsibility of the property owner.
6. Trees/Shrubs around drive-thru shall be maintained at a height to screen cars from public right-of-way
7. All new and retrofitted landscape of 500 square feet or greater is subject to the Model Water Efficient Landscape Ordinance (MWELo) per Department of Water Resources Title 23, Chapter 2.7
8. Prior to Issuance of Building Permit, the applicant shall submit two sets of landscape and irrigation plans drawn, stamped, and signed by a licensed landscape architect. Such plans are to be approved by the Planning Division.

### **IV. LIGHTING**

1. Developer shall provide adequate lighting for the parking areas.
2. All exterior lighting shall be provided in compliance with the standards pursuant to Section 9147.1 of the Zoning Ordinance.
3. Such lights are to be directed on-site in such a manner as to not create a nuisance or hazard to adjacent street and properties, subject to the approval of the Planning Division.
4. The missing double mast arms streetlights on Avalon Blvd. fronting the subject property shall be re-installed at the same location, subject to approval by Los Angeles County Public Works – Traffic Safety and Mobility Division.

### **V. PARKING/TRAFFIC**

1. All driveways shall remain clear. No encroachment into driveways shall be permitted.
2. The parking areas shall be re-slurry sealed and re-stripped with a new parking configuration that complies with ADA, Fire, and Traffic Engineering standards.



3. All areas used for movement, parking, loading, or storage of vehicles shall be paved, striped and provided with wheel stops in accordance with Section 9162.0 of the Zoning Ordinance.
4. Developer shall restripe the southbound approach of the intersection of Avalon Boulevard / Carson Plaza Drive to add a second southbound left turn lane. Vehicle detection loops shall be installed for the new southbound left turn lane. Signage on and approaching the traffic signal shall be modified to reflect the striping changes. A signing and striping plan and traffic signal modification plan shall be prepared and submitted to the City for review and approval.

#### **VI. TRASH**

1. Trash collection from the project site shall comply with the requirements of the City's trash collection company.

#### **VII. UTILITIES**

1. All utilities and aboveground equipment shall be constructed and located pursuant to Section 9146.8 of the Zoning Ordinance, unless otherwise provided for in these conditions.
2. Developer shall remove, at its own expense, any obstructions within the utility easements that would interfere with the use for which the easements are intended.
3. Any aboveground utility cabinet or equipment cabinet shall be screened from the public right-of-way by a decorative block wall or landscaping, to the satisfaction of the Planning Division.

#### **VIII. BUILDING AND SAFETY DIVISION**

1. Applicant shall submit development plans for plan check review and approval.
2. Developer shall obtain all appropriate building permits and an approved final inspection for the proposed project.
3. Prior to issuance of building permit, proof of worker's compensation and liability insurance for Developer must be on file with the Los Angeles County Building and Safety Division.

#### **IX. FIRE DEPARTMENT**

1. The proposed development shall obtain approval and comply with all Los Angeles County Fire Department requirements.

#### **X. ENGINEERING SERVICES DEPARTMENT – CITY OF CARSON**

##### **GENERAL**

1. Any existing off-site improvements damaged during the construction shall be removed and reconstructed per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.
2. A construction permit is required for any work to be done in the public right-of-way.
3. Construction bond for all work to be done within the public right of way shall be submitted and approved by Engineering Division prior to issuance of permit by Engineering Division.

4. Proof of Worker's Compensation and Liability Insurance shall be submitted to the city prior to issuance of permit by Engineering Division.
5. The Developer shall submit a copy of **approved** Grading/Site plans on bond paper to the City of Carson – Engineering Division, prior to issuance of grading permits.

### MAP

1. The Developer shall comply with applicable LID requirements (*Carson Municipal Code Section 5809*) and shall include Best Management Practices necessary to control storm water pollution from construction activities and facility operations to the satisfaction of Building and Safety.
2. Per City of Carson Municipal Code Section 5809, Developer shall comply with all applicable Low Impact Development (LID) requirements and shall include Best Management Practices necessary to control storm water pollution from construction activities and facility operations to the satisfaction of the City Engineer.
3. Per City of Carson Municipal Code Section 5809(d)(2), Developer shall comply with all street and road construction of 10,000 square feet or more of impervious surface, shall manage wet weather with Green Infrastructure: Green Streets
4. Developer shall apply for a *Construction Activities Stormwater General Permit* from the State Water Resources Control Board.
5. Developer shall provide a copy of an approved SWPPP stamped by Los Angeles County Building and Safety Division along with WDID number.
6. Developer shall provide contact information of the Qualified Storm Water Developer (QSD) and/or Qualified SWPPP (Storm Water Pollution Prevention Plan) Developer (QSP) of the site to Kenneth Young via E-mail: [Kyoung@carsonca.gov](mailto:Kyoung@carsonca.gov)
7. Developer shall submit digital copies of the LID/NPDES/Grading Plans, hydrology and Hydraulic analysis concurrently to City of Carson, Engineering Services Department and Los Angeles County Building & Safety Division. Deliver copy to Ken Young via E-Mail [Kyoung@Carsonca.gov](mailto:Kyoung@Carsonca.gov)
8. Developer shall complete, sign and return the *Stormwater Planning Program LID Plan Checklist* form and return to City of Carson Engineering Service Division.

### BUILDING PERMITS

Prior to issuance of **Building Permit**, the proposed development is subject to the following:

1. Drainage/Grading plan shall be submitted for approval of the Building and Safety Division. The Developer shall submit a **copy of approved** Drainage/Grading plans on bond paper to the City of Carson – Engineering Division.
2. If or when required, as determined by the City Engineer, provide CC&R's (covenants, conditions, and restrictions) to address drainage responsibilities.

3. Soils report, sewer area study, drainage concept, hydrology study and stormwater quality plan shall be reviewed and approved. Building Permit issuance will not be granted until the required soils, sewer, drainage concept, hydrology study and stormwater information have been received and found satisfactory. Comply with mitigation measures recommended in the approved soils, sewer area study, drainage concept, hydrology study and stormwater quality plan.
4. The Developer shall submit a sewer area study to the Los Angeles County Department of Public Works (LACDPW) to determine if capacity is adequate in the sewerage system to be used as the outlet for the sewer of this development. If the system is found to have insufficient capacity, the problem must be addressed and resolved to the satisfaction of the L.A. County Sewer Department.
5. Quitclaim or relocate any easements interfering with building locations to the satisfaction of the City, appropriate agency or entity.
6. The Developer shall submit improvement plans to the Engineering Division showing all the required improvements in the public right of way for review and approval of the City Engineer. A copy of approved conditions of approval shall be attached to the plans when submitted. The following are required as a part of the projects improvement plans.
  - a) Repair any broken or raised/sagged sidewalk, curb and gutter within the public right of way along Avalon Blvd abutting this proposed development per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.
  - b) Remove and replace any broken/damaged driveway approach within the public right of way along Avalon Blvd. abutting this proposed development per City of Carson PW Standard Drawings and to the satisfaction of the City Engineer.
  - c) Install/If necessary, modify existing wheelchair ramp at the corner of South Avalon Blvd. and Carson Plaza Drive per City of Carson PW Standard Drawings, in compliance with ADA requirements.
  - d) Along Avalon Blvd. the Median noses to be adjusted to provide a 2-ft setback between the nose and the near crosswalk line.
  - e) The southernly crosswalk shall be revised with straight path of travel.
  - f) Install striping and pavement legend per City of Carson PW Standard Drawings.
7. Off-site improvements (*e.g. driveways, sidewalk, parkway drains, trees, curb/gutter etc*) shown on the grading plans must provide a concurrent submittal to City of Carson Engineering Division. Off-site improvements may be shown on a separate set of street improvement plans. Prior to issuance of Grading permit, developer shall obtain clearance from City of Carson Engineering Division.

### CERTIFICATE OF OCCUPANCY

Prior to issuance of **Certificate of Occupancy**, the proposed development is subject to the following:

1. For any structural and/or treatment control device installed. Developer shall record a maintenance covenant pursuant to Section 106.4.3 of the County of Los Angeles

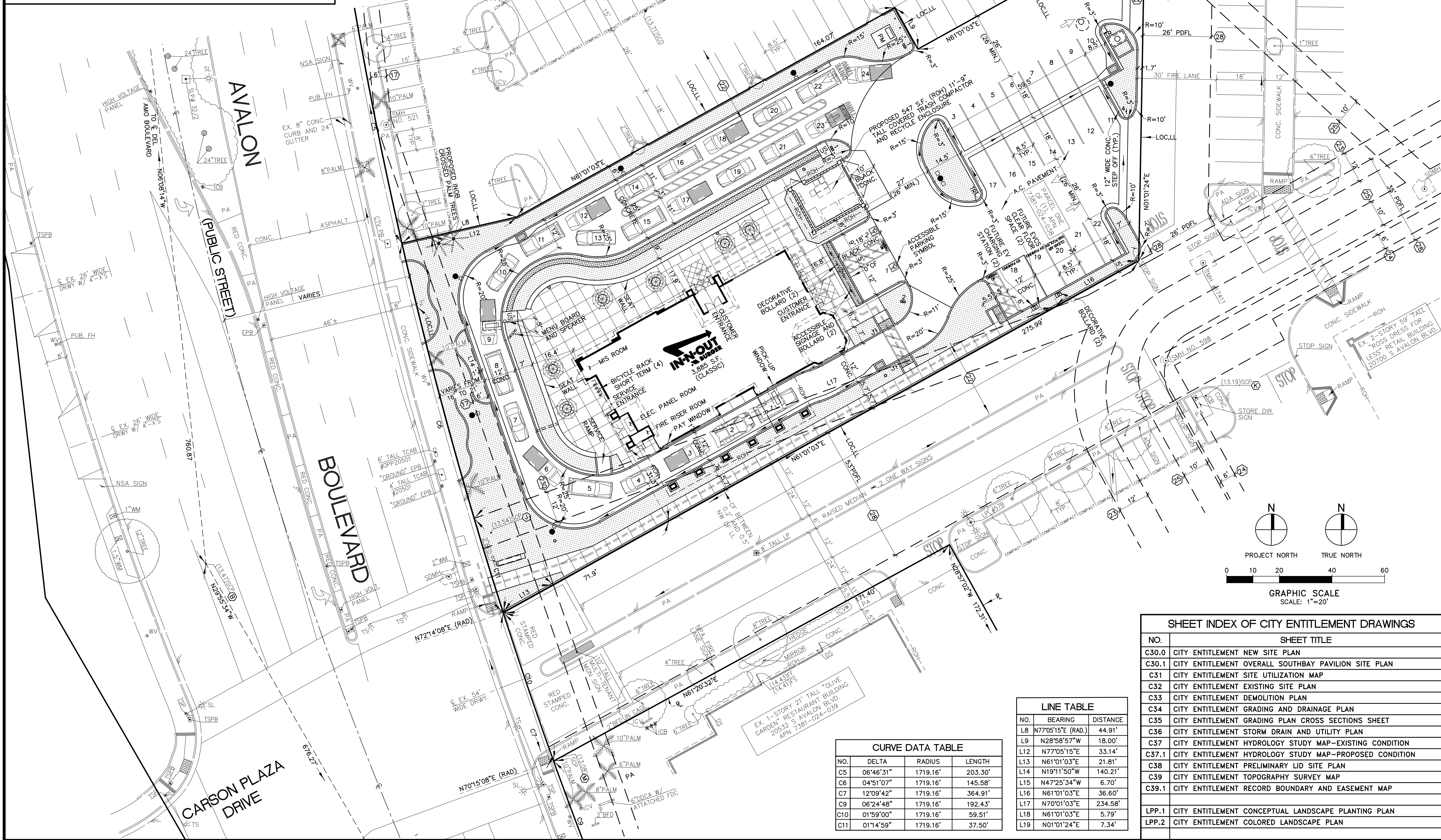
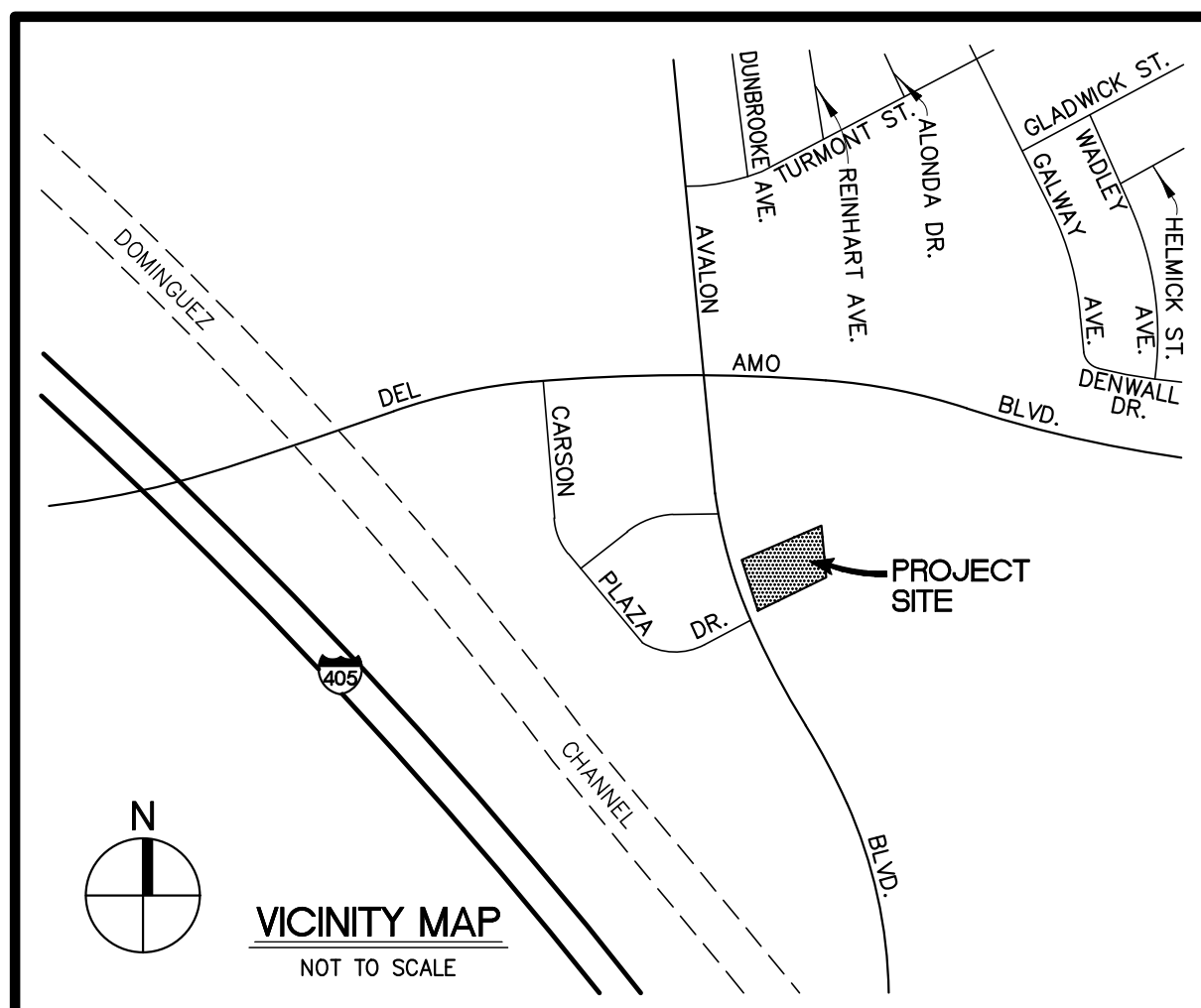
County Code relating to the control of pollutants carried by storm water runoff. In addition, an exhibit shall be attached to identify the location and maintenance information for any structural and/or treatment control device installed.

2. Developer shall complete and submit digital BMP Reporting Template Spreadsheet.
3. Inspection will be conducted once a year after all Post Construction Best Management Practices (BMP) are constructed.
4. Developer shall provide an approved Notice of Termination (NOT) by the State Water Resources Control Board.
5. The Developer shall comply with all requirements from L.A. County Sewer Maintenance Division for maintenance of new and/or existing sewer main, relating to this development, prior to release of all improvement bonds.
6. The Developer shall execute and provide to the City Engineer, a written statement from the water purveyor indicating that the water system will be operated by the purveyor and that under normal conditions, the system will meet the requirements for the development and that water service will be provided to each building.
  - a) Comply with mitigation measures recommended by the water purveyor.
7. The Developer shall construct and guarantee the construction of all required and previously approved Street Improvements to the satisfaction of the City of Carson Public Works Inspector and the City Engineer.
8. The Developer shall construct and guarantee the construction of all required drainage infrastructures in accordance with the requirements and recommendations of the hydrology study, subject to the approval of the City Engineer.
9. All new utility lines servicing the proposed development shall be underground to the satisfaction of the City Engineer.
10. Comply with any additional requirements, if any, as means of mitigating any traffic impacts as identified in the traffic study approved by the City Traffic Engineer.
11. If needed, easements shall be granted to the City, appropriate agency, or entity for the purpose of ingress, egress, construction, and maintenance of all infrastructures constructed and handicap access for this development to the satisfaction of the City Engineer and or appropriate agency or entity.
12. All infrastructures necessary to serve the proposed development (water, sewer, storm drain, and street improvements) shall be in operation prior to the issuance of Certificate of Occupancy.

## **XII. Business License**

1. All parties involved in the subject project including but not limited to contractors and subcontractors are required to obtain a City business license per Section 6310 of the Carson Municipal Code.





### LEGEND

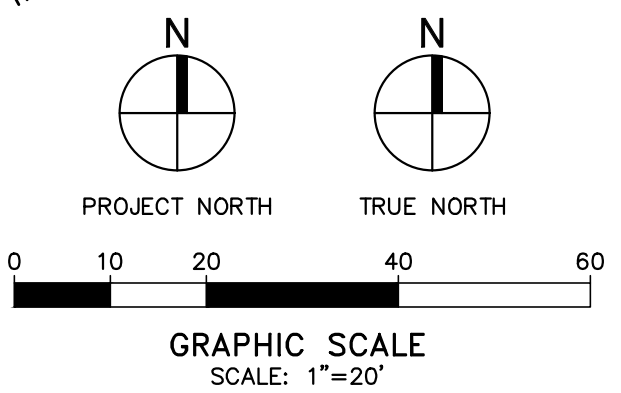
	NEW 24"x36" CONCRETE DRAIN BOX INLET WITH A FLOGARD PLUS FOSSIL FILTER INSERT FOR THE PRE-TREATMENT OF STORMWATER RUNOFF.		ADA ACCESSIBLE PATH OF TRAVEL. ACCESSIBLE PATH OF TRAVEL IS NOT LESS THAN 4 FEET WIDE, AND DOES NOT EXCEED A RUNNING SLOPE OF 1:20 (5%) OR A CROSS SLOPE IN EXCESS OF 1:50 (2%). REFER TO SHEET C34 FOR SPECIFIC SLOPES AND GRADES.
	PROPOSED INOB INSTALLED AND MAINTAINED 22'-6" TALL FIXTURE HEIGHT LIGHT POLE ON TOP OF A 30" TALL 24" DIAMETER CONCRETE BASE FOR A TOTAL HEIGHT OF 25' TALL MAXIMUM.		SCE ELECTRIC PAD MOUNT TRANSFORMER WITH BOLLARDS.
	PROPOSED INOB INSTALLED AND MAINTAINED DROUGHT TOLERANT LANDSCAPED PLANTER AND IRRIGATION SYSTEM ON-SITE, INCLUDING AREA UNDER BUILDING ROOF OVERHANG (ROH), CONSISTING OF APPROXIMATELY 7,651 SQUARE FEET (20.7%).		PORTABLE TRASH RECEPTACLE ON A MINIMUM 24"x24"x4" CONCRETE PAD.
	BLACK TRUNCATED DOMES DETECTABLE WARNING STRIP.		NEW CONCRETE SIDEWALK.
	VEHICLE DETECTOR LOOP.		BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTION SHOWN ON SHEET C39.1.
	PROPERTY LINE.		SIMPLIFIED PLOTTABLE EASEMENT DESCRIPTION SHOWN ON SHEET C39.
	OUTDOOR SEATING PATIO TABLE WITH AN UMBRELLA (4 SEATS).		DRIVE-THRU CATWALK CONCRETE PAD WITH UMBRELLA STAND.
	OUTDOOR SEATING PATIO TABLE WITH NO UMBRELLA (2 SEATS).		FUTURE EV (ELECTRIC VEHICLE) CHARGING STATION (OR EQUIVALENT), PROPOSED 4" DIAMETER ELECTRIC PULL BOX AND CLEAR FLOOR SPACE.
	NEW 3' TALL 18"x24" LIT "DRIVE THRU" DIRECTIONAL SIGN.		PROPOSED 18" TO 27" TALL 22" WIDE STUCCO COVERED SEAT/SCREEN WALL WITH A PRECAST CONCRETE CAP.
	NEW 3' TALL 18"x24" LIT "THANK YOU, DO NOT ENTER" DIRECTIONAL SIGN.		NEW PEDESTRIAN CROSSWALK SIGN.
	NEW ACCESSIBILITY ENTRY SIGN.		24" WIDE MATTED INOB ASSOCIATE WALKWAY PER 278 SQUARE FEET.
	INOB IN-OUT BURGER.		PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.
	INOB LEASE PREMISES LINE.		PROPOSED BIOCLEAN PRECAST CONCRETE MODULAR WETLANDS UNIT WETLANDMOD-6-8-51-07-V STORMWATER BIOFILTRATION SYSTEM.
	CURB FACE.		

- ### GENERAL NOTES
- IN-N-OUT BURGER LEASE PREMISES AREA = 36,958 SQUARE FEET OR 0.848 ACRES.
  - EXISTING CITY ZONE: CR-D-MUR (COMMERCIAL, REGIONAL CENTER-DESIGN OVERLAY-MIXED-USE RESIDENTIAL OVERLAY)
  - GENERAL PLAN LAND USE DESIGNATION: MU-R (MIXED-USE RESIDENTIAL).
  - EXISTING LAND USE: 116 SPACE PAVED SURFACE PARKING LOT.  
PROPOSED LAND USE: NEW IN-N-OUT BURGER SIT DOWN RESTAURANT WITH A DRIVE-THRU LANE PERMITTED IN CITY ZONE.
  - PROPOSED SCOPE OF WORK:  
(A) CONSTRUCT A 3,885 SQUARE FOOT SIT-DOWN (74 SEATS INSIDE) RESTAURANT BUILDING, A 24 VEHICLE LONG DRIVE THRU QUEUE AND 22 SPACE SHARED PAVED SURFACE PARKING LOT.
  - IN-N-OUT BURGER CLASSIC BUILDING AREA = 3,885 S.F. COVERED PATIO STRUCTURE ROOF OVERHANG = 547 S.F. COVERED TRASH ENCLOSURE ROOF OVERHANG = NONE. INDOOR SEATING = 74 SEATS. OUTDOOR SEATING = 28 SEATS (8 TABLES) PLUS 20 S.F. EACH FOR 2-2 SEAT TABLES (40 S.F.) = 424 S.F.
  - REQUIRED PARKING: 1 SPACE PER 100 SQUARE FEET OF GROSS FLOOR AREA WITH A MINIMUM OF 10 PARKING SPACES PROVIDED (3,885 S.F.) PLUS OUTDOOR SEATING AREA (424 S.F.) = 44 SPACES
  - MAXIMUM FLOOR AREA RATIO (FAR) = UNKNOWN. FAR PROVIDED = 0.11.
  - REQUIRED SITE LANDSCAPE AREA = UNKNOWN.
  - LANDSCAPE AREA PROVIDED WITHIN PROPERTY = 7,651 S.F. (20.7%)

### IN-N-OUT BURGER PARKING SPACE DETAILED SUMMARY TABLE

DESCRIPTION	EXISTING	REQUIRED	PROPOSED
1. STANDARD SPACE (8.5'x18')	102	39	17
2. COMPACT SPACE (8'x15')	14	0	0
3. ACCESSIBLE VAN SPACE (17'x18' PLUS A 2' VOH)	0	1	1
4. ACCESSIBLE SPACE (14'x18' PLUS A 2' VOH)	0	1	1
5. FUTURE EV VAN ACCESSIBLE SPACE (17'x18')	0	1	1
6. FUTURE EV PARKING SPACE (8.5'x18')	0	1	1
7. CLEAN AIR/VAN POOL/EV (8.5'x18')	0	1	1
8. TOTAL	116	44	22
9. IN-N-OUT BURGER DRIVE THRU VEHICLE QUEUE (20' LONG INOB VEHICLE)	0	0	24
10. SHORT-TERM BICYCLE PARKING WITHIN DESIGNATED BIKE RACK	0	0	4
11. LONG-TERM BICYCLE PARKING WITHIN A LOCKABLE PERMANENTLY ANCHORED LOCKER ON A CONCRETE SLAB-AMERICAN BICYCLE SECURITY COMPANY BIKE-SHELL MODEL 302, FINISH: MEDIUM GRAY	0	0	0

- ALL NEW SIGNS SHALL BE APPROVED BY A SEPARATE CITY PERMIT.
- ASSESSOR PARCEL NUMBER: PORTION OF 7381-024-038.
- EXISTING TREES ON-SITE = 23. ON-SITE TREES TO BE PROTECTED IN PLACE = 2. OFF-SITE STREET TREES TO BE REMOVED = 2. TOTAL TREES TO BE REMOVED = 23.
- EXISTING LANDSCAPE AREA ON-SITE = 3,005 S.F. (8.1%)
- VEHICLE PARKING AND ACCESS IS RECIPROCAL WITH THE BALANCE OF THE CENTER.
- SITE PLAN SHALL MEET ALL ENGINEERING AND NPDES REQUIREMENTS.



### SHEET INDEX OF CITY ENTITLEMENT DRAWINGS

NO.	SHEET TITLE
C30.0	CITY ENTITLEMENT NEW SITE PLAN
C30.1	CITY ENTITLEMENT OVERALL SOUTHBAY PAVILION SITE PLAN
C31	CITY ENTITLEMENT SITE UTILIZATION MAP
C32	CITY ENTITLEMENT EXISTING SITE PLAN
C33	CITY ENTITLEMENT DEMOLITION PLAN
C34	CITY ENTITLEMENT GRADING AND DRAINAGE PLAN
C35	CITY ENTITLEMENT GRADING PLAN CROSS SECTIONS SHEET
C36	CITY ENTITLEMENT STORM DRAIN AND UTILITY PLAN
C37	CITY ENTITLEMENT HYDROLOGY STUDY MAP-EXISTING CONDITION
C37.1	CITY ENTITLEMENT HYDROLOGY STUDY MAP-PROPOSED CONDITION
C38	CITY ENTITLEMENT PRELIMINARY LID SITE PLAN
C39	CITY ENTITLEMENT TOPOGRAPHY SURVEY MAP
C39.1	CITY ENTITLEMENT RECORD BOUNDARY AND EASEMENT MAP
LPP.1	CITY ENTITLEMENT CONCEPTUAL LANDSCAPE PLANTING PLAN
LPP.2	CITY ENTITLEMENT COLORED LANDSCAPE PLAN

### LINE TABLE

NO.	BEARING	DISTANCE
L8	N77°05'15"E (RAD.)	44.91'
L9	N28°58'57"W	18.00'
L12	N77°05'15"E	33.14'
L13	N61°01'03"E	21.81'
L14	N19°11'50"W	140.21'
L15	N47°25'34"W	6.70'
L16	N61°01'03"E	36.60'
L17	N70°01'03"E	234.58'
L18	N61°01'03"E	5.79'
L19	N01°01'24"E	7.34'

### CURVE DATA TABLE

NO.	DELTA	RADIUS	LENGTH
C5	06°46'31"	1719.16'	203.30'
C6	04°51'07"	1719.16'	145.58'
C7	12°09'42"	1719.16'	364.91'
C9	06°24'48"	1719.16'	192.43'
C10	01°59'00"	1719.16'	59.51'
C11	01°14'59"	1719.16'	37.50'

DEVELOPER:  
IN-N-OUT BURGER  
13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706  
CONTACT: MARC LEVUN  
PHONE: 626 813-5378

Underground Service Alert  
Call: Toll Free  
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REVISIONS

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GHA PROJECT NO. ---  
**GHA**  
Architecture/Development  
14901 Quorum Drive  
Suite 300  
Dallas Texas 75254  
Ph: (972) 239-8884  
Fax: (972) 239-5054

CIVIL ENGINEER:  
**MSL ENGINEERING, INC.**  
CIVIL ENGINEERS AND LAND SURVEYORS SPECIALIZING IN SITE DEVELOPMENT  
301 NORTH SAN DIMAS AVENUE, SAN DIMAS, CA. 91773  
(909) 305-2395 FAX (909) 305-2397  
Mark S. Lamoureux  
MARK S. LAMOUREUX  
R.C.E. 38382  
01-21-2022 DATE

**IN-N-OUT BURGER**  
THE SHOPS AT  
SOUTHBAY PAVILION  
20500±S. AVALON BOULEVARD  
CARSON, CA 90746

**CITY ENTITLEMENT**  
**NEW SITE PLAN**  
**C30.0**



**SOUTHBAY PAVILION OVERALL MALL (POST PAD O DEVELOPMENT) Parking Stall Analysis 01-12-22**

Use	Building Area (SF)	City Required Parking (stalls)	Comments
24 Hour Fitness	32,921	N/A	220 1 stall to 150 SF of GLA per Linscott Law & Greenspan (12-18-14).
IKEA	206,500	300	689
Target	146,475	300	489
Chili's	6,204	100	63
Mall Stores	146,920	300	490 Subtracted 41,433 SF from 188,353 SF of the Mall Stores to account for the old mall stores demolished to make room for new 57,352 sf Cinemark Theatre (Per KTG Architects)
Chase Bank	4,000	300	14
Tony Roma	5,820	100	59
JC Penney	189,224	300	631
Harbor Freight	16,274	300	55
Cinemark Theatre	57,352	N/A	815 1 stall to 3 fixed seats per Linscott Law & Greenspan (12-18-14). Assumes 2,443 seats per final plan set.
Bank of America	9,720	300	33
Former Sears (Ross/Burlington) (Sola Salon)	143,554	300	479 21,000 sf of the former Sears basement has been redesigned/withdrawn from floor area.
Restaurant Buildings (Norm's Restaurant, Smashburger, Jersey Mike's and Chipotle)	7,806	150	52
Olive Garden	12,325	100	124
Pad "O" Development (In-N-Out Burger)	7,537	100	76
BWW (Buffalo Wild Wings)	3,885	100	39
	7,000	100	70
<b>Total Building Area</b>	<b>1,003,517 sf</b>		<b>4,527 Stalls Provided**</b>
			<b>4,398 Stalls Required per City (by Use)*</b>
			<b>129 Surplus/deficiency</b>

\* Sit Down Restaurants were calculated at 1:100, Gym is 1 space per 150 SF, Theatre is 1 stall to 3 fixed seats, All other retail uses were calculated at 1:300.  
 \*\* Includes loss of 95 stalls from Pad "O" Development (In-N-Out Burger)

**SOUTHBAY PAVILION (POST PAD O DEVELOPMENT) Parking Stall Analysis 01-12-22**

Use	Building Area (SF)	Comments	REA Required Parking (stalls)	Comments
24 Hour Fitness	32,921	1 stall to 150 SF of GLA per Linscott Law & Greenspan (12-18-14).	148.14	
IKEA	206,500		929.25	
Target	146,475		659.14	
Chili's	6,204		27.92	
Mall Stores	146,920	Subtracted 41,433 SF from 188,353 SF of the Mall Stores to account for the old mall stores demolished to make room for the new 57,352 SF Cinemark Theatre (Per KTG Architects).	661.14	
Chase Bank	4,000		18.00	
Tony Roma	5,820		26.19	
JC Penney	189,224		851.51	
Harbor Freight	16,274		73.23	
Cinemark Theatre	57,352	1 stall to 3 fixed seats per Linscott Law & Greenspan (12-18-14). Assumes 2,443 seats per final plan set.	258.08	
Bank of America	9,720		43.74	
Former Sears (Ross/Burlington) (Sola Salon)	151,360	21,000 S.F. of the former Sears basement has been redesignated/withdrawn from floor area.	681.12	
Restaurant Buildings (Norm's Restaurant, Smashburger, Jersey Mike's, and Chipotle)	12,325		55.46	
Olive Garden	7,537		33.92	
Pad "O" Development (In-N-Out Burger)	3,885		17.48	
BWW (Buffalo Wild Wings)	7,000		31.50	
<b>Total Building Area</b>	<b>1,003,517</b>		<b>4,527 Stalls Provided**</b>	
			<b>4,516 Stalls Required per REA (4.5:1000)</b>	
			<b>11 Surplus/deficiency</b>	
<b>Parking Ratio</b>			<b>4.51:1000</b>	

\* Sit Down Restaurants were calculated at 1:100, Gym is 1 space per 150 SF, Theatre is 1 stall to 3 fixed seats, All other retail uses were calculated at 1:300.  
 \*\* Includes loss of 95 stalls from Pad "O" Development (In-N-Out Burger)

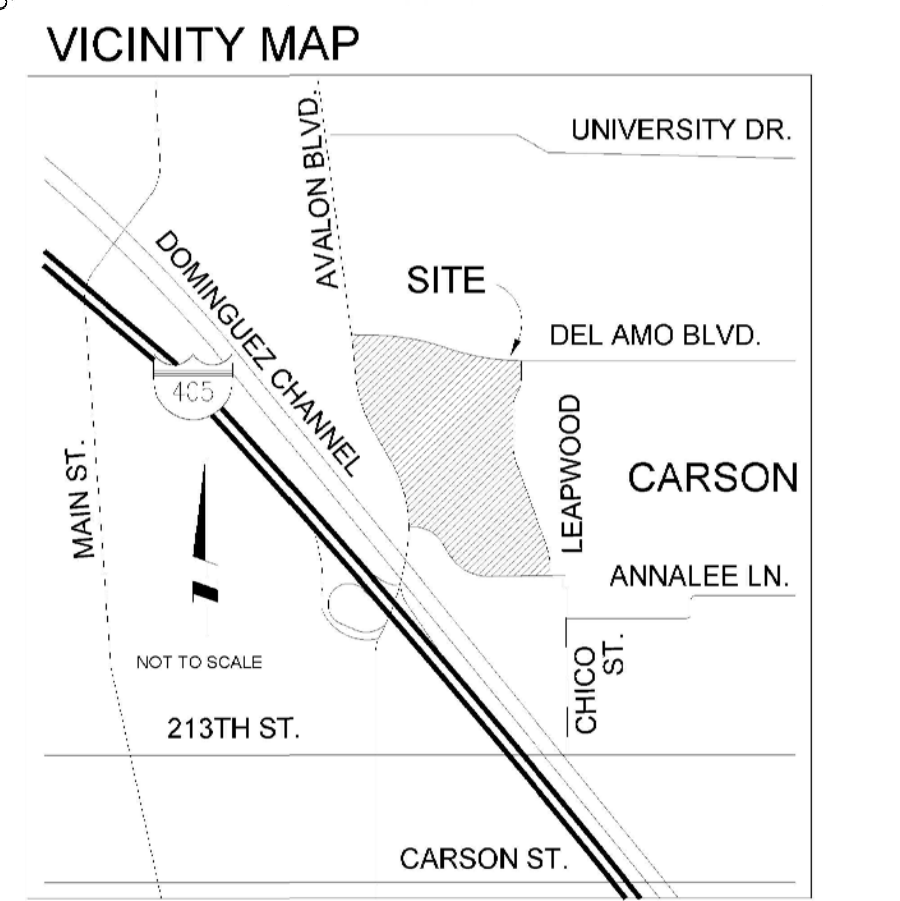
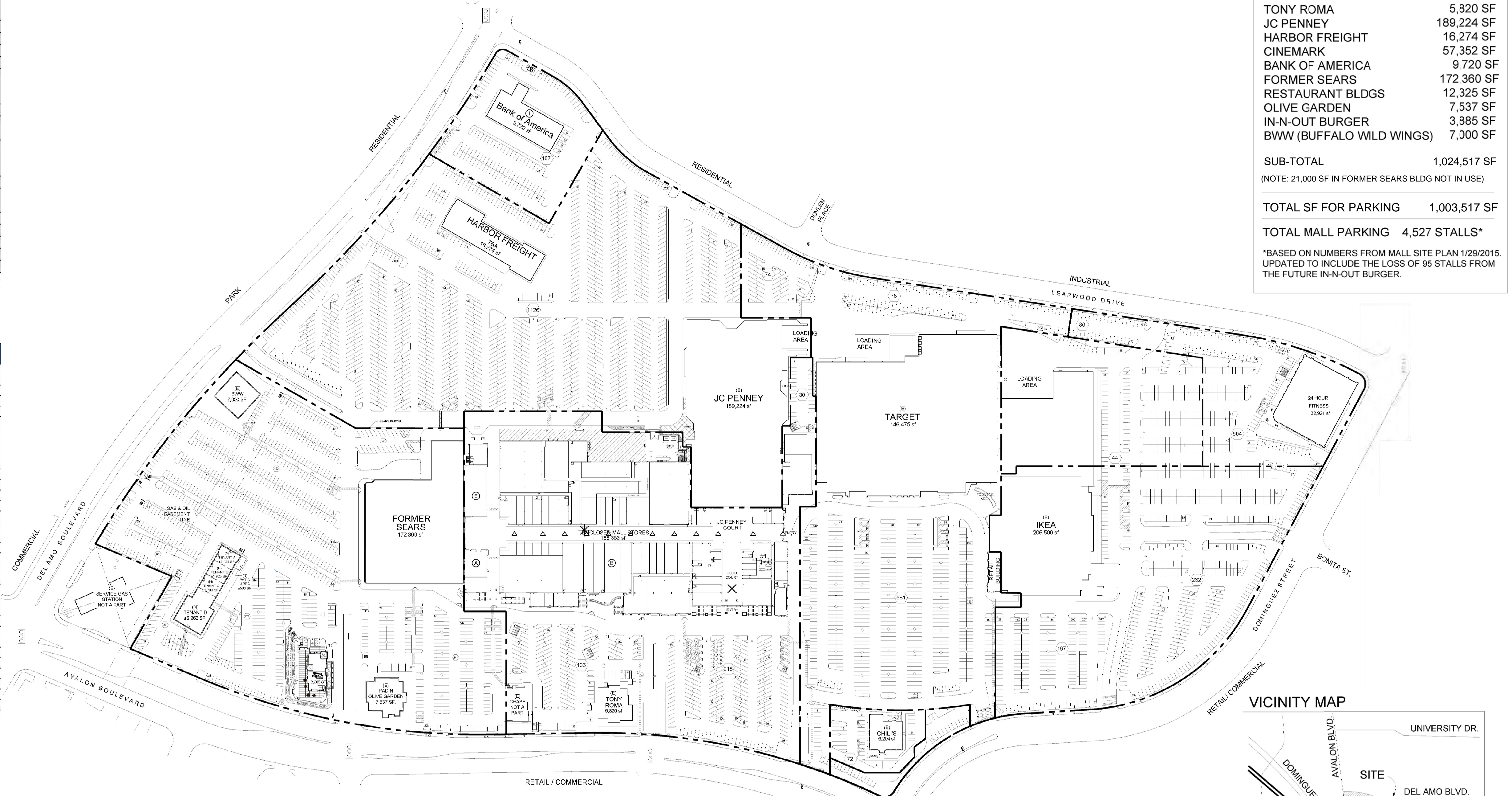
**LEGEND**

- △ MERCHANDISE KIOSK
- PARCEL LINE / PROPERTY LINE
- \* THEATER IDENTITY ELEMENT
- × THEATER TICKET KIOSK

**SUMMARY**

TENANT	BUILDING AREA
24 HOUR FITNESS	32,921 SF
IKEA	206,500 SF
TARGET	146,475 SF
CHILI'S	6,204 SF
MALL STORES	146,920 SF
CHASE BANK	4,000 SF
TONY ROMA	5,820 SF
JC PENNEY	189,224 SF
HARBOR FREIGHT	16,274 SF
CINEMARK	57,352 SF
BANK OF AMERICA	9,720 SF
FORMER SEARS	172,360 SF
RESTAURANT BLDGS	12,325 SF
OLIVE GARDEN	7,537 SF
IN-N-OUT BURGER	3,885 SF
BWW (BUFFALO WILD WINGS)	7,000 SF
<b>SUB-TOTAL</b>	<b>1,024,517 SF</b>
(NOTE: 21,000 SF IN FORMER SEARS BLDG NOT IN USE)	
<b>TOTAL SF FOR PARKING</b>	<b>1,003,517 SF</b>
<b>TOTAL MALL PARKING</b>	<b>4,527 STALLS*</b>

\*BASED ON NUMBERS FROM MALL SITE PLAN 1/29/2015. UPDATED TO INCLUDE THE LOSS OF 95 STALLS FROM THE FUTURE IN-N-OUT BURGER.



**SITE PLAN**



**NEWMARK MERRILL COMPANIES**  
 5850 Cabiga Ave., Suite 650  
 Woodland Hill, CA 91367  
 T 818-710-6100

**SOUTH BAY PAVILION**

CARSON, CA  
 KTG # 200821  
 DATE 3/30/2021

NOTE: RECEIVED IN PDF FORMAT FROM JIM LOCKINGTON'S INOB 06-08-21 EMAIL TO MSL



**IN-N-OUT BURGER**  
 DEVELOPER:  
 IN-N-OUT BURGER  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVUN  
 PHONE: 626 813-5378

**Underground Service Alert**  
 Call: Toll Free  
**811**  
 TWO WORKING DAYS BEFORE YOU DIG

**REVISIONS**  
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GHA PROJECT NO. \_\_\_\_\_  
**GHA**  
 Architecture/Development  
 14901 Quorum Drive  
 Suite 300  
 Dallas Texas 75254  
 Ph: (972) 239-8884  
 Fax: (972) 239-5054

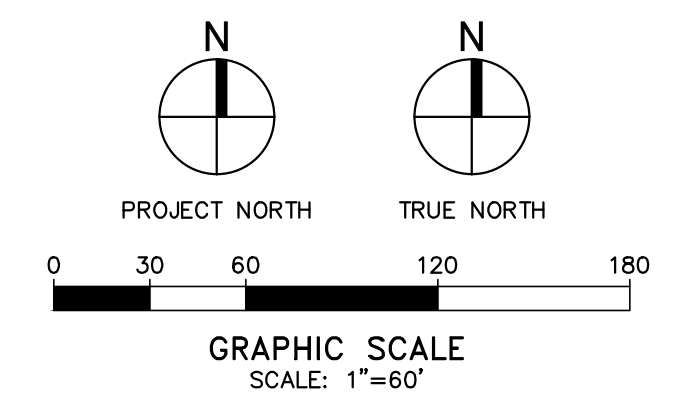
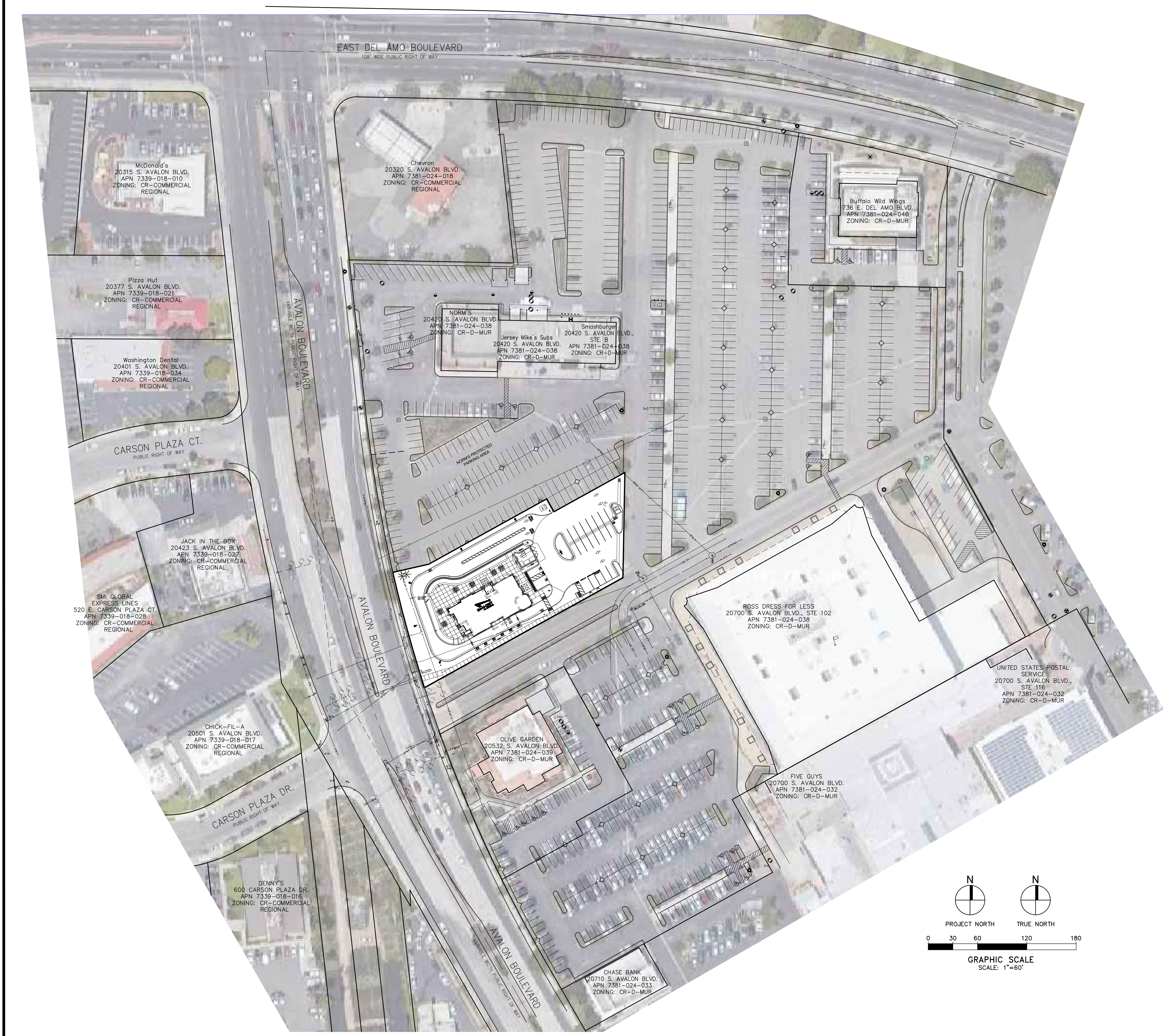
CIVIL ENGINEER:  
**MSL ENGINEERING, INC.**  
 CIVIL ENGINEERS AND LAND SURVEYORS SPECIALIZING IN SITE DEVELOPMENT  
 301 NORTH SAN DIMAS AVENUE, SAN DIMAS, CA. 91773  
 (909) 305-2395 FAX (909) 305-2397  
 Mark S. Lamoureux  
 MARK S. LAMOUREUX R.C.E. 38382 01-21-2022 DATE



**IN-N-OUT BURGER**  
 THE SHOPS AT  
 SOUTHBAY PAVILION  
 20500±S. AVALON BOULEVARD  
 CARSON, CA 90746

**CITY ENTITLEMENT OVERALL SOUTHBAY PAVILION SITE PLAN**  
**C30.1**





DEVELOPER:  
**IN-N-OUT BURGER**  
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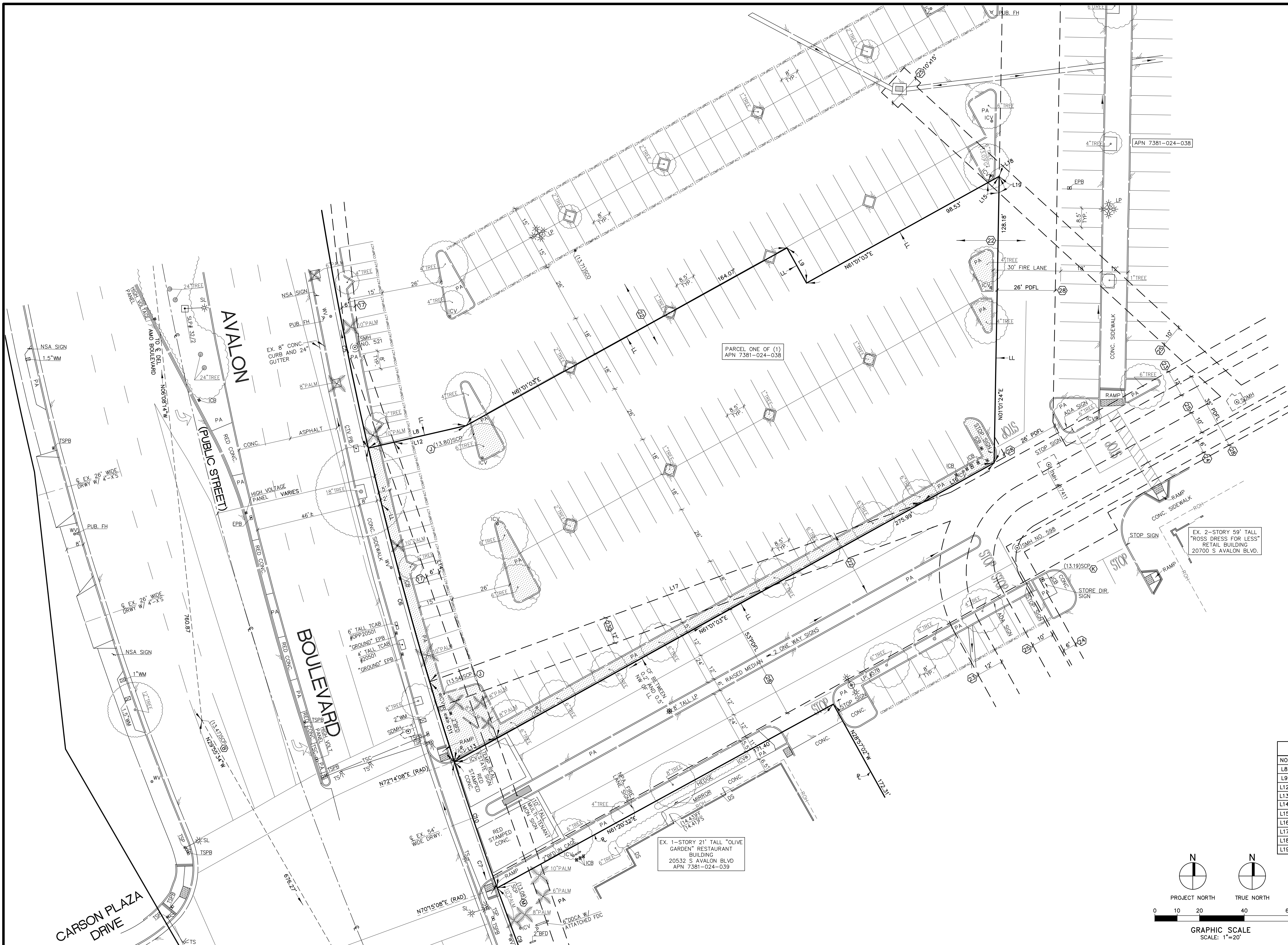


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**CITY ENTITLEMENT  
 SITE UTILIZATION MAP**

**C31**





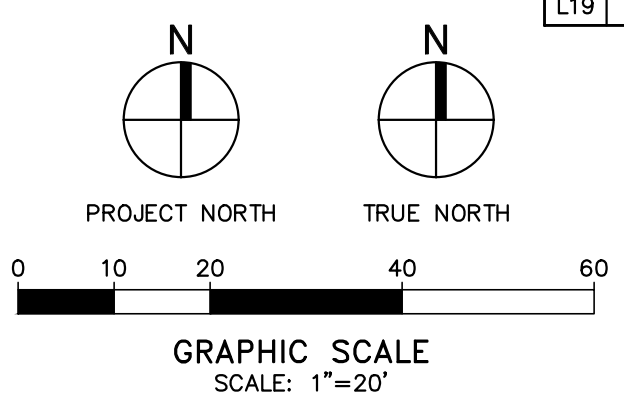
PARCEL ONE OF (1)  
APN 7381-024-038

EX. 1-STORY 21' TALL "OLIVE GARDEN" RESTAURANT BUILDING  
20532 S AVALON BLVD  
APN 7381-024-039

EX. 2-STORY 59' TALL "ROSS DRESS FOR LESS" RETAIL BUILDING  
20700 S AVALON BLVD.

LINE TABLE			CURVE DATA TABLE			
NO.	BEARING	DISTANCE	NO.	DELTA	RADIUS	LENGTH
L8	N77°05'15"E (RAD.)	44.91'	C5	06°46'31"	1719.16'	203.30'
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L14	N19°11'50"W	140.21'	C10	01°59'00"	1719.16'	59.51'
L15	N47°25'34"W	6.70'	C11	01°14'59"	1719.16'	37.50'
L16	N61°01'03"E	36.60'				
L17	N70°01'03"E	234.58'				
L18	N61°01'03"E	5.79'				
L19	N01°01'24"E	7.34'				

**ENCROACHMENT NOTES**  
THERE ARE NO VISIBLE ENCROACHMENTS FOUND.



- PARTIAL LEGEND**
- ① REFER TO THE BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTIONS SHOWN ON SHEET C39.1.
  - ② REFER TO EASEMENT DESCRIPTIONS SHOWN ON SHEET C39.
  - PDFL PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.
  - EXISTING LANDSCAPED PLANTER AREA ON-SITE CONSISTING OF 3,005 S.F. OR 8.1% OF THE GROSS SITE AREA.



**DEVELOPER:**  
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BALDWIN PARK, CA 91706  
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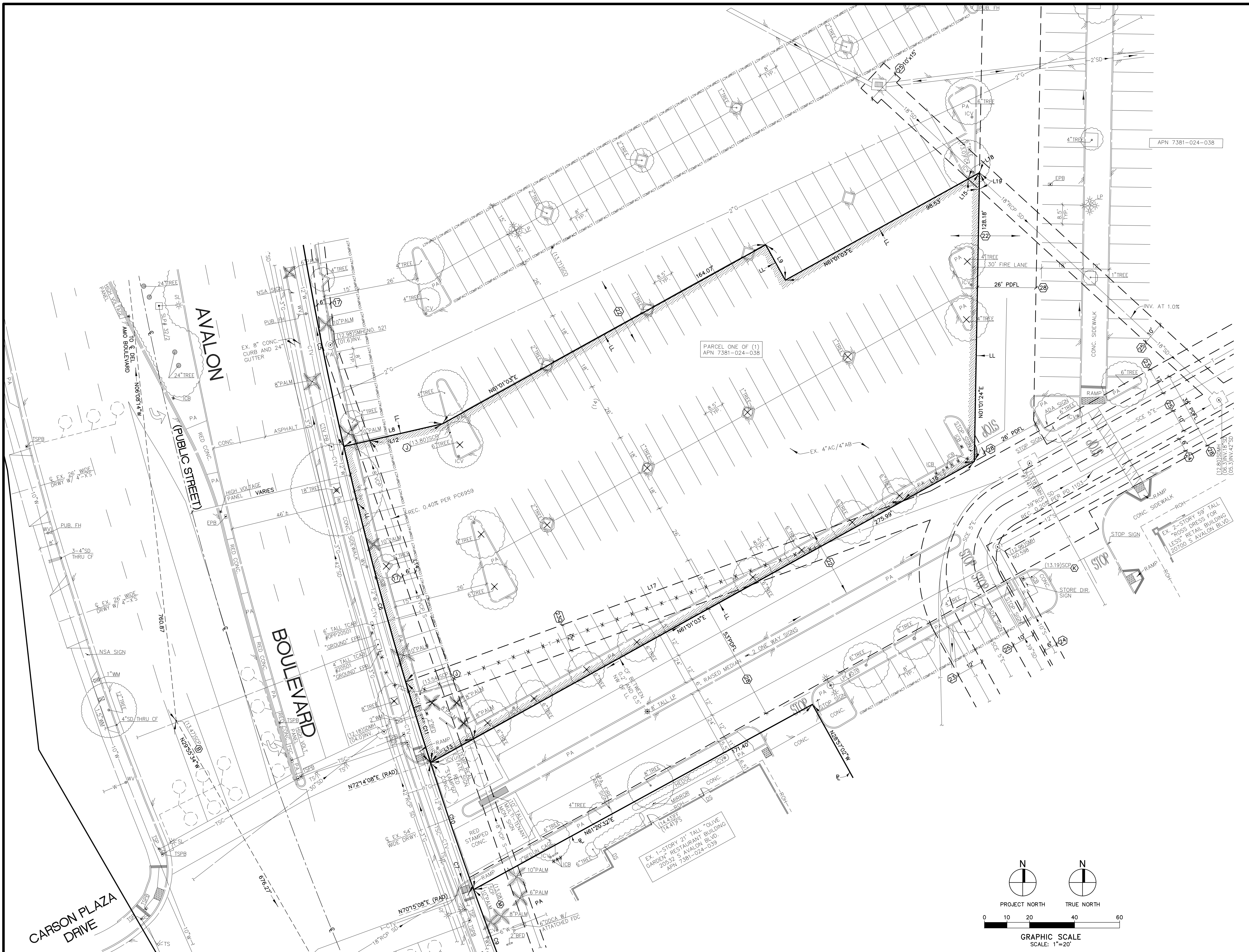


**IN-N-OUT BURGER**  
THE SHOPS AT  
SOUTHBAY PAVILION  
20500 ± S. AVALON BOULEVARD  
CARSON, CA 90746

**CITY ENTITLEMENT**  
**EXISTING SITE PLAN**

**C32**



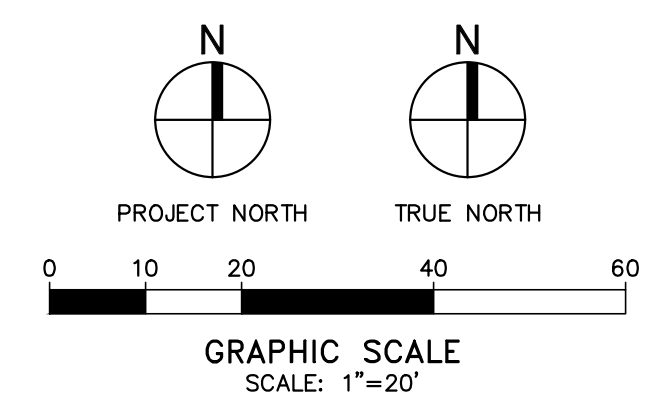


**CURVE DATA TABLE**

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C5	06°46'31"	1719.16'	203.30'
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L17	N70°01'03"E	234.58'
L18	N61°01'03"E	5.79'
L19	N01°01'24"E	7.34'



**PARTIAL LEGEND**

LIMITS OF ONSITE AND OFFSITE DEMOLITION FOR NEW SITE IMPROVEMENTS CONSISTING OF 36,964 SQ. FT. (0.85 ACRES).

21 ONSITE TREES PLUS 2 OFFSITE STREET TREES, ROOTS AND LIMBS TO BE REMOVED PER CITY TREE REMOVAL PERMIT FOR A TOTAL OF 23 TREES.

X-S-X-W ABANDON IN PLACE EXISTING UNDERGROUND UTILITY AND STORM DRAIN PIPE X-S-X-T-W WHICH ARE NOT IN CONFLICT WITH THE NEW SITE IMPROVEMENTS OR REMEDIAL GRADING.



**DEVELOPER:**  
 IN-N-OUT BURGER  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVUN  
 PHONE: 626 813-5378



**REVISIONS**

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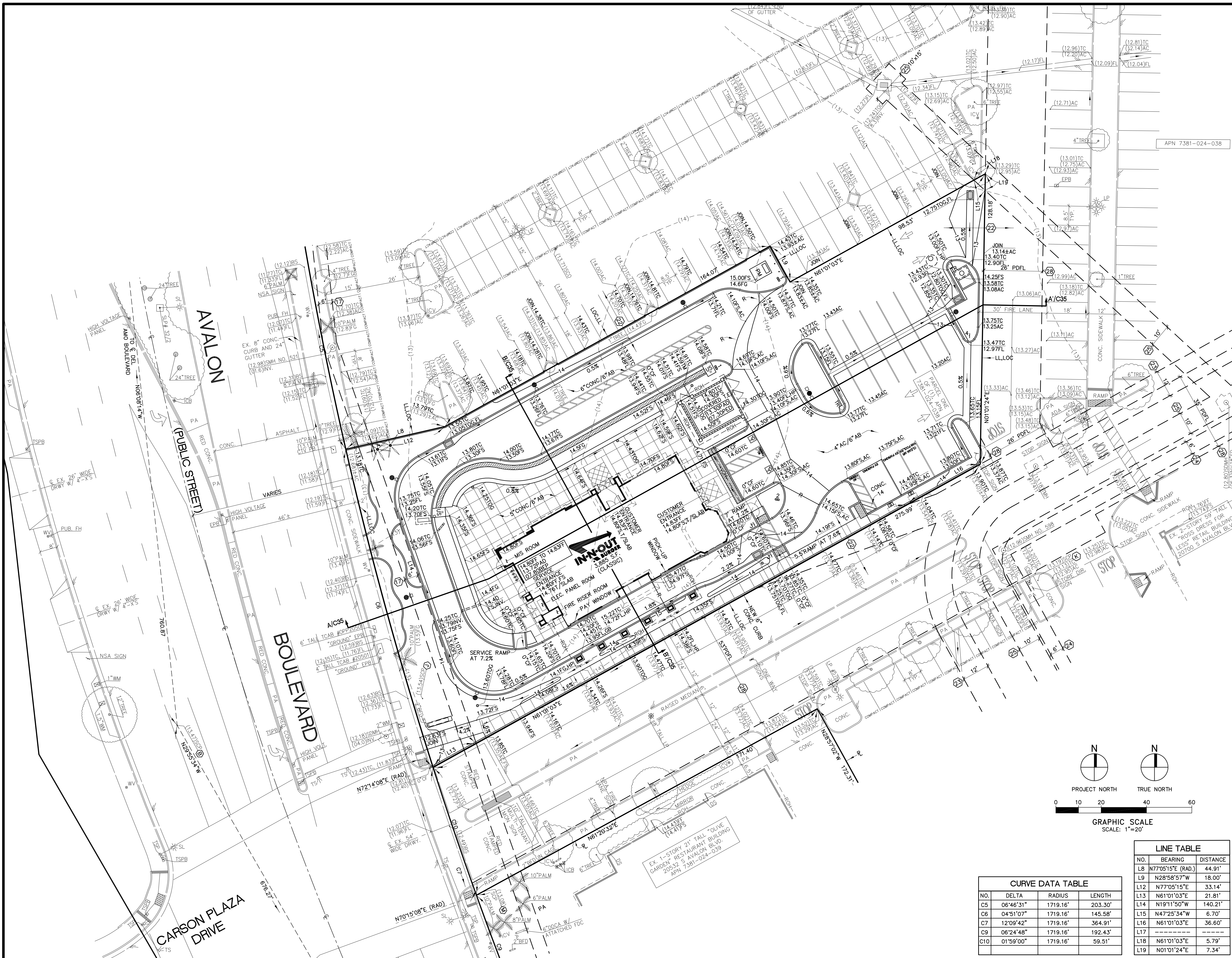


**IN-N-OUT BURGER**  
 THE SHOPS AT  
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 CARSON, CA 90746

**CITY ENTITLEMENT  
 DEMOLITION PLAN**

**C33**





**LIME-TREATED SOILS NOTE**

THE UPPER ON-SITE SOILS CONSISTED OF SANDY CLAY. THE CLAYEY SOILS APPEARED TO HAVE A LOW TO MODERATE SWELL POTENTIAL. TO REDUCE POTENTIAL SOIL MOVEMENT THE UPPER 18 INCHES OF SOIL SUPPORTING THE SLAB AND EXTERIOR FLATWORK AREAS SHALL CONSIST OF LIME-TREATED CLAYEY SOILS. THE LIME-TREATED SOILS SHOULD BE RECOMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DENSITY. PRELIMINARY APPLICATION RATE OF LIME SHOULD BE 5 PERCENT BY DRY WEIGHT. THE LIME MATERIAL SHALL BE CALCIUM OXIDE, COMMONLY KNOWN AS QUICK LIME. THE CLAYEY SOILS SHOULD BE AT OR ABOVE OPTIMUM MOISTURE DURING THE MIXING OPERATIONS.

**GEOGRID LAYER SOILS NOTE**

THE 2 BUILDING AREAS SHALL BE OVER-EXCAVATED TO A DEPTH OF FOUR FEET BELOW FOUNDATION BEARING GRADES (BEP ELEVATION) AND THE RESULTING EXCAVATION SHALL BE BACKFILLED WITH A LAYERED SYSTEM OF ENGINEERED FILL AND GEOGRID REINFORCEMENT.

THE FIRST LAYER OF GEOGRID REINFORCEMENT WILL BE PLACED DIRECTLY AT THE BOTTOM OF THE EXCAVATION. THE GEOGRID MATERIAL SHOULD BE OVERLAPPED A MINIMUM OF THREE FEET IN ALL DIRECTIONS. THE GEOGRID STRIPS SHOULD BE "SHINGLED" SUCH THAT THE EXPOSED GEOGRID EDGE IS OPPOSITE THE DIRECTION OF FILL PLACEMENT (AS ROOF SHINGLES TO RAIN RUNOFF). THE INTERLOCK BETWEEN THE GEOGRID AND ENGINEERED FILL WILL PROVIDE LOAD TRANSFER. NO VEHICLE MAY TRAVERSE THE GEOGRID PRIOR TO PLACEMENT OF THE ENGINEERED FILL COVER.

THE NEXT LAYER OF GEOGRID SHALL BE PLACED ON TOP OF THE COMPACTED ENGINEERED FILL. THIS AND SUBSEQUENT LAYERS NEED ONLY BE OVERLAPPED A MINIMUM OF ONE FOOT ON ALL SIDES. THE GEOGRID STRIPS OF THIS LAYER, AND ALL SUBSEQUENT LAYERS WITHIN THE FOOTPRINT, SHALL BE PLACED WITH LENGTHS PERPENDICULAR TO THOSE IN THE LAYER IMMEDIATELY BELOW. THE FILL SOILS EXCAVATED FROM THE AREA BENEATH THE STRUCTURE MAY BE MOISTURE CONDITIONED AND RECOMPACTED BETWEEN GEOGRID LAYERS AS REINFORCED FILL. THE REINFORCED FILL SHALL BE CONDITIONED TO A MINIMUM OF TWO PERCENT ABOVE OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY BASED ON ASTM D1557 TEST METHOD.

A TOTAL OF FOUR GEOGRID LAYERS, INCLUDING THE LAYER AT THE BASE OF THE EXCAVATION, SHALL BE INSTALLED AT VERTICAL INCREMENTS OF APPROXIMATELY EIGHT TO TWELVE INCHES. THE GEOGRID LAYERS SHALL EXTEND TO A MINIMUM OF FIVE (5) FEET BEYOND THE EXTERIOR FOOTING PERIMETER OF THE STRUCTURE. THE GEOGRID REINFORCEMENT FABRIC SHALL CONSIST OF TENSAAR BX 6200 OR TX 7 GEOGRID, OR EQUIVALENT. ANY ADDITIONAL UNSTABLE SOILS WITHIN BUILDING AREAS SHALL BE EXCAVATED AND BACKFILLED WITH ENGINEERED FILL AS REQUESTED BY THE SOILS ENGINEER.

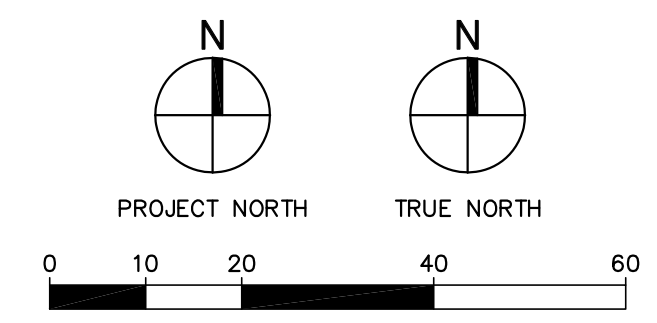
**ENGINEER'S PRELIMINARY ESTIMATED EARTHWORK QUANTITIES**

1. RAW CUT (INCLUDES 500 C.Y. FOOTING EXCAVATION, STORM DRAIN AND UTILITY SPOOLS).	800 CU. YDS.
2. OVEREXCAVATE THE LOOSE SOIL UNDER THE NEW BUILDING, AND COVERED TRASH ENCLOSURE AREA IDENTIFIED AS THE BOTTOM OF EXCAVATED PLANE (BEP) UP TO THE PAD ELEVATION. (9,000 S.F.)	2,000 CU. YDS.
3. OVEREXCAVATE THE TOP 1 FOOT OF LOOSE SOIL UNDER THE PROPOSED PAVEMENT AND EXTERIOR HARDSCAPE SUBGRADE WITHIN THE DEVELOPED SITE. (21,000 S.F.)	800 CU. YDS.
4. TOTAL SOIL CUT.	3,600 CU. YDS.
5. RAW FILL.	135 CU. YDS.
6. SHRINKAGE OF RAW FILL USING AN ASSUMED 10% SHRINKAGE LOSS.	15 CU. YDS.
7. RECOMPACT EXISTING ONSITE SOILS FOR THE AREAS DETAILED IN ITEM NO. 2 ABOVE USING AN ASSUMED 10% SHRINKAGE LOSS.	2,200 CU. YDS.
8. RECOMPACT EXISTING ONSITE SOILS FOR AREAS DETAILED IN ITEM NO. 3 ABOVE USING AN ASSUMED 10% SHRINKAGE LOSS.	900 CU. YDS.
9. TOTAL COMPACTED FILL SOIL.	3,250 CU. YDS.
10. ESTIMATED AMOUNT OF SOIL TO EXPORT FROM THE SITE.	350 CU. YDS.

NOTE: THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THEIR OWN EARTHWORK QUANTITIES FOR BIDDING PURPOSES. THE QUANTITIES SHOWN HEREON ARE THE ENGINEER'S ESTIMATE ONLY.

**LEGEND**

	NEW 24"x36" CONCRETE DRAIN BOX INLET WITH A FLOOR PLUS FOSSIL FILTER. INSERT FOR THE PRE-TREATMENT OF STORMWATER RUNOFF.		INOB LIMITS OF PROPOSED CONSTRUCTION.
	PROPOSED INOB INSTALLED AND MAINTAINED 22"-6" TALL FIXTURE HEIGHT LIGHT POLE ON TOP OF A 30" TALL 24" DIAMETER CONCRETE BASE FOR A TOTAL HEIGHT OF 25" TALL MAXIMUM.		SCE ELECTRIC PAD MOUNT TRANSFORMER WITH BOLLARDS.
	VEHICLE DETECTOR LOOP.		PORTABLE TRASH RECEPTACLE ON A MINIMUM 24"x24"x4" CONCRETE PAD. HEIGHT OF 25" TALL MAXIMUM.
	PROPERTY LINE.		NEW CONCRETE SIDEWALK.
	NEW 3' TALL 18"x24" LIT "DRIVE THRU" DIRECTIONAL SIGN.		BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTION SHOWN ON SHEET C39.1.
	NEW 3' TALL 18"x24" LIT "THANK YOU, DO NOT ENTER" DIRECTIONAL SIGN.		SIMPLIFIED PLOTTABLE EASEMENT DESCRIPTION SHOWN ON SHEET C39.
	NEW PEDESTRIAN CROSSWALK SIGN.		DRIVE-THRU CATWALK CONCRETE PAD WITH UMBRELLA STAND.
	NEW ACCESSIBILITY ENTRY SIGN.		FUTURE EV (ELECTRIC VEHICLE) CHARGEPONT EXPRESS 250 CHARGING STATION (OR EQUIVALENT), PROPOSED 4" DIAMETER ELECTRIC PULL BOX AND CLEAR FLOOR SPACE.
	INOB IN-OUT BURGER.		PROPOSED 18" x 27" TALL 22" WIDE STUCCO COVERED SEAT/SCREEN WALL WITH A PRECAST CONCRETE CAP.
	INOB LEASE PREMISES LINE.		24" WIDE MATTED INOB ASSOCIATE WALKWAY PER _____ CONSISTING OF APPROXIMATELY 278 SQUARE FEET.
	CURB FACE.		PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.
	PROPOSED BIOCLEAN PRECAST CONCRETE MODULAR WETLANDS UNIT WETLANDMOD-6-8-5-0-V STORMWATER BIOFILTRATION SYSTEM.		



**CURVE DATA TABLE**

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**IN-N-OUT BURGER**

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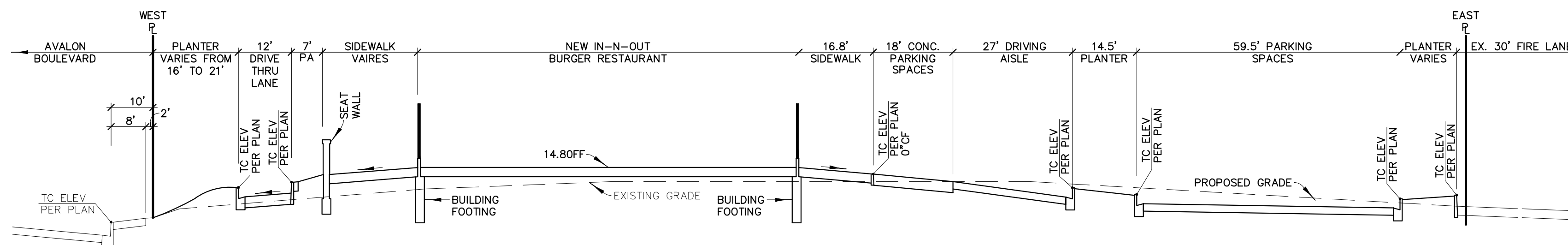
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**CITY ENTITLEMENT  
GRADING AND  
DRAINAGE PLAN**

**C34**

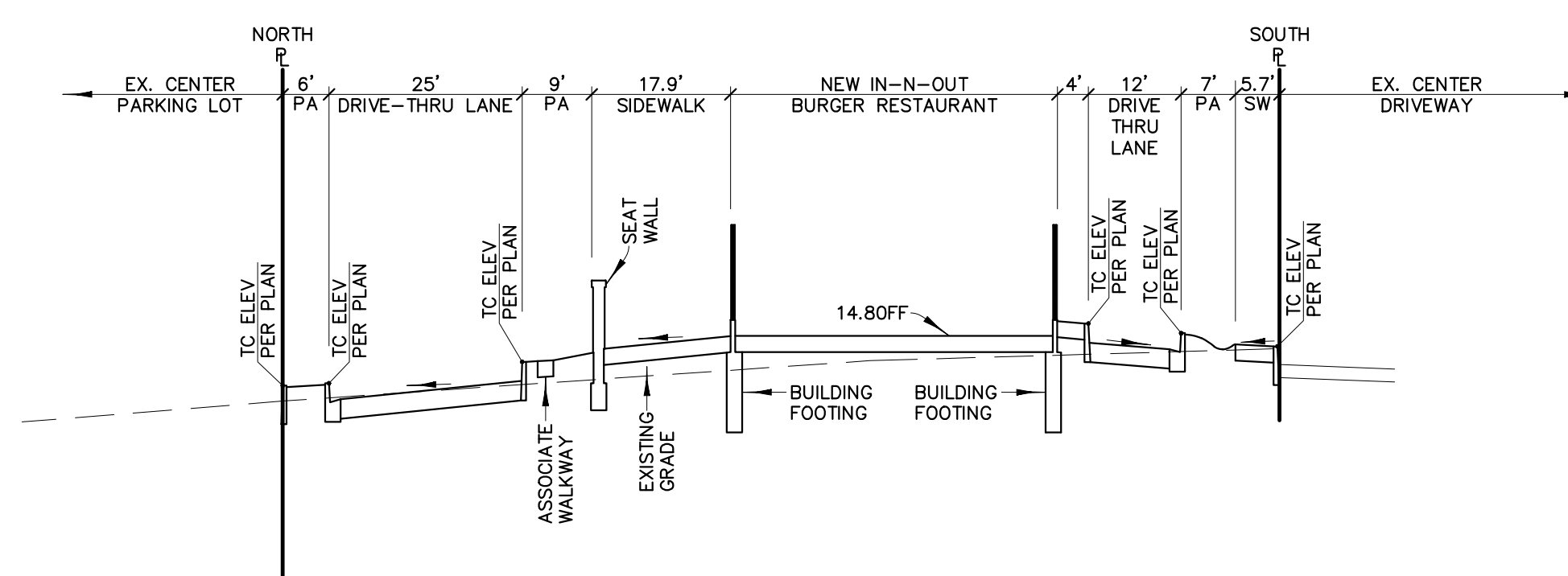
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**SECTION A/C35-A'/C35**

REFERENCE: SHEET C34  
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 VERT. SCALE: 1"=4'

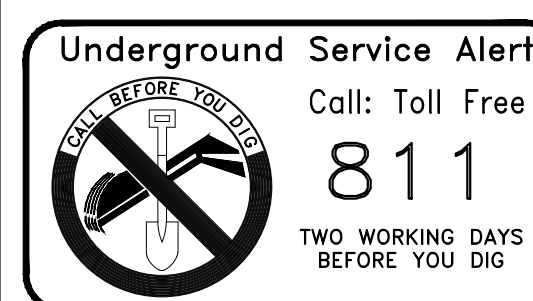


**SECTION B/C35-B'/C35**

REFERENCE: SHEET C34  
 HOR. SCALE: 1"=20'  
 VERT. SCALE: 1"=4'



DEVELOPER:  
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 13502 HAMBURGER LANE  
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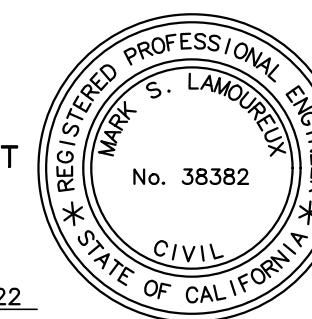


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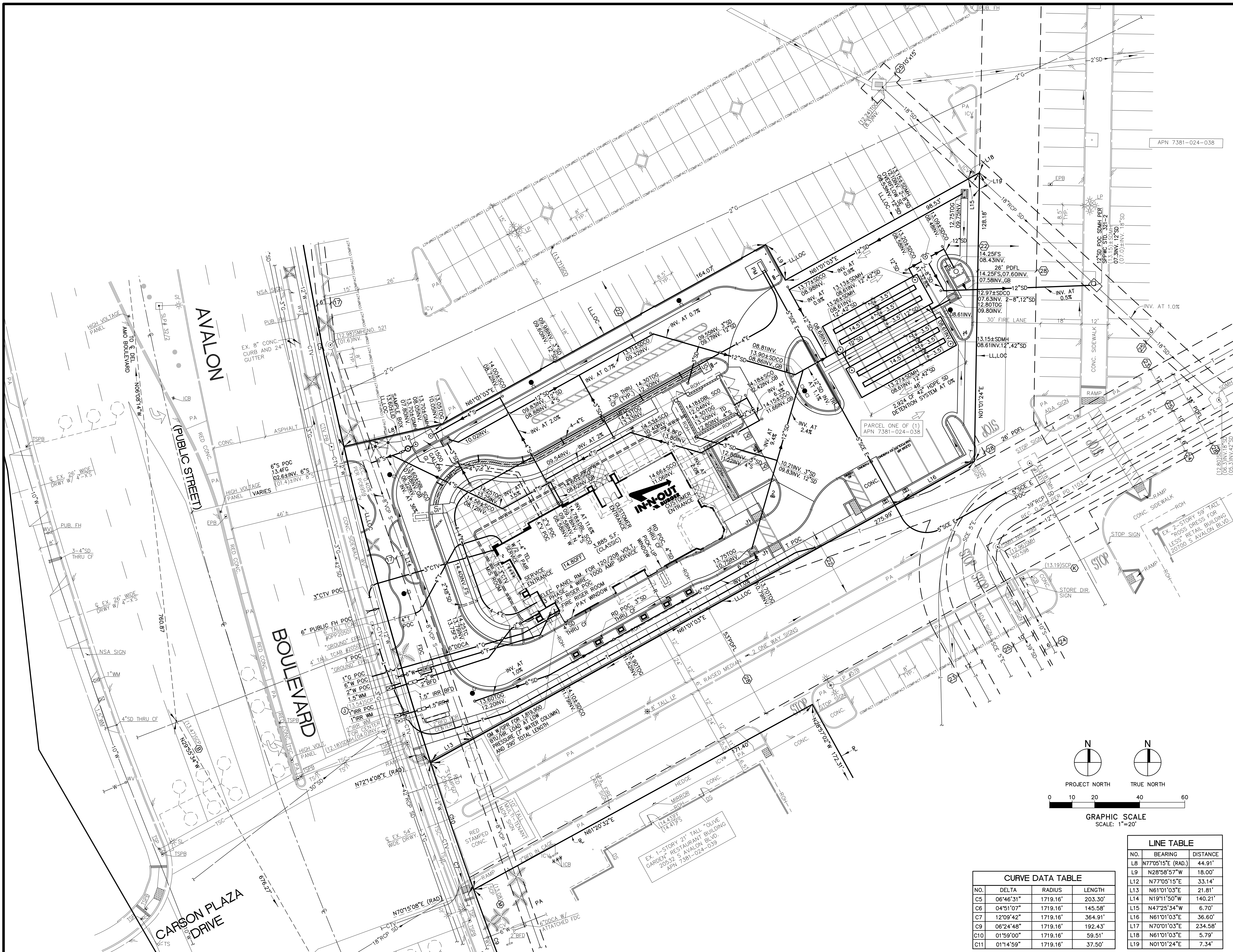
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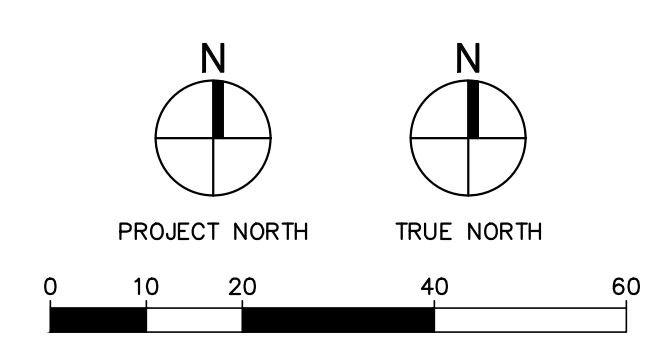
**CITY ENTITLEMENT  
 GRADING PLAN CROSS  
 SECTIONS SHEET**

**C35**



**LEGEND**

- NEW 24"x36" CONCRETE DRAIN BOX INLET WITH A FLOGARD PLUS FOSSIL FILTER INSERT FOR THE PRE-TREATMENT OF STORMWATER RUNOFF.
- PROPOSED INOB INSTALLED AND MAINTAINED 22"-6" TALL FIXTURE HEIGHT LIGHT POLE ON TOP OF A 30" TALL 24" DIAMETER CONCRETE BASE FOR A TOTAL HEIGHT OF 25" TALL MAXIMUM.
- BLACK TRUNCATED DOMES DETECTABLE WARNING STRIP.
- VEHICLE DETECTOR LOOP.
- PROPERTY LINE.
- NEW 3' TALL 18"x24" LIT "DRIVE THRU" DIRECTIONAL SIGN.
- NEW 3' TALL 18"x24" LIT "THANK YOU, DO NOT ENTER" DIRECTIONAL SIGN.
- NEW PEDESTRIAN CROSSWALK SIGN.
- NEW ACCESSIBILITY ENTRY SIGN.
- INOB IN-N-OUT BURGER.
- INOB LEASE PREMISES LINE.
- CURB FACE.
- PROPOSED BIOCLEAN PRECAST CONCRETE MODULAR WETLANDS UNIT WETLANDMOD-6-8-5'-0"-V STORMWATER BIOFILTRATION SYSTEM.
- MFD MULTI-FLOW DRAIN
- INOB LIMITS OF PROPOSED CONSTRUCTION.
- VOH 2' VEHICLE OVERHANG WITH NO OBSTRUCTIONS INCLUDING LIGHT POLES, TREES AND SIGNAGE.
- SCE ELECTRIC PAD MOUNT TRANSFORMER WITH BOLLARDS.
- PORTABLE TRASH RECEPTACLE ON A MINIMUM 24"x24"x4" CONCRETE PAD.
- NEW CONCRETE SIDEWALK.
- BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTION SHOWN ON SHEET C39.1.
- SIMPLIFIED PLOTTABLE EASEMENT DESCRIPTION SHOWN ON SHEET C39.
- DRIVE-THRU CATWALK CONCRETE PAD WITH UMBRELLA STAND.
- FUTURE EV (ELECTRIC VEHICLE) CHARGEPOINT EXPRESS 250 CHARGING STATION (OR EQUIVALENT), PROPOSED 4" DIAMETER ELECTRIC PULL BOX AND CLEAR FLOOR SPACE.
- PROPOSED 18" TO 27" TALL 22" WIDE STUCCO COVERED SEA/SCREEN WALL WITH A PRECAST CONCRETE CAP.
- 24" WIDE MATTED INOB ASSOCIATE WALKWAY PER CONSISTING OF APPROXIMATELY 278 SQUARE FEET.
- PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.



**CURVE DATA TABLE**

NO.	DELTA	RADIUS	LENGTH
C5	06°46'31"	1719.16'	203.30'
C6	04°51'07"	1719.16'	145.58'
C7	12°09'42"	1719.16'	364.91'
C9	06°24'48"	1719.16'	192.43'
C10	01°59'00"	1719.16'	59.51'
C11	01°14'59"	1719.16'	37.50'

**LINE TABLE**

NO.	BEARING	DISTANCE
L8	N77°05'15"E (RAD.)	44.91'
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L13	N61°01'03"E	21.81'
L14	N19°11'50"W	140.21'
L15	N47°25'34"W	6.70'
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L17	N70°01'03"E	234.58'
L18	N61°01'03"E	5.79'
L19	N01°01'24"E	7.34'

**IN-N-OUT BURGER**

DEVELOPER:  
 IN-N-OUT BURGER  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVIN  
 PHONE: 626 813-5378

**Underground Service Alert**

Call: Toll Free  
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REVISIONS

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GHA PROJECT NO. \_\_\_\_\_

**GHA**  
 Architecture/Development  
 14901 Quorum Drive  
 Suite 300  
 Dallas Texas 75254  
 Ph: (972) 239-8884  
 Fax: (972) 239-5054

CIVIL ENGINEER:  
**MSL ENGINEERING, INC.**  
 CIVIL ENGINEERS AND LAND SURVEYORS SPECIALIZING IN SITE DEVELOPMENT  
 301 NORTH SAN DIMAS AVENUE, SAN DIMAS, CA. 91773  
 (909) 305-2395 FAX (909) 305-2397

*Mark S. Lamoureux*  
 MARK S. LAMOUREUX  
 R.C.E. 38382

01-21-2022  
 DATE



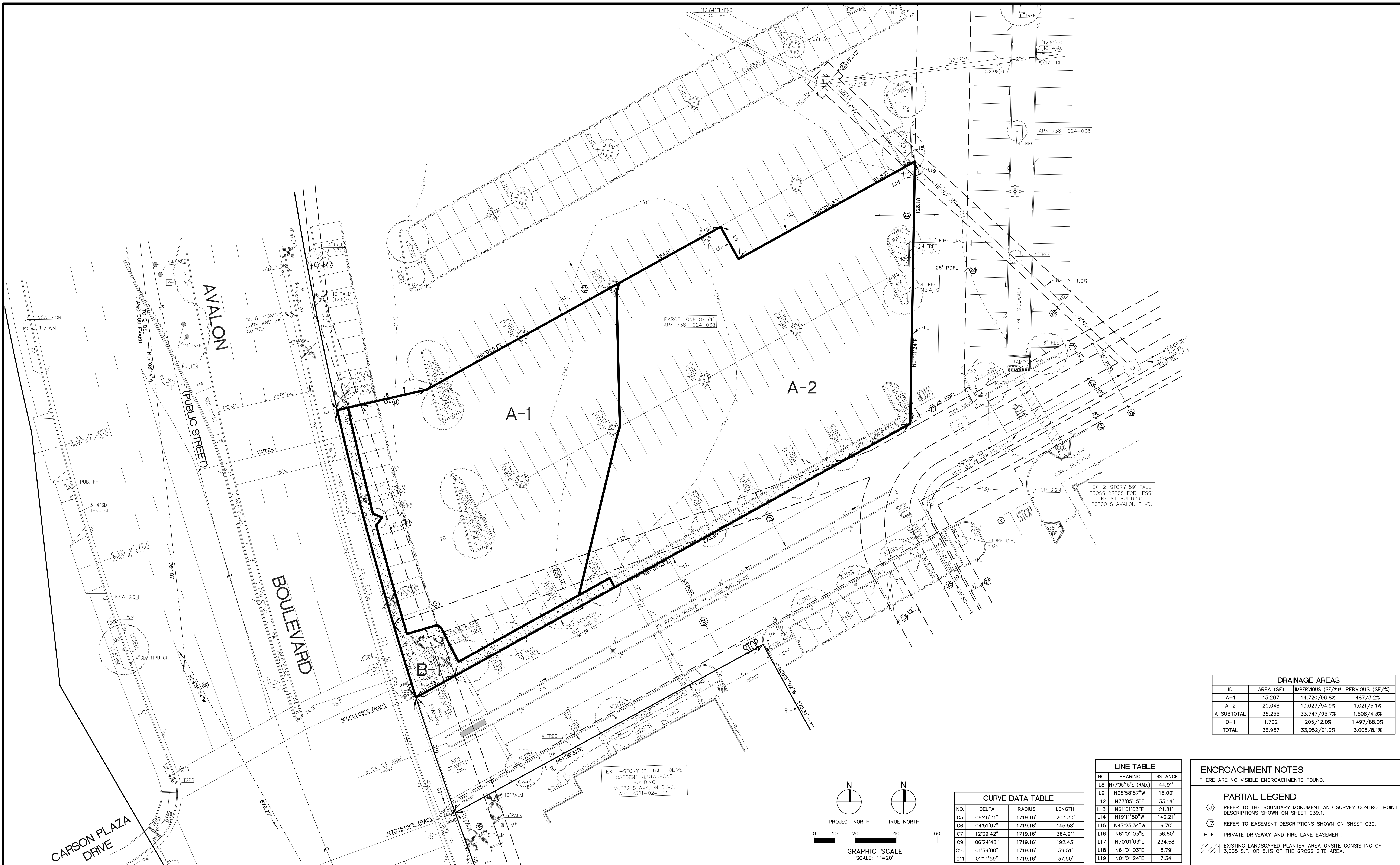
**IN-N-OUT BURGER**  
 THE SHOPS AT  
 SOUTHBAY PAVILION  
 20500 ± S. AVALON BOULEVARD  
 CARSON, CA 90746

**CITY ENTITLEMENT  
 STORM DRAIN AND  
 UTILITY PLAN**

**C36**

JN 2008-2008 C36.dwg

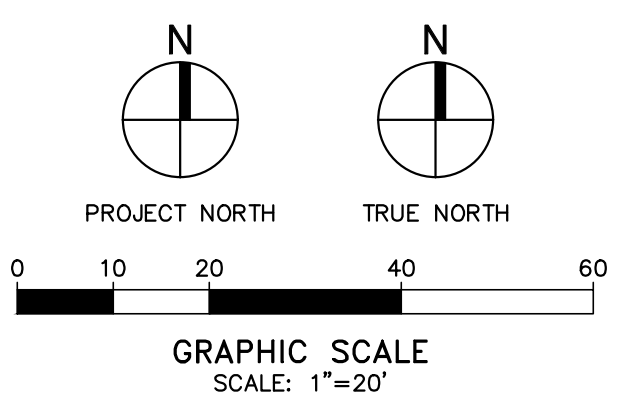




DRAINAGE AREAS			
ID	AREA (SF)	IMPERVIOUS (SF/%)	PERVIOUS (SF/%)
A-1	15,207	14,720/96.8%	487/3.2%
A-2	20,048	19,027/94.9%	1,021/5.1%
A SUBTOTAL	35,255	33,747/95.7%	1,508/4.3%
B-1	1,702	205/12.0%	1,497/88.0%
TOTAL	36,957	33,952/91.9%	3,005/8.1%

LINE TABLE		
NO.	BEARING	DISTANCE
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C11	01°14'59"	1719.16'	37.50'



**ENCROACHMENT NOTES**  
THERE ARE NO VISIBLE ENCROACHMENTS FOUND.

**PARTIAL LEGEND**

- Ⓧ REFER TO THE BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTIONS SHOWN ON SHEET C39.1.
- Ⓡ REFER TO EASEMENT DESCRIPTIONS SHOWN ON SHEET C39.
- PDFL PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.
- EXISTING LANDSCAPED PLANTER AREA ON-SITE CONSISTING OF 3,005 S.F. OR 8.1% OF THE GROSS SITE AREA.

**IN-N-OUT BURGER**

DEVELOPER:  
IN-N-OUT BURGER  
13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706  
CONTACT: MARC LEVIN  
PHONE: 626 813-5378

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GHA PROJECT NO. **14901**

**GHA**  
Architecture/Development  
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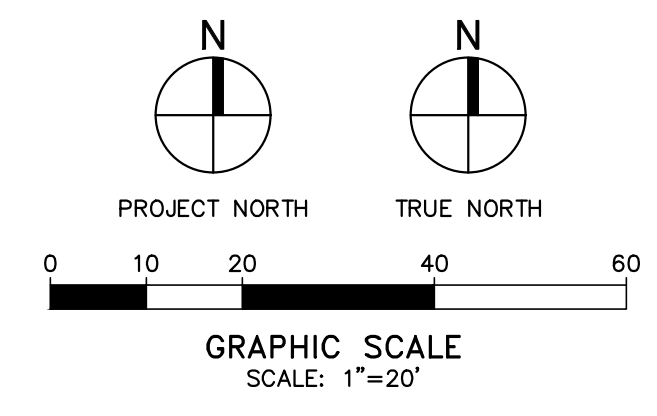
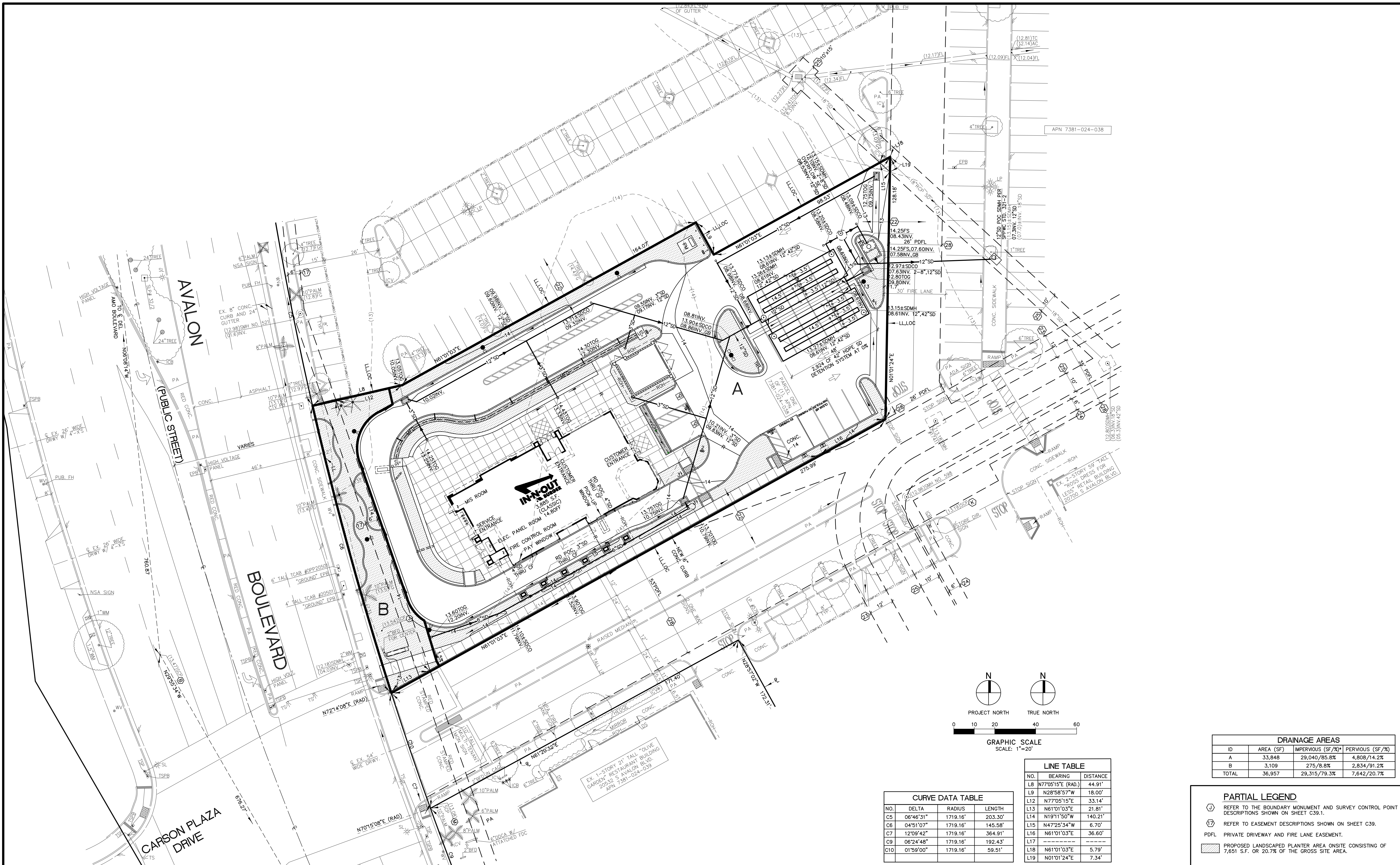
01-21-2022 DATE

**IN-N-OUT BURGER**  
THE SHOPS AT  
SOUTHBAY PAVILION  
20500 ± S. AVALON BOULEVARD  
CARSON, CA 90746

**CITY ENTITLEMENT  
HYDROLOGY STUDY  
MAP-EXISTING  
CONDITION**

**C37**





DRAINAGE AREAS			
ID	AREA (SF)	IMPERVIOUS (SF/%)	PERVIOUS (SF/%)
A	33,848	29,040/85.8%	4,808/14.2%
B	3,109	275/8.8%	2,834/91.2%
TOTAL	36,957	29,315/79.3%	7,642/20.7%

CURVE DATA TABLE		
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L17	-----	-----
L18	N61°01'03"E	5.79'
L19	N01°01'24"E	7.34'

**PARTIAL LEGEND**

① REFER TO THE BOUNDARY SURVEY AND SURVEY CONTROL POINT DESCRIPTIONS SHOWN ON SHEET C39.1.

② REFER TO EASEMENT DESCRIPTIONS SHOWN ON SHEET C39.

PDFL PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.

PROPOSED LANDSCAPED PLANTER AREA ON SITE CONSISTING OF 7,651 S.F. OR 20.7% OF THE GROSS SITE AREA.



DEVELOPER:  
**IN-N-OUT BURGER**  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVUN  
 PHONE: 626 813-5378



REVISIONS

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 Mark S. Lamoureux  
 MARK S. LAMOUREUX R.C.E. 38382 01-21-2022 DATE



**IN-N-OUT BURGER**  
 THE SHOPS AT  
 SOUTHBAY PAVILION  
 20500 ± S. AVALON BOULEVARD  
 CARSON, CA 90746

**CITY ENTITLEMENT  
 HYDROLOGY STUDY  
 MAP-PROPOSED  
 CONDITION**

**C37.1**



DRAINAGE AREAS			
ID	AREA (SF)	IMPERVIOUS (SF/%)	PERVIOUS (SF/%)
A	33,848	29,040/85.8%	4,808/14.2%
B	3,109	275/8.8%	2,834/91.2%
TOTAL	36,957	29,315/79.3%	7,642/20.7%

### LID SITE PLAN CONSTRUCTION NOTES

- (S1) STORM DRAIN MESSAGE AND SIGNAGE
- (S3) OUTDOOR TRASH STORAGE/WASTE HANDLING AREA
- (S8) LANDSCAPE IRRIGATION PRACTICES

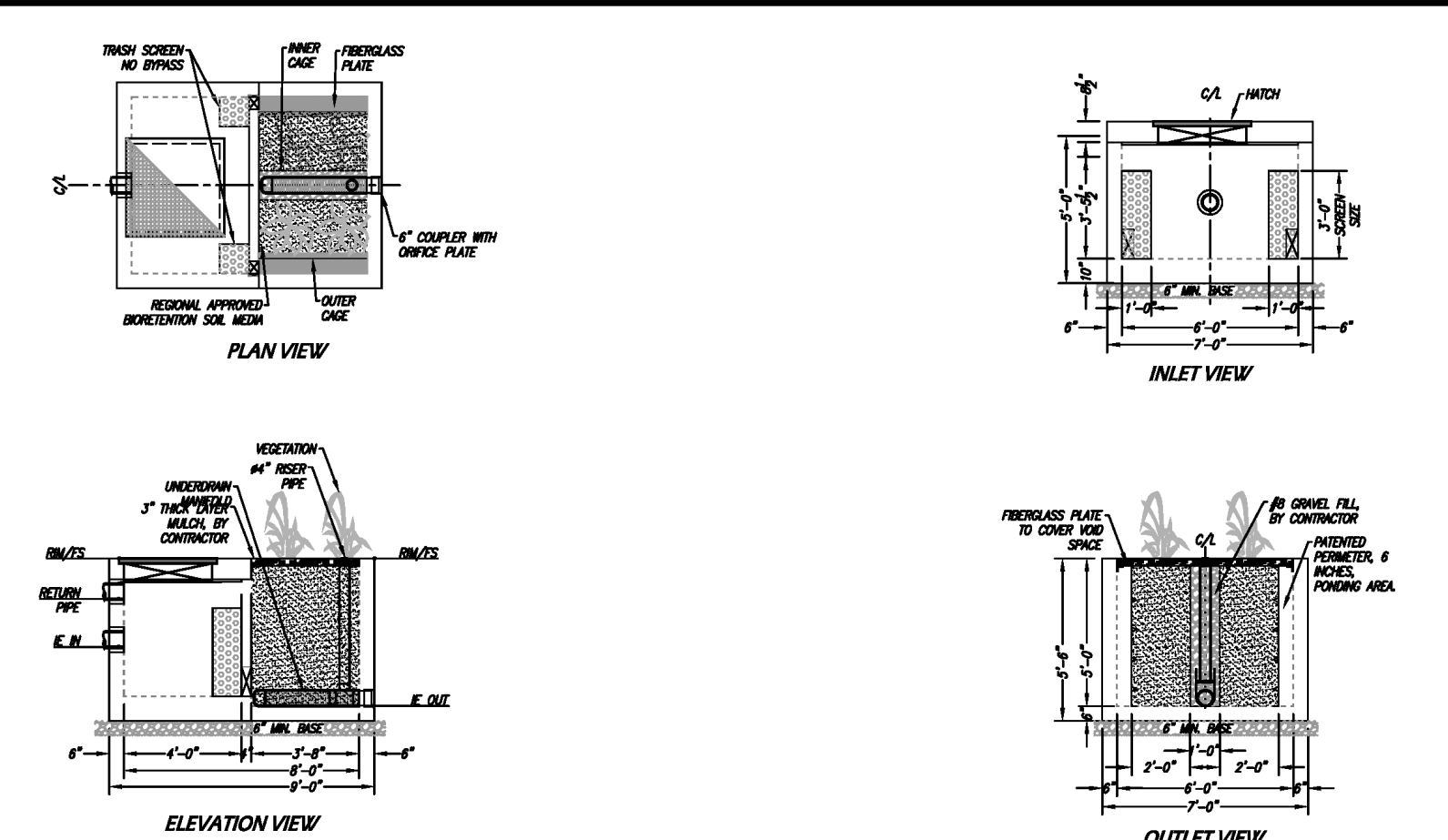
### LID LEGEND

- (S1) NEW 24"x36" CONCRETE DRAIN BOX INLET WITH A FLOGARD PLUS FOSSIL FILTER INSERT FOR THE PRE-TREATMENT OF STORMWATER RUNOFF.
- (S8) PROPOSED INOB INSTALLED AND MAINTAINED DROUGHT TOLERANT LANDSCAPED PLANTER AND IRRIGATION SYSTEM ON-SITE CONSISTING OF APPROXIMATELY 7,651 SQUARE FEET (20.7%).

### LEGEND

- NEW 24"x36" CONCRETE DRAIN BOX INLET WITH A FLOGARD PLUS FOSSIL FILTER INSERT FOR THE PRE-TREATMENT OF STORMWATER RUNOFF.
- PROPOSED INOB INSTALLED AND MAINTAINED 22"-6" TALL FIXTURE HEIGHT LIGHT POLE ON TOP OF A 30" TALL 24" DIAMETER CONCRETE BASE FOR A TOTAL HEIGHT OF 25" TALL MAXIMUM.
- BLACK TRUNCATED DOMES DETECTABLE WARNING STRIP.
- VEHICLE DETECTOR LOOP.
- PROPERTY LINE.
- NEW 3' TALL 18"x24" LIT "DRIVE THRU" DIRECTIONAL SIGN.
- NEW 3' TALL 18"x24" LIT "THANK YOU, DO NOT ENTER" DIRECTIONAL SIGN.
- NEW PEDESTRIAN CROSSWALK SIGN.
- NEW ACCESSIBILITY ENTRY SIGN.
- INOB IN-OUT BURGER.
- LL INOB LEASE PREMISES LINE.
- CF CURB FACE.
- PROPOSED BIOCLEAN PRECAST CONCRETE MODULAR WETLANDS UNIT WETLANDMOD-6-8-5'-0"-V STORMWATER BIOFILTRATION SYSTEM.
- INOB LIMITS OF PROPOSED CONSTRUCTION.
- 2" VEHICLE OVERHANGS WITH NO OBSTRUCTIONS INCLUDING LIGHT POLES, TREES AND SIGNAGE.
- SCE ELECTRIC PAD MOUNT TRANSFORMER WITH BOLLARDS.
- PORTABLE TRASH RECEPTACLE ON A MINIMUM 24"x24"x4" CONCRETE PAD.
- NEW CONCRETE SIDEWALK.
- BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTION SHOWN ON SHEET C39.1.
- SIMPLIFIED PLOTTABLE EASEMENT DESCRIPTION SHOWN ON SHEET C39.
- DRIVE-THRU CATALWALK CONCRETE PAD WITH UMBRELLA STAND.
- FUTURE EV (ELECTRIC VEHICLE) CHARGEPOINT EXPRESS 250 CHARGING STATION (OR EQUIVALENT), PROPOSED 4" DIAMETER ELECTRIC PULL BOX AND CLEAR FLOOR SPACE.
- PROPOSED 18" TO 27" TALL 22" WIDE STUCCO COVERED SEAT/SCREEN WALL WITH A PRECAST CONCRETE CAP.
- 24" WIDE MATTED INOB ASSOCIATE WALKWAY PER 250 SQUARE FEET.
- PROPOSED PRIVATE DRIVEWAY AND FIRE LANE EASEMENT.

SITE SPECIFIC DATA	
PROJECT ID	21008
PROJECT NAME	CARSON, CA IN-N-OUT BURGER
PROJECT LOCATION	CARSON, CA
STRUCTURE ID	
TREATMENT REQUIRED	
VOLUME BASED (CY)	FLOW BASED (CFS)
2,924	---
TREATMENT NOT AVAILABLE (FY)	
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	OFFLINE
PIPE DATA	LE, MATERIAL, DIAMETER
INLET PIPE	08.43 PVC-SDR35 12"
RETURN PIPE	N/A N/A N/A
OUTLET PIPE	07.60 PVC-SDR35 12"
PRE-TREATMENT	
RAW ELEVATION	14.25 0.00 0.00
SURFACE LOAD	PEDESTRIAN OPEN PLANTER N/A
FRAME & COVER	36" x 36" N/A N/A
LA COUNTY MEDIA MIX VOLUME (CY)	2.50
GRAVEL LAYER WITHIN MEDIA CHAMBER (CY)	0.51
ORFICE DIAMETER (IN)	---
NOTES: PRELIMINARY, NOT FOR CONSTRUCTION.	



- ### INSTALLATION NOTES
- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPOINTMENTS IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
  - UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
  - ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT INTERSECT BEYOND FLOORS. INSET OF OUTLET PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL GAPS AROUND PIPES SHALL BE SEALED WITH NON-SHINK GROUT PER MANUFACTURER'S STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
  - CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND WATCHES. CONTRACTOR TO DROPT ALL MANHOLES AND WATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE. DRIP OR SPRAY IRRIGATION PIPE CONNECTION STANDARDS.
- ### GENERAL NOTES
- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
  - ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES, PLEASE CONTACT MANUFACTURER.

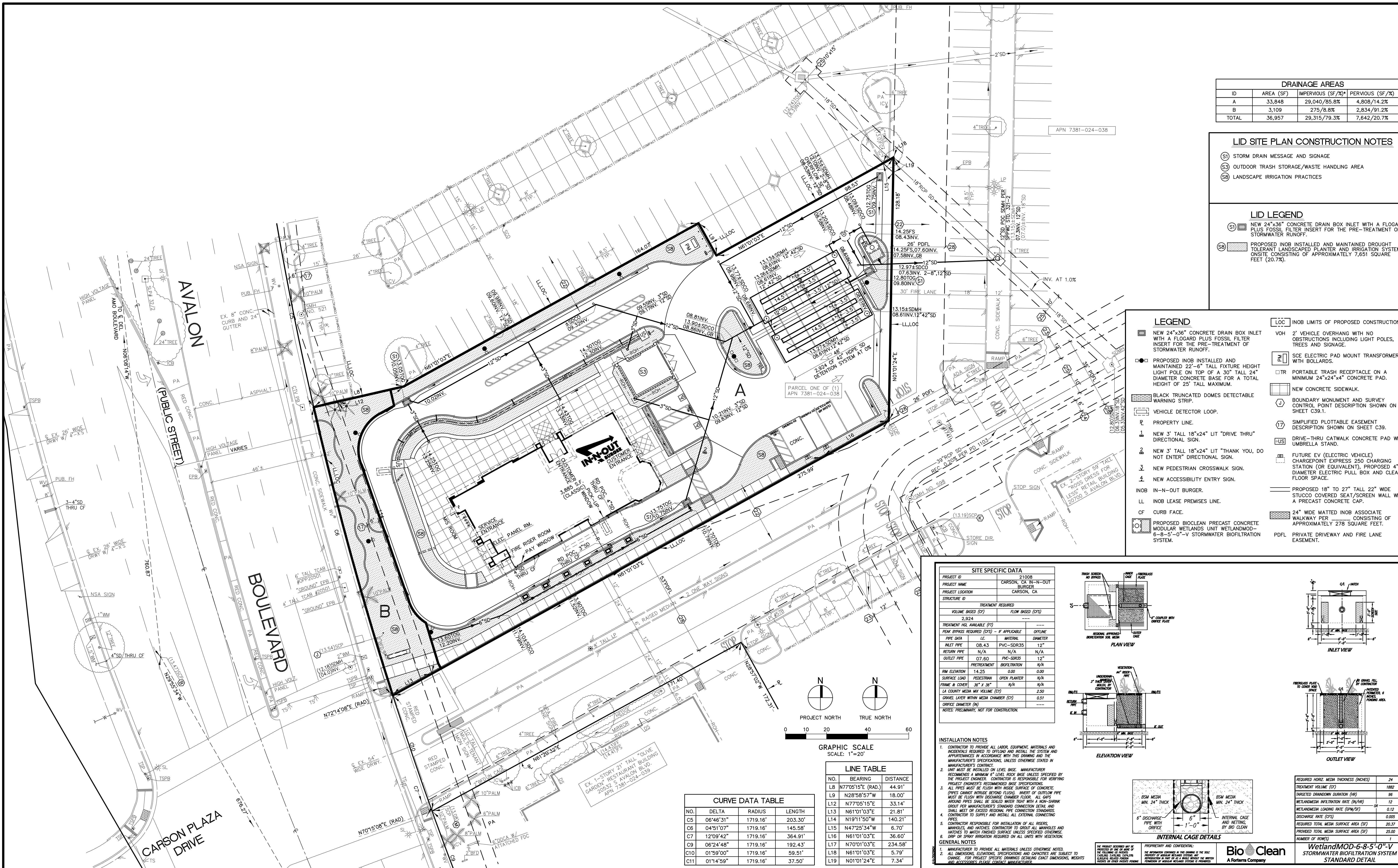
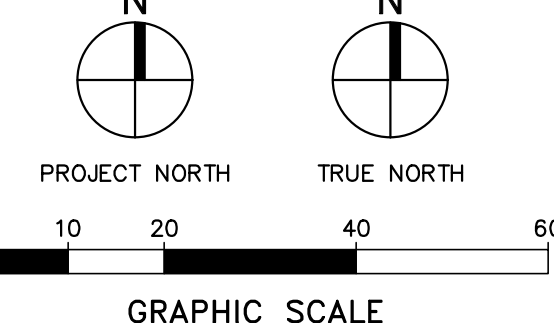
INTERNAL CAGE DETAILS	
REQUIRED MEDIA THICKNESS (INCHES)	24
TREATMENT VOLUME (CY)	1882
TARGETED DRAINAGE DURATION (HR)	36
METLANDMEDIA INFILTRATION RATE (IN/HR)	12
METLANDMEDIA LOADING RATE (GPM/SF)	0.02
DISCHARGE RATE (CFS)	0.015
REQUIRED TOTAL MEDIA SURFACE AREA (SF)	20.37
PROPOSED TOTAL MEDIA SURFACE AREA (SF)	25.00
NUMBER OF ROWS	1

### LINE TABLE

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L8	N77°05'15"E (RAD.)	44.91'
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THE SHOPS AT  
SOUTHBAY PAVILION  
20500± S. AVALON BOULEVARD  
CARSON, CA 90746

**CITY ENTITLEMENT  
PRELIMINARY LID  
SITE PLAN**

**C38**

WetlandMOD-6-8-5-0-V  
STORMWATER BIOFILTRATION SYSTEM  
STANDARD DETAIL

Bio Clean  
A Forterra Company

1/21/2022 10:36:53 AM: MSL ENGINEERING, INC. (SA)



**SIMPLIFIED PLOTTABLE EASEMENTS**

REFERENCE: FIRST AMERICAN TITLE INSURANCE COMPANY NATIONAL COMMERCIAL SERVICES PRELIMINARY TITLE REPORT WITH A COMMITMENT NO. OF NCS-1058946-SAI DATED MARCH 16, 2021 REVISION NO. 01 OUT OF THEIR IRVINE, CA OFFICE. TITLE OFFICER IS JEFFERY PASCHAL AT 949-885-2481 (paschal@firstam.com).

- 12. ITEM NO. 12  
A 10.00 FOOT WIDE PERPETUAL EASEMENT AND RIGHT-OF-WAY IN FAVOR OF COUNTY SANITATION DISTRICT NO. 8 OF LOS ANGELES COUNTY, STATE OF CALIFORNIA FOR SEWER PIPE LINE AND INCIDENTAL PURPOSES, IN THE DOCUMENT RECORDED AUGUST 26, 1938 AS BOOK 16054, PAGE 17 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.  
  
THE ABOVE DOCUMENT ENTITLED "SEWER EASEMENT" DATED JULY 19, 1938 WAS RE-RECORDED SEPTEMBER 13, 1938 IN BOOK 16072, PAGE 22 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 13. ITEM NO. 13  
A 5.00 FOOT WIDE EASEMENT IN FAVOR OF COUNTY SANITATION DISTRICT NO. 8 OF LOS ANGELES COUNTY IN THE DOCUMENT RECORDED NOVEMBER 18, 1938 IN BOOK 16105, PAGE 378 OF OFFICIAL RECORDS.
- 14. ITEM NO. 14  
A 10.00 FOOT WIDE PERMANENT AND EXCLUSIVE EASEMENT AND RIGHT OF WAY IN FAVOR OF DEFENSE PLANT CORPORATION, A CORPORATION CREATED BY THE RECONSTRUCTION FINANCE CORPORATION PURSUANT TO SECTION 5(D) OF THE RECONSTRUCTION FINANCE CORPORATION ACT, FOR PIPE LINES AND INCIDENTAL PURPOSES, WITH THE RIGHT OF INGRESS AND EGRESS TO AND FROM THE SAME, IN THE DOCUMENT RECORDED AUGUST 14, 1943 AS BOOK 20222, PAGE 50 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 15. ITEM NO. 15  
A 10.00 FOOT WIDE NON-EXCLUSIVE EASEMENT AND RIGHT-OF-WAY IN FAVOR OF FOUR CORNERS PIPE LINE COMPANY, A DELAWARE CORPORATION, ITS SUCCESSORS AND ASSIGNS, FOR PIPE LINES AND INCIDENTAL PURPOSES, WITH THE RIGHT OF INGRESS AND EGRESS TO AND FROM THE SAME, IN THE DOCUMENT RECORDED SEPTEMBER 17, 1957 AS BOOK 35626, PAGE 218 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 16. ITEM NO. 16  
AN EASEMENT IN FAVOR OF THE STATE OF CALIFORNIA FOR SLOPES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED SEPTEMBER 20, 1960 AS BOOK D980, PAGE 94 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 17. ITEM NO. 17  
A 6.00 FOOT WIDE EASEMENT IN FAVOR OF THE COUNTY OF LOS ANGELES FOR SANITARY SEWER AND INCIDENTAL PURPOSES, IN THE DOCUMENTS RECORDED MAY 28, 1964 AS BOOK D2488 PAGE 894, RECORDED MAY 28, 1964 AS BOOK D2488 PAGE 897, RECORDED MAY 28, 1964 AS BOOK D2488 PAGE 900, AND RECORDED MAY 28, 1964 AS BOOK D2488 PAGE 903, ALL OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 18. ITEM NO. 18  
A 6.00 FOOT WIDE EASEMENT IN FAVOR OF THE COUNTY OF LOS ANGELES FOR SANITARY SEWERS AND INCIDENTAL PURPOSES IN THE DOCUMENTS RECORDED JUNE 28, 1966 AS BOOK D3349 PAGE 770, RECORDED JUNE 28, 1966 AS BOOK D3349 PAGE 774, AND RECORDED JUNE 28, 1966 AS BOOK D3349 PAGE 776, ALL OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 19. ITEM NO. 19  
A 6.00 FOOT WIDE EASEMENT IN FAVOR OF THE CITY OF CARSON FOR SANITARY SEWERS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED NOVEMBER 19, 1970 AS BOOK D4893, PAGE 594 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 20. ITEM NO. 20  
ABUTTER'S RIGHTS OF INGRESS AND EGRESS TO OR FROM THOSE PORTIONS OF DEL AMO BOULEVARD, AVALON BOULEVARD, LEAPWOOD AVENUE, AND DOMINGUEZ STREET HAVE BEEN RELINQUISHED TO THE CITY OF CARSON IN THE DOCUMENT RECORDED MARCH 24, 1972 AS INSTRUMENT NO. 4531 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.  
  
[AMONG OTHER THINGS, THIS ITEM STATES THAT (1) THE CITY OF CARSON HAS THE RIGHT TO RESTRICT VEHICULAR ACCESS TO OR FROM THOSE PORTIONS OF AVALON BOULEVARD ALONG THE EASTERLY SIDELINE OF AVALON BOULEVARD BETWEEN POINT C (200' SOUTH OF DEL AMO BOULEVARD) AND POINT D (DOMINGUEZ STREET) EXCEPTING THEREFROM THE RIGHT TO PROVIDE SIX (6) DRIVEWAYS FOR VEHICULAR ACCESS TO AND FROM SAID PROPERTY WITH ONE OF SAID DRIVEWAYS LOCATED WITHIN AN AREA BETWEEN POINT C AND 700' SOUTH OF POINT C AND ONE OF SAID DRIVEWAYS SHALL BE LOCATED WITHIN AN AREA WHICH IS BETWEEN 800' SOUTH OF POINT C AND 120' NORTH OF POINT D; AND (2) EACH OF THE DRIVEWAYS SHALL NOT EXCEED 62' OVERALL IN WIDTH NOR SHALL THEY BE LOCATED CLOSER TO EACH OTHER THAN 22'.]
- 22. ITEM NO. 22  
MATTERS, INCLUDING BUT NOT LIMITED TO COVENANTS, CONDITIONS, RESTRICTIONS, EASEMENTS, ENCUMBRANCES, LIENS AND CHARGES BY AND AGAINST THE RETAIL BUILDING PARTNERSHIP COMPANY, A CALIFORNIA PARTNERSHIP ("DEVELOPER"), BROADWAY-HALE STORES, INC., A CALIFORNIA CORPORATION ("BROADWAY"), J.C. PENNEY PROPERTIES, INC., A CALIFORNIA CORPORATION ("PENNEY"), AND SEARS, ROEBUCK AND CO., A NEW YORK CORPORATION ("SEARS"), IN THE DOCUMENT ENTITLED "CONSTRUCTION, OPERATION AND RECIPROCAL EASEMENT AGREEMENT (CARSON)" DATED FEBRUARY 25, 1972, RECORDED MARCH 28, 1972 AS INSTRUMENT NO. 2971 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

[AMONG OTHER THINGS, THIS DEED STATES THAT (1) THE SURVEYED PROPERTY IS LOCATED WITHIN THE SEARS TRACT BEING THE 13.37 ACRE PARCEL NO. 2328; (2) THE OVERALL SHOPPING CENTER COMMON AREA SHALL INCLUDE, BUT NOT BE LIMITED TO, UTILITY LINES AND SYSTEMS, AUTOMOBILE PARKING AREAS, ACCESS ROADS, DRIVEWAYS, SIDEWALKS, MALLS, INCLUDING THE ENCLOSED MALL, PEDESTRIAN WALKWAYS AND STAIRWAYS (IF ANY), REST ROOMS NOT LOCATED WITHIN THE PREMISES OF ANY OCCUPANT, AND A COMMON AREA MAINTENANCE OFFICE AND COMMON AREA EQUIPMENT SHEDS; (3) EACH PARTY GRANTS TO EACH OF THE OTHER PARTIES A NON-EXCLUSIVE EASEMENT, WHICH SHALL EXPIRE ON THE TERMINATION DATE, OVER THE COMMON AREA OF ITS RESPECTIVE TRACT, FOR INGRESS TO AND EGRESS FROM SUCH RESPECTIVE TRACT, AND FOR THE PASSAGE AND PARKING OF VEHICLES, PASSAGE AND ACCOMMODATION OF PEDESTRIANS, AND THE NON-EXCLUSIVE USE OF THE SURFACE, AND EXCLUSIVE OR NON-EXCLUSIVE USES UNDER THE SURFACE FOR PASSAGE OF UTILITIES; (4) EACH PARTY HEREBY GRANTS TO THE OTHER, RESPECTIVELY, NON-EXCLUSIVE PERPETUAL EASEMENTS IN, TO, OVER, UNDER AND ACROSS ITS RESPECTIVE TRACT FOR THE INSTALLATION, OPERATION, FLOW AND PASSAGE, USE, MAINTENANCE, REPAIR, RELOCATION AND REMOVAL OF SEWERS (INCLUDING UNDERGROUND STORM SEWERS), WATER AND GAS MAINS, ELECTRICAL POWER LINES, TELEPHONE LINES AND OTHER UTILITY LINES; (5) PARKING SHALL BE PROVIDED AT A RATIO OF AT LEAST 4.5 AUTOMOBILE SPACES FOR EACH 1,000 SQUARE FEET OF FLOOR AREA WITHIN THE CENTER; AND (6) PARKING SPACES SHALL BE AT LEAST 9' WIDE WITH A BAY (2 ROWS OF PARKING PLUS A DRIVE AISLE) WIDTH OF AT LEAST 60' AND A PREFERRED WIDTH OF 62']

- 23. ITEM NO. 23 (TO BE OBTAINED)  
A 12.00 FOOT WIDE EASEMENT IN FAVOR OF PACIFIC TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION, ITS SUCCESSORS AND ASSIGNS, FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED DECEMBER 17, 1973 AS INSTRUMENT NO. 1673 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 24. ITEM NO. 24  
A 6.00 FOOT WIDE EASEMENT IN FAVOR OF THE CITY OF CARSON FOR SANITARY SEWERS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED DECEMBER 24, 1973 AS INSTRUMENT NO. 1017 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 25. ITEM NO. 25  
A 10.00 FOOT AND A 15.00 FOOT WIDE EASEMENT IN FAVOR OF THE CITY OF CARSON FOR STORM DRAINS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED DECEMBER 28, 1973 AS INSTRUMENT NO. 3801 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 26. ITEM NO. 26  
AN EASEMENT IN FAVOR OF THE CITY OF CARSON FOR TRAFFIC SIGNAL DETECTORS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED OCTOBER 05, 1976 AS INSTRUMENT NO. 4037 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.
- 28. ITEM NO. 28  
EASEMENTS FOR SANITARY SEWER(S), PRIVATE DRIVEWAY AND FIRE LANE (PDFL) AND INCIDENTAL PURPOSES SHOWN OR DEDICATED ON PARCEL MAP NO. 71684 FILED OCTOBER 02, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 THROUGH 88 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.
- 29. ITEM NO. 29  
AN EASEMENT AND RIGHT OF WAY IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION, ITS SUCCESSORS AND ASSIGNS, FOR UNDERGROUND ELECTRICAL SUPPLY SYSTEMS AND COMMUNICATION SYSTEMS AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED NOVEMBER 12, 2014 AS INSTRUMENT NO. 20141202217 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

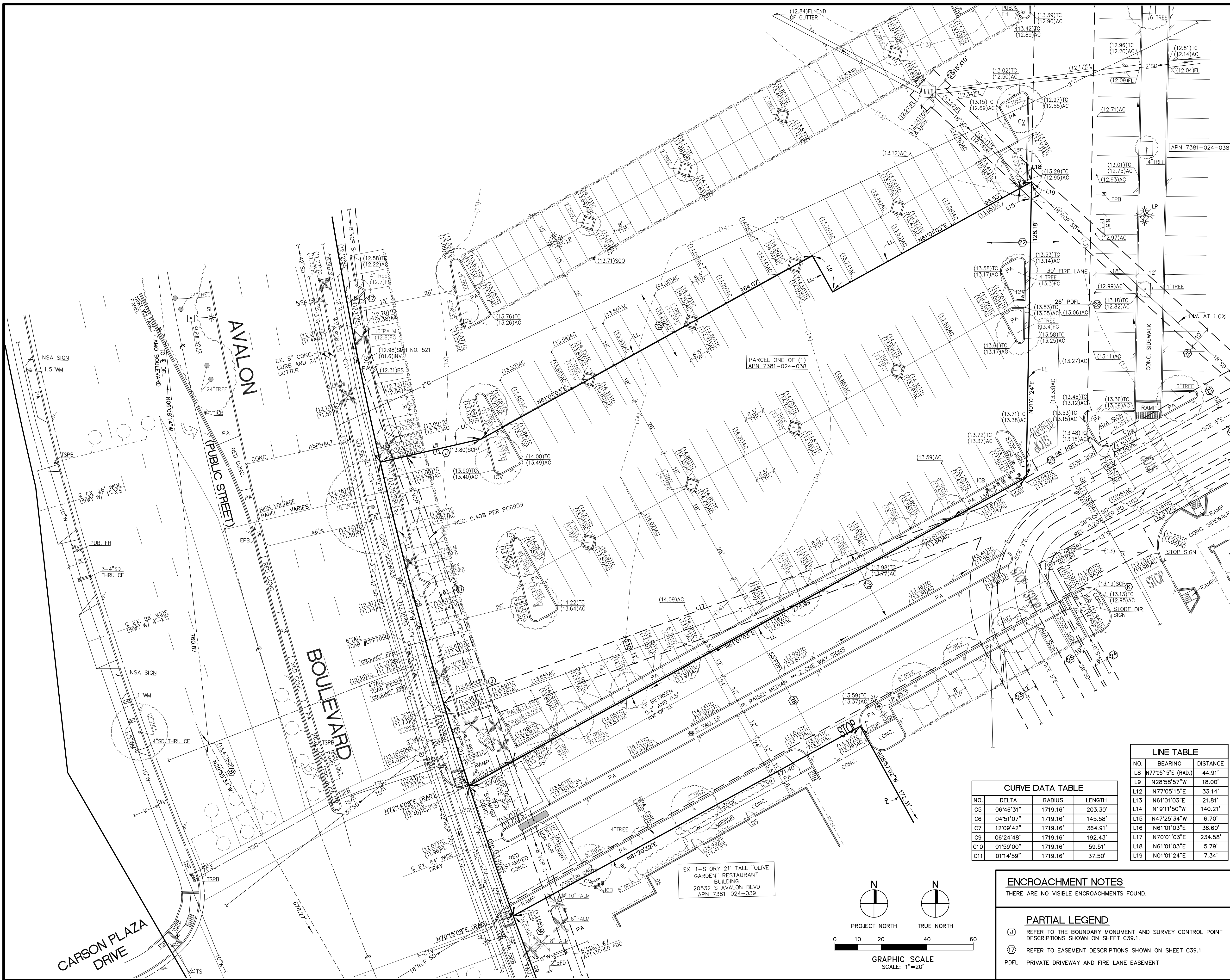
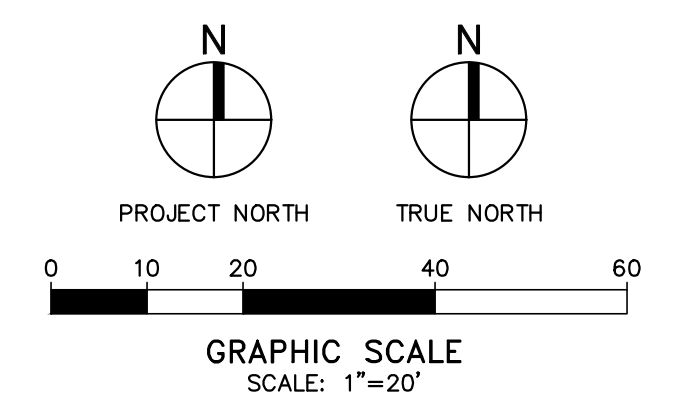
NO.	BEARING	DISTANCE
L8	N77°05'15"E (RAD.)	44.91'
L9	N28°58'57"W	18.00'
L12	N77°05'15"E	33.14'
L13	N61°01'03"E	21.81'
L14	N19°11'50"W	140.21'
L15	N47°25'34"W	6.70'
L16	N61°01'03"E	36.60'
L17	N70°01'03"E	234.58'
L18	N61°01'03"E	5.79'
L19	N01°01'24"E	7.34'

NO.	DELTA	RADIUS	LENGTH
C5	06°46'31"	1719.16'	203.30'
C6	04°51'07"	1719.16'	145.58'
C7	12°09'42"	1719.16'	364.91'
C9	06°24'48"	1719.16'	192.43'
C10	01°59'00"	1719.16'	59.51'
C11	01°14'59"	1719.16'	37.50'

**ENCROACHMENT NOTES**  
THERE ARE NO VISIBLE ENCROACHMENTS FOUND.

**PARTIAL LEGEND**  
 (J) REFER TO THE BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTIONS SHOWN ON SHEET C39.1.  
 (17) REFER TO EASEMENT DESCRIPTIONS SHOWN ON SHEET C39.1.  
 PDFL PRIVATE DRIVEWAY AND FIRE LANE EASEMENT



**IN-N-OUT BURGER**  
 DEVELOPER:  
 IN-N-OUT BURGER  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVUN  
 PHONE: 626 813-5378

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 Suite 300  
 Dallas Texas 75254  
 Ph: (972) 239-8884  
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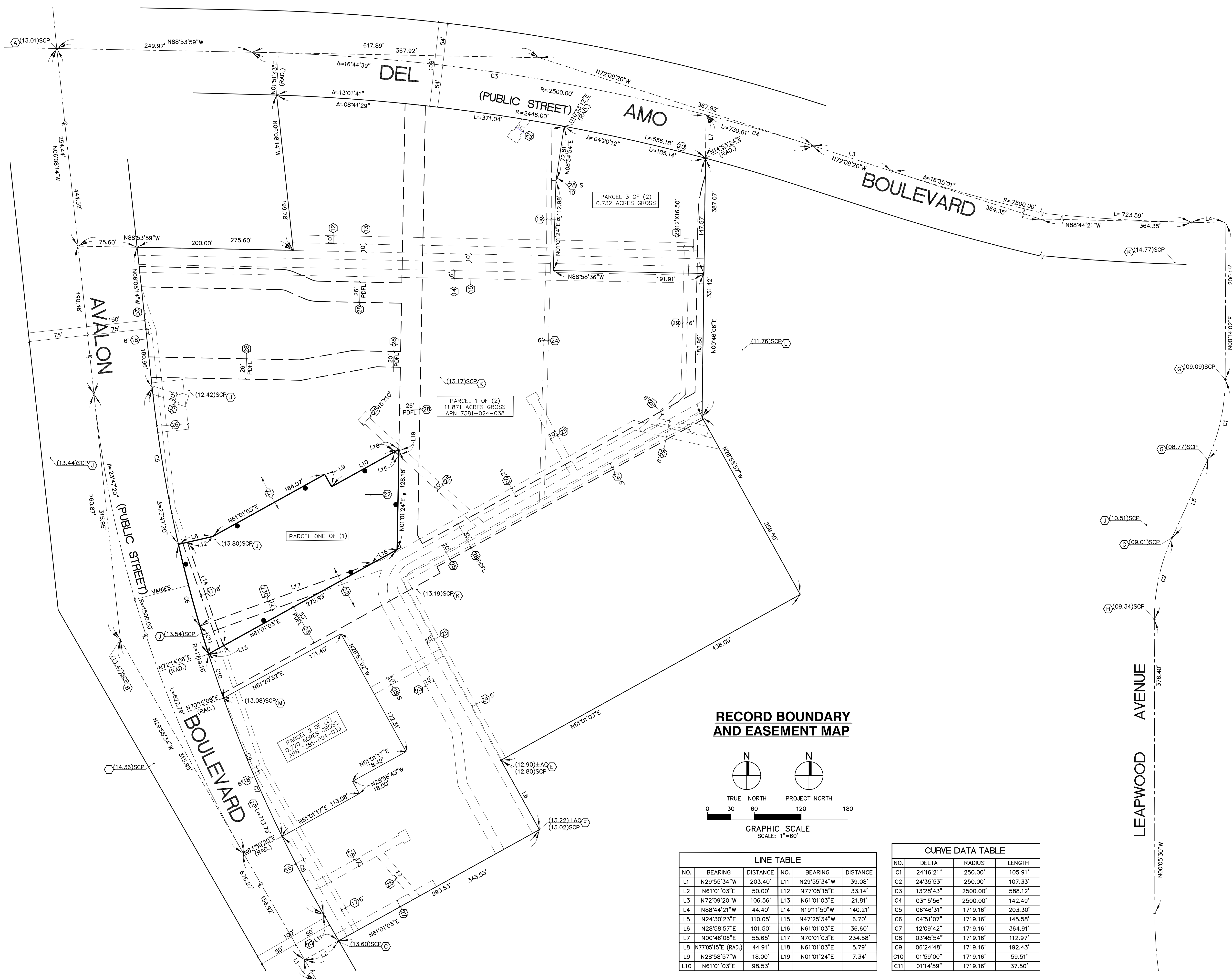
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 (909) 305-2395 FAX (909) 305-2397  
 Mark S. Lamoureux  
 MARK S. LAMOUREUX R.C.E. 38382 01-21-2022 DATE

REGISTERED PROFESSIONAL ENGINEER  
 MARK S. LAMOUREUX  
 No. 38382  
 CIVIL  
 STATE OF CALIFORNIA

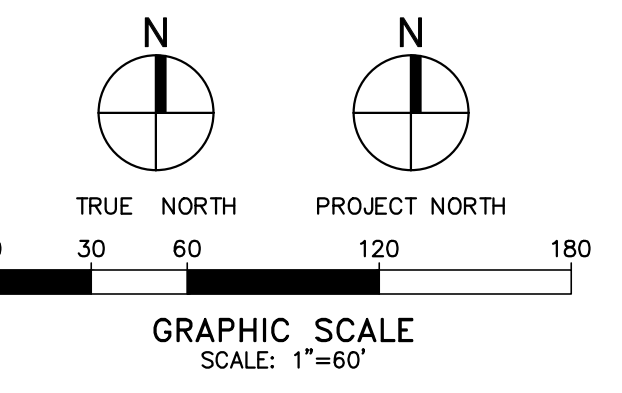
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 THE SHOPS AT  
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 20500±S. AVALON BOULEVARD  
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**CITY ENTITLEMENT TOPOGRAPHY SURVEY MAP**  
**C39**  
 JN 2008-2008 C39csm





**RECORD BOUNDARY AND EASEMENT MAP**



LINE TABLE					
NO.	BEARING	DISTANCE	NO.	BEARING	DISTANCE
L1	N29°55'34"W	203.40'	L11	N29°55'34"W	39.08'
L2	N61°01'03"E	50.00'	L12	N77°05'15"E	33.14'
L3	N72°09'20"W	106.56'	L13	N61°01'03"E	21.81'
L4	N88°44'21"W	44.40'	L14	N191°1'50"W	140.21'
L5	N24°30'23"E	110.05'	L15	N47°25'34"W	6.70'
L6	N28°58'57"E	101.50'	L16	N61°01'03"E	36.60'
L7	N00°46'06"E	55.65'	L17	N70°01'03"E	234.58'
L8	N77°05'15"E (RAD.)	44.91'	L18	N61°01'03"E	5.79'
L9	N28°58'57"E	18.00'	L19	N01°01'24"E	7.34'
L10	N61°01'03"E	98.53'			

CURVE DATA TABLE			
NO.	DELTA	RADIUS	LENGTH
C1	24°16'21"	250.00'	105.91'
C2	24°35'53"	250.00'	107.33'
C3	13°28'43"	2500.00'	588.12'
C4	03°15'56"	2500.00'	142.49'
C5	06°46'31"	1719.16'	203.30'
C6	04°51'07"	1719.16'	145.58'
C7	12°09'42"	1719.16'	364.91'
C8	03°45'54"	1719.16'	112.97'
C9	06°24'48"	1719.16'	192.43'
C10	01°59'00"	1719.16'	59.51'
C11	01°14'59"	1719.16'	37.50'

**BOUNDARY MONUMENTS AND SURVEY CONTROL POINTS**

- (A) FOUND GEAR SPIKE WITH WASHER STAMPED "LS 3983" PER CORNER RECORD PWF 0520/1924-1925 FILED SEPTEMBER 10, 2015, IN LIEU OF A S&W PER PARCEL MAP NO. 71684 FILED OCTOBER 02, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 THROUGH 88 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY, FLUSH IN ASPHALT PAVEMENT.
- (B) FOUND L,T&T, ILLEGIBLE, IN LIEU OF RD. DEPT. TAG PER PARCEL MAP 71684 FILED OCTOBER 02, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 THROUGH 88 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY, FLUSH IN CONCRETE PAVEMENT.
- (C) FOUND L,T&T STAMPED "LS 7185" IN SIDEWALK AT A 1.00' OFFSET FROM BOUNDARY LINE TOWARDS THE STREET CENTERLINE FROM THE PROPERTY LINE PER PARCEL MAP NO. 062572 FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, AS DOCUMENT NUMBER 20072306234, RECORDS OF LOS ANGELES COUNTY FLUSH IN CONCRETE 0.07' SOUTH AND 0.25' WEST.
- (E) FOUND SPIKE AND WASHER IN A.C. STAMPED "LS 7185" PER PARCEL MAP NO. 062572 FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, AS DOCUMENT NO. 20072306234, RECORDS OF LOS ANGELES COUNTY, DOWN 0.1' IN ASPHALT PAVEMENT, 0.17' WEST.
- (F) FOUND SPIKE AND WASHER IN A.C. STAMPED "LS 7185" PER PARCEL MAP NO. 062572 FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, AS DOCUMENT NO. 20072306234, RECORDS OF LOS ANGELES COUNTY, DOWN 0.2' IN ASPHALT PAVEMENT, 0.17' WEST.
- (G) FOUND PK NAIL AND WASHER STAMPED "LS 6970" PER PARCEL MAP NO. 062572 FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, AS DOCUMENT NO. 20072306234, RECORDS OF LOS ANGELES COUNTY, FLUSH IN ASPHALT PAVEMENT, 0.22' SOUTH AND 0.08' WEST.
- (H) FOUND GEAR SPIKE AND WASHER STAMPED "LS 6970" PER PARCEL MAP NO. 062572 FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, AS DOCUMENT NUMBER 20072306234, RECORDS OF LOS ANGELES COUNTY, FLUSH IN ASPHALT PAVEMENT, 0.22' SOUTH AND 0.14' WEST.
- (I) FOUND LEAD AND TACK ON TOP OF CONCRETE CURB, TAG MISSING; NO REFERENCE.
- (J) SET SCRIBED "+" ON TOP OF CONCRETE CURB.
- (K) SET SCRIBED "+" IN CONCRETE SIDEWALK.
- (L) SET MAG NAIL WITH FLAGGING IN ASPHALT PAVEMENT.
- (M) SET 2"x2" WOOD HUB AND NAIL IN SOIL, FLUSH.

**REFERENCE NOTES**

- (1) FIRST AMERICAN TITLE INSURANCE COMPANY NATIONAL COMMERCIAL SERVICES PRELIMINARY TITLE REPORT WITH A COMMITMENT NO. OF NCS-1058946-SAT DATED MARCH 16, 2021 REVISION NO. 01 OUT OF THEIR IRVINE, CA OFFICE.
- (2) PARCEL MAP NO. 71684 AS PER MAP FILED OCTOBER 02, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 THROUGH 88 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.
- (3) PARCEL MAP NO. 2328 AS PER MAP FILED MARCH 24, 1972 IN BOOK 37 OF PARCEL MAPS, PAGES 4 THROUGH 6 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.
- (4) PARCEL MAP NO. 062572 AS PER MAP FILED OCTOBER 09, 2007 IN BOOK 351 OF PARCEL MAPS, PAGES 94 THROUGH 100 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.

**RECORD DATA MAPS**

- ALL BEARINGS AND DISTANCES SHOWN HEREON, UNLESS OTHERWISE NOTED, ARE TAKEN OR CALCULATED FROM THE FOLLOWING MAPS:
- (1) PARCEL MAP NO. 71684 AS PER MAP FILED OCTOBER 02, 2014 IN BOOK 379 OF PARCEL MAPS, PAGES 83 THROUGH 88 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.
  - (2) PARCEL MAP NO. 2328 AS PER MAP FILED MARCH 24, 1972 IN BOOK 37 OF PARCEL MAPS, PAGES 4 THROUGH 6 INCLUSIVE, RECORDS OF LOS ANGELES COUNTY.

**PARTIAL LEGEND**

- INDICATES THE BOUNDARY OF THIS RECORD BOUNDARY AND EASEMENT MAP CONSISTING OF 36,958 SQUARE FEET OR 0.848 ACRES.
- (J) REFER TO THE BOUNDARY MONUMENT AND SURVEY CONTROL POINT DESCRIPTIONS SHOWN ON SHEET C39.1.
- (L) REFER TO EASEMENT DESCRIPTIONS SHOWN ON SHEET C39.
- PDFL PRIVATE DRIVEWAY AND FIRE LANE EASEMENT

**IN-N-OUT BURGER**

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IN-N-OUT BURGER  
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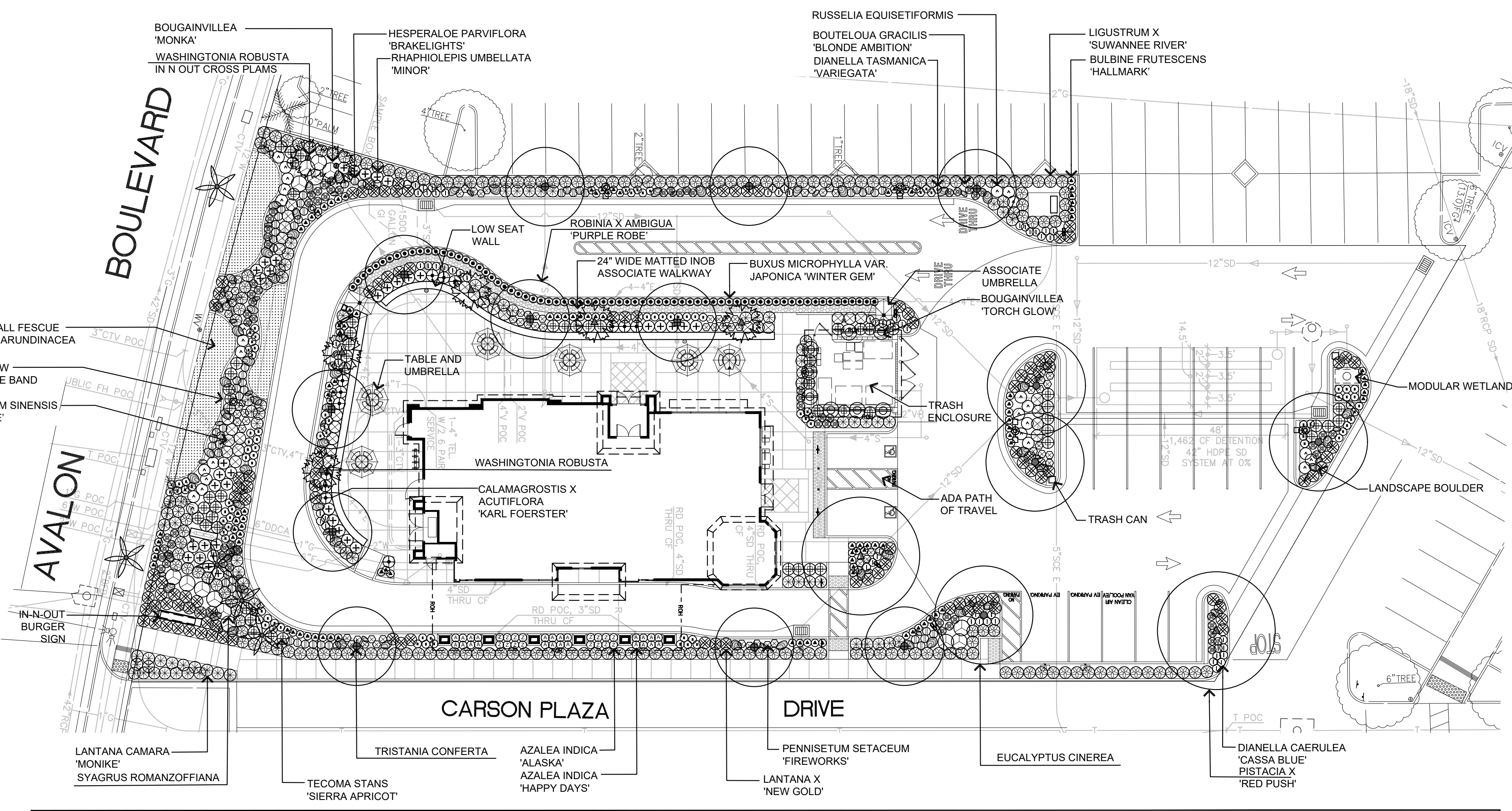
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**CITY ENTITLEMENT  
RECORD BOUNDARY  
AND EASEMENT MAP**

**C39.1**





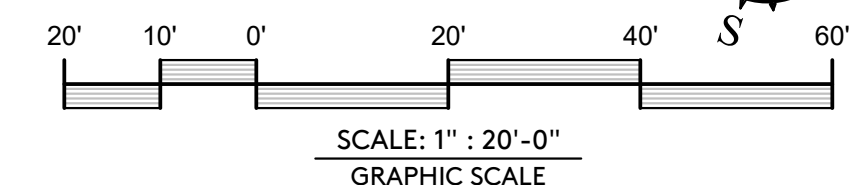
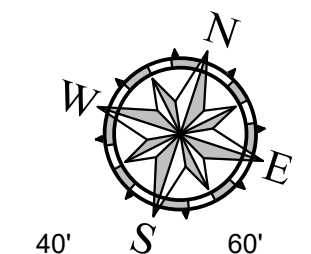
PLAN VIEW

SCALE: 1" = 20'-0"

PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITY	REMARKS	WUCOLS ZONE 3
<b>TREES</b>							
	EXISTING OFF SITE PALMS	TREE TO REMAIN				CONTRACTOR SHALL HIRE CERTIFIED ARBORIST TO SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	
	EUCALYPTUS CINEREA	SILVER DOLLAR TREE	24" BOX	PER PLAN	+/- 3	STANDARDS MATCHED	LOW
	ROBINIA X AMBIGUA 'PURPLE ROBE'	PURPLE ROBE LOCUST	24" BOX	PER PLAN	+/- 5	STANDARDS MATCHED	LOW
	PISTACIA X 'RED PUSH'	RED PUSH PISTACHE	24" BOX	PER PLAN	+/- 3	STANDARDS MATCHED	LOW
	TRISTANIA CONFERTA (LOPHOSTEMON)	BRISBANE BOX	24" BOX	PER PLAN	+/- 7	STANDARDS MATCHED	LOW
	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM	15' CBT	PER PLAN	+/- 5	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM	20' CBT	PER PLAN	+/- 2	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
	SYAGRUS ROMANZOFFIANA	QUEEN PALM	15' CBT	PER PLAN	+/- 5	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
<b>SHRUBS</b>							
	AZALEA INDICA 'ALASKA'	ALASKA AZALEA	5 GALLON	24" O.C.	+/- 16	TRIANGLE SPACING	MED
	AZALEA INDICA 'HAPPY DAYS'	HAPPY DAYS AZALEA	5 GALLON	24" O.C.	+/- 24	TRIANGLE SPACING	MED
	BUXUS MICROPHYLLA VAR. JAPONICA 'WINTER GEM'	WINTER GEM BOXWOOD	5 GALLON	24" O.C.	+/- 71	TRIANGLE SPACING	LOW
	BULBINE FRUTESCENS 'HALLMARK'	'HALLMARK' BULBINE	1 GALLON	24" O.C.	+/- 103	TRIANGLE SPACING	LOW
	BOUQUINVILLEA TORCH GLOW	TORCH GLOW BOUQUINVILLEA	5 GALLON	48" O.C.	+/- 9	TRIANGLE SPACING	LOW
	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	5 GALLON	36" O.C.	+/- 13	TRIANGLE SPACING	LOW
	DIANELLA TASMANICA 'VARIEGATA'	VARIEGATED FLAX LILY	5 GALLON	24" O.C.	+/- 93	TRIANGLE SPACING	LOW
	DIANELLA CAERULEA 'CASSA BLUE'	BLUE FLAX LILY	5 GALLON	24" O.C.	+/- 83	TRIANGLE SPACING	LOW
	HESPERALOE PARVIFLORA 'BRAKELIGHTS'	BRAKELIGHTS RED YUCCA	5 GALLON	24" O.C.	+/- 56	TRIANGLE SPACING	LOW
	LIGUSTRUM X 'SUWANNEE RIVER'	SUWANNEE RIVER PRIVET	5 GALLON	36" O.C.	+/- 183	TRIANGLE SPACING	LOW
	LIGUSTRUM SINENSIS 'SUNSHINE'	SUNSHINE LIGUSTRUM	5 GALLON	36" O.C.	+/- 33	TRIANGLE SPACING	LOW
	PENNISETUM SETACEUM 'FIREWORKS'	FIREWORKS FOUNTAIN GRASS	5 GALLON	24" O.C.	+/- 77	TRIANGLE SPACING	LOW
	RHAPHIOLEPIS UMBELLATA 'MINOR'	DWARF YEDDO RHAPHIOLEPIS	5 GALLON	36" O.C.	+/- 37	TRIANGLE SPACING	MED
	RUSSELLIA EQUISETIFORMIS	CORAL FOUNTAIN	5 GALLON	36" O.C.	+/- 26	TRIANGLE SPACING	MED
	TECOMA STANS 'SIERRA APRICOT'	SIERRA APRICOT ESPERANZA	5 GALLON	36" O.C.	+/- 57	TRIANGLE SPACING	LOW
<b>GROUND COVER</b>							
	BOUGAINVILLEA 'MONKA'	Oo-La-La Bougainvillea	5 GALLON	48" O.C.	+/- 14	TRIANGLE SPACING	LOW
	LANTANA X 'NEW GOLD'	NEW GOLD LANTANA	1 GALLON	36" O.C.	+/- 113	TRIANGLE SPACING	LOW
	LANTANA CAMARA 'MONIKE'	TEENIE GENIE	1 GALLON	36" O.C.	+/- 80	TRIANGLE SPACING	LOW
	DWARF TALL FESCUE FESTUCA ARUNDINACEA	WEST COASTER WEST COAST TURF	SOD	PER PLAN	+/- 710 SQ FT	TRIANGLE SPACING	MED

- NOTE:
- CONTRACTOR SHALL CONTACT IN-N-OUT PERSONNEL FOR FIELD LOCATION OF SAID BOULDERS. REFER TO BOULDER DETAIL.
  - QUANTITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY COUNT AND ADJUST BASED ON ACTUAL FIELD CONDITIONS AND SIZE OF PLANTERS.
  - ALL PLANT MATERIAL SHALL BE REVIEWED AND APPROVED BY IN-N-OUT REP. AND LANDSCAPE ARCHITECT.
  - STREET TREES AND OTHER TREES LOCATED WITHIN 10-FEET OF THE PUBLIC RIGHT-OF-WAY (WITH THE EXCEPTION OF PALM TREES) SHALL BE PROVIDED WITH A BIO BARRIER.
  - CONTRACTOR SHALL INSTALL 2 AERATION TUBES, 48" IN LENGTH FOR ALL TREES INCLUDING PALMS. INSTALL 4 DEVICES FOR EXISTING TREES GREATER THAN 6" TRUNK DIAMETER.



LANDSCAPE BOULDER LEGEND

BOULDER #	SIZE	TYPE/COLOR/MANUFACTURER
1	1' X 2' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/COLOR: AMBER CLOUD PH: 800-699-1878
2	2' X 4' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/COLOR: AMBER CLOUD PH: 800-699-1878
3	3' X 3' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/COLOR: AMBER CLOUD PH: 800-699-1878

BOULDER PLACEMENT (GROUPINGS) SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT PRIOR TO PLACEMENT.

LANDSCAPE CONSTRUCTION LEGEND

SYMBOL	MATERIAL	SQ. FT.
	3" THICK MULCH LAYER TO BE INSTALLED IN ALL PLANTERS WITHOUT DRY STREAM BED, GRAVEL, OR BIOSWALES.	+/- 6,920 S.F.
	6" X 6" MOW CONCRETE BAND TO SEPARATE ALL LAWN AREA FROM PLANTER AREAS	
	24" WIDE MATTED INOB ASSOCIATE WALKWAY	+/- 278 S.F.

LANDSCAPE AREA CALCULATION NOTE:

TOTAL INSTALLED TURF AREA: 710 S.F. (10%)  
 TOTAL INSTALLED PLANTING (SHRUB/GROUND COVER) AREA: 6,941 S.F. (90%)  
 TOTAL INSTALLED LANDSCAPE AREA: 7,651 S.F. (100%)

**TREE ROOT BARRIER - FIBERWEB BIO BARRIER:**

- CONTRACTOR SHALL INSTALL TREE ROOT BARRIERS FOR ALL TREES WITHIN 6' OF CONCRETE EDGE. INSTALL THE 24" VERSION AND SHALL BE CONTINUOUS FOR 10' ON EITHER SIDE OF TREE.
- STREET TREES AND OTHER TREES LOCATED WITHIN 10-FEET OF THE PUBLIC RIGHT-OF-WAY (WITH THE EXCEPTION OF PALM TREES) SHALL BE PROVIDED WITH A BIO BARRIER.

**AGRONOMIC SOILS REPORT REQUIREMENT**

AFTER MAJOR GRADING OPERATIONS ARE COMPLETED, CONTRACTOR SHALL OBTAIN SOIL SAMPLES FROM MIN 6" DEPTH AND SUBMIT TO AN APPROVED LABORATORY FOR ANALYSIS AND RECOMMENDATIONS. OBTAIN A MINIMUM OF 1 SAMPLE PER ACRE AND 1 SAMPLE AFTER IMPLEMENTATION OF FIRST REPORT FOR VERIFICATION SOIL MEETS SOILS LAB STANDARDS. REPORTS MUST BE SUBMITTED TO LANDSCAPE ARCHITECT, CITY AND OWNERS REP. FOR REVIEW AND APPROVAL.

TITLE 23 - WATER EFFICIENT LANDSCAPE COMPLIANCE NOTE

I HAVE COMPLIED WITH THE CRITERIA OF THE WATER EFFICIENT LANDSCAPE ORDINANCE (STATE OF CALIFORNIA TITLE 23, DIVISION 2, CHAPTER 2.7) AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF LANDSCAPE DESIGN PLAN.

BRANDON PETRUNIO, \_\_\_\_\_ DATE: JULY 09, 2021  
 RLA 5894.

LANDSCAPE IRRIGATION INTENT:

IT IS THE INTENT TO PROVIDE AN IRRIGATION DESIGN UTILIZING DRIP IRRIGATION SYSTEM FOR THE ENTIRE SITE BURIED A CONSTANT 4" BELOW FINISH GRADE AND STAPLED DOWN @ 5' INTERVALS FOR ADDED PROTECTION. THE IRRIGATION SYSTEM SHALL BE CONTROLLED BY A SMART CONTROLLER WITH ONSITE WEATHER SENSOR AND REMOTE OPERATION THROUGH THE INTERNET FROM CENTRAL LOCATION. CONTROLLER SHALL BE A TYPE WHICH AUTOMATICALLY ADJUSTS RUNTIMES AND FREQUENCIES BASED, NOT ONLY ON HISTORICAL ET, BUT ACTUAL ONSITE WEATHER CONDITIONS.

DEVELOPER:  
 IN-N-OUT BURGER  
 13502 HAMBURGER LANE  
 BALDWIN PARK, CA 91706  
 CONTACT: MARC LEVUN  
 PHONE: 626 813-5378

Underground Service Alert  
 Call: Toll Free  
**811**  
 TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

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GH A PROJECT NO. \_\_\_\_\_

Architecture/Development  
 14901 Quorum Drive  
 Suite 300  
 Dallas Texas 75254  
 Ph: (972) 239-8884  
 Fax: (972) 239-5054

CIVIL ENGINEER:  
 MSL ENGINEERING, INC.  
 CIVIL ENGINEERS AND LAND SURVEYORS SPECIALIZING IN SITE DEVELOPMENT  
 301 NORTH SAN DIMAS AVENUE, SAN DIMAS, CA. 91773  
 (909) 305-2395 FAX (909) 305-2397

MARK S. LAMOUREUX R.C.E. 38382 DATE: 01-21-2022

**IN-N-OUT BURGER**  
 THE SHOPS AT SOUTHBAY PAVILION  
 20500 ± S. AVALON BOULEVARD  
 CARSON, CA 90746

**CITY ENTITLEMENT LANDSCAPE PLANTING PLAN**

LANDSCAPE ARCHITECT:  
 BPA ARCHITECTS  
**BRANDON PETRUNIO & ASSOCIATES, INC.**  
 LANDSCAPE ARCHITECTS  
 Design Studio: 301 N. San Dimas Ave., San Dimas, CA. 91773  
 Corp Office: 15699 Cherry Leaf Lane, Fontana, CA. 92336  
 T: (424) 235-8940, M: (951) 312-9943, E: brandon@bpalas.com

**LPP.1**





**PLANTING LEGEND**

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITY	REMARKS	WUCOLS ZONE 3
<b>TREES</b>							
	EXISTING OFF SITE PALMS TREE TO REMAIN. CONTRACTOR SHALL HIRE CERTIFIED ARBORIST TO SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1						
	EUCALYPTUS CINEREA	SILVER DOLLAR TREE	24" BOX	PER PLAN	+/- 3	STANDARDS MATCHED	LOW
	ROBINIA X AMBIGUA 'PURPLE ROBE'	PURPLE ROBE LOCUST	24" BOX	PER PLAN	+/- 5	STANDARDS MATCHED	LOW
	PISTACIA X 'RED PUSH'	RED PUSH PISTACHE	24" BOX	PER PLAN	+/- 3	STANDARDS MATCHED	LOW
	TRISTANIA CONFERTA (LOPHOSTEMON)	BRISBANE BOX	24" BOX	PER PLAN	+/- 7	STANDARDS MATCHED	LOW
	WASHINGTONIA ROBUSTA	MEXICAN FAN PALM	15' CBT	PER PLAN	+/- 5	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
	WASHINGTONIA ROBUSTA IN N OUT CROSS PLAMS	MEXICAN FAN PALM	20' CBT	PER PLAN	+/- 2	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
	SYAGRUS ROMANZOFFIANA	QUEEN PALM	15' CBT	PER PLAN	+/- 5	SKIN TRUNKS TO INDUSTRY STANDARD DOCUMENT ANSI Z60.1	LOW
<b>SHRUBS</b>							
	AZALEA INDICA 'ALASKA'	ALASKA AZALEA	5 GALLON	24" O.C.	+/- 16	TRIANGLE SPACING	MED
	AZALEA INDICA 'HAPPY DAYS'	HAPPY DAYS AZALEA	5 GALLON	24" O.C.	+/- 24	TRIANGLE SPACING	MED
	BUXUS MICROPHYLLA VAR. JAPONICA 'WINTER GEM'	WINTER GEM BOXWOOD	5 GALLON	24" O.C.	+/- 71	TRIANGLE SPACING	LOW
	BULBINE FRUTESCENS 'HALLMARK'	'HALLMARK' BULBINE	1 GALLON	24" O.C.	+/- 103	TRIANGLE SPACING	LOW
	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA GRASS	5 GALLON	24" O.C.	+/- 68	TRIANGLE SPACING	LOW
	BOUGAINVILLEA 'TORCH GLOW'	TORCH GLOW BOUGAINVILLEA	5 GALLON	48" O.C.	+/- 9	TRIANGLE SPACING	LOW
	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	5 GALLON	36" O.C.	+/- 13	TRIANGLE SPACING	LOW
	DIANELLA TASMANICA 'VARIEGATA'	VARIEGATED FLAX LILY	5 GALLON	24" O.C.	+/- 93	TRIANGLE SPACING	LOW
	DIANELLA CAERULEA 'CASSA BLUE'	BLUE FLAX LILY	5 GALLON	24" O.C.	+/- 58	TRIANGLE SPACING	LOW
	HESPERALOE PARVIFLORA 'BRAKELIGHTS'	BRAKELIGHTS RED YUCCA	5 GALLON	24" O.C.	+/- 56	TRIANGLE SPACING	LOW
	LIGUSTRUM X 'SUWANNEE RIVER'	SUWANNEE RIVER PRIVET	5 GALLON	36" O.C.	+/- 183	TRIANGLE SPACING	LOW
	LIGUSTRUM SINENSIS 'SUNSHINE'	SUNSHINE LIGUSTRUM	5 GALLON	36" O.C.	+/- 33	TRIANGLE SPACING	LOW
	PENNISETUM SETACEUM 'FIREWORKS'	FIREWORKS FOUNTAIN GRASS	5 GALLON	24" O.C.	+/- 77	TRIANGLE SPACING	LOW
	RHAPHIOLEPIS UMBELLATA 'MINOR'	DWARF YEDDO RHAPHIOLEPIS	5 GALLON	36" O.C.	+/- 37	TRIANGLE SPACING	MED
	RUSSELLIA Equisetiformis	CORAL FOUNTAIN	5 GALLON	36" O.C.	+/- 26	TRIANGLE SPACING	MED
	TECOMA STANS 'SIERRA APRICOT'	SIERRA APRICOT ESPERANZA	5 GALLON	36" O.C.	+/- 57	TRIANGLE SPACING	LOW
<b>GROUND COVER</b>							
	BOUGAINVILLEA 'MONIKA'	Oo-La-La Bougainvillea	5 GALLON	48" O.C.	+/- 14	TRIANGLE SPACING	LOW
	LANTANA X 'NEW GOLD'	NEW GOLD LANTANA	1 GALLON	36" O.C.	+/- 113	TRIANGLE SPACING	LOW
	LANTANA CAMARA 'MONIKE'	TEENIE GENIE	1 GALLON	36" O.C.	+/- 80	TRIANGLE SPACING	LOW
	DWARF TALL FESCUE FESTUCA ARUNDINACEA	WEST COASTER WEST COAST TURF	SOD	PER PLAN	+/- 710 SQ FT	TRIANGLE SPACING	MED

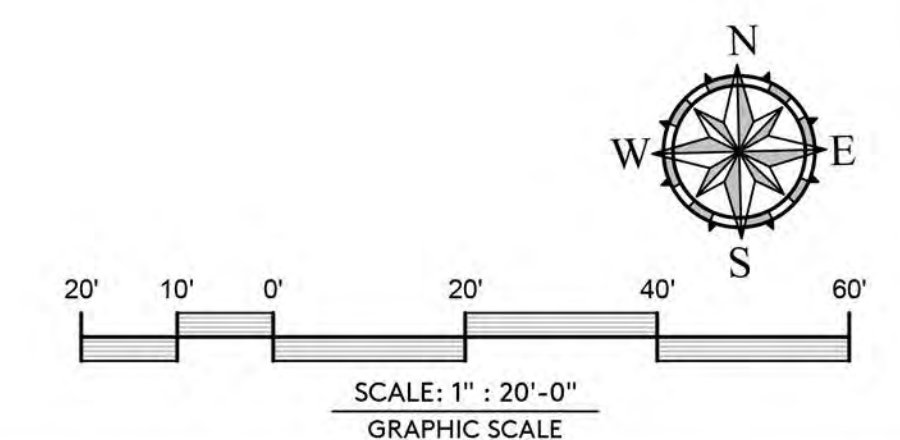
**PLAN VIEW**

SCALE: 1" = 20'-0"

**LANDSCAPE BOULDER LEGEND**

BOULDER #	SIZE	TYPE/ COLOR/ MANUFACTURER
1	1' X 2' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/ COLOR: AMBER CLOUD PH: 800-699-1878
2	2' X 4' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/ COLOR: AMBER CLOUD PH: 800-699-1878
3	3' X 3' X 3'	DECORATIVE STONE SOLUTIONS BOULDER/ COLOR: AMBER CLOUD PH: 800-699-1878

BOULDER PLACEMENT (GROUPINGS) SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT PRIOR TO PLACEMENT.



LANDSCAPE ARCHITECT:

**BPA**  
LANDSCAPE ARCHITECTS



**BRANDON PETRUNIO & ASSOCIATES, INC.**  
LANDSCAPE ARCHITECTS

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DEVELOPER:  
IN-N-OUT BURGER  
13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706  
CONTACT: JIM LOCKINGTON  
PHONE: 626 813-8289

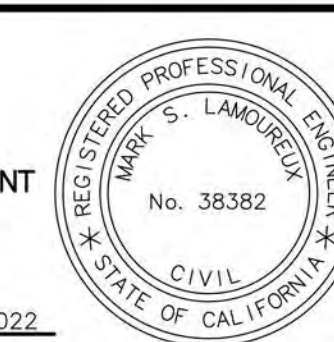


**REVISIONS**

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△	
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GHA PROJECT NO. -----  
**GHA**  
Architecture/Development  
14901 Quorum Drive  
Suite 300  
Dallas Texas 75254  
Ph: (972) 239-8884  
Fax: (972) 239-5054

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CIVIL ENGINEERS AND LAND SURVEYORS SPECIALIZING IN SITE DEVELOPMENT  
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(909) 305-2395 FAX (909) 305-2397  
*Mark S. Lamoureux*  
MARK S. LAMOUREUX R.C.E. 38382 DATE 01-21-2022



**IN-N-OUT BURGER**  
THE SHOPS AT  
SOUTHBAY PAVILION  
20500±S. AVALON BOULEVARD  
CARSON, CA 90746

**CITY ENTITLEMENT  
LANDSCAPE COLORED  
RENDERING PLAN**

**LPP.2**





NORTHEAST ELEVATION



NORTHWEST ELEVATION

**CARSON, CA**

20700 S. AVALON BLVD.



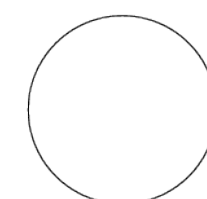
GOD BLESS AMERICA  
13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706

**ELEVATIONS 1**

SHEET OF 1

THE INFORMATION, DRAWINGS AND SPECIFICATIONS SHOWN ARE AND SHALL REMAIN THE PROPERTY OF IN-N-OUT.  
THESE DOCUMENTS MAY NOT BE USED WITHOUT THE EXPRESSED WRITTEN CONSENT OF IN-N-OUT.

SCALE: 1/4" = 1'-0"







SOUTHWEST ELEVATION

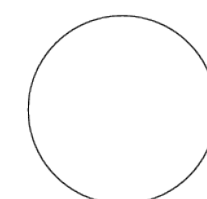


SOUTHEAST ELEVATION

**CARSON, CA**

20700 S. AVALON BLVD.

SCALE: 1/4" = 1'-0"



GOD BLESS AMERICA  
13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706

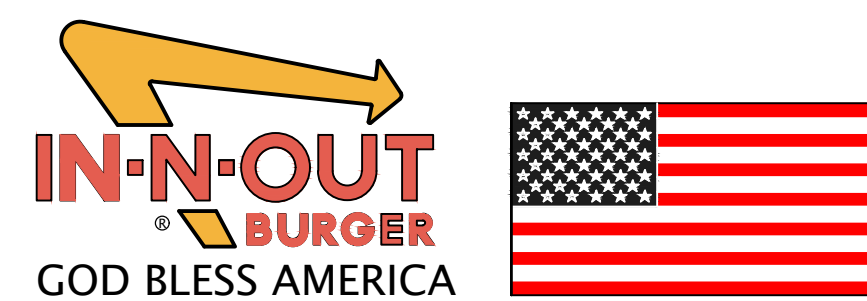
**ELEVATIONS 2**

SHEET OF 1

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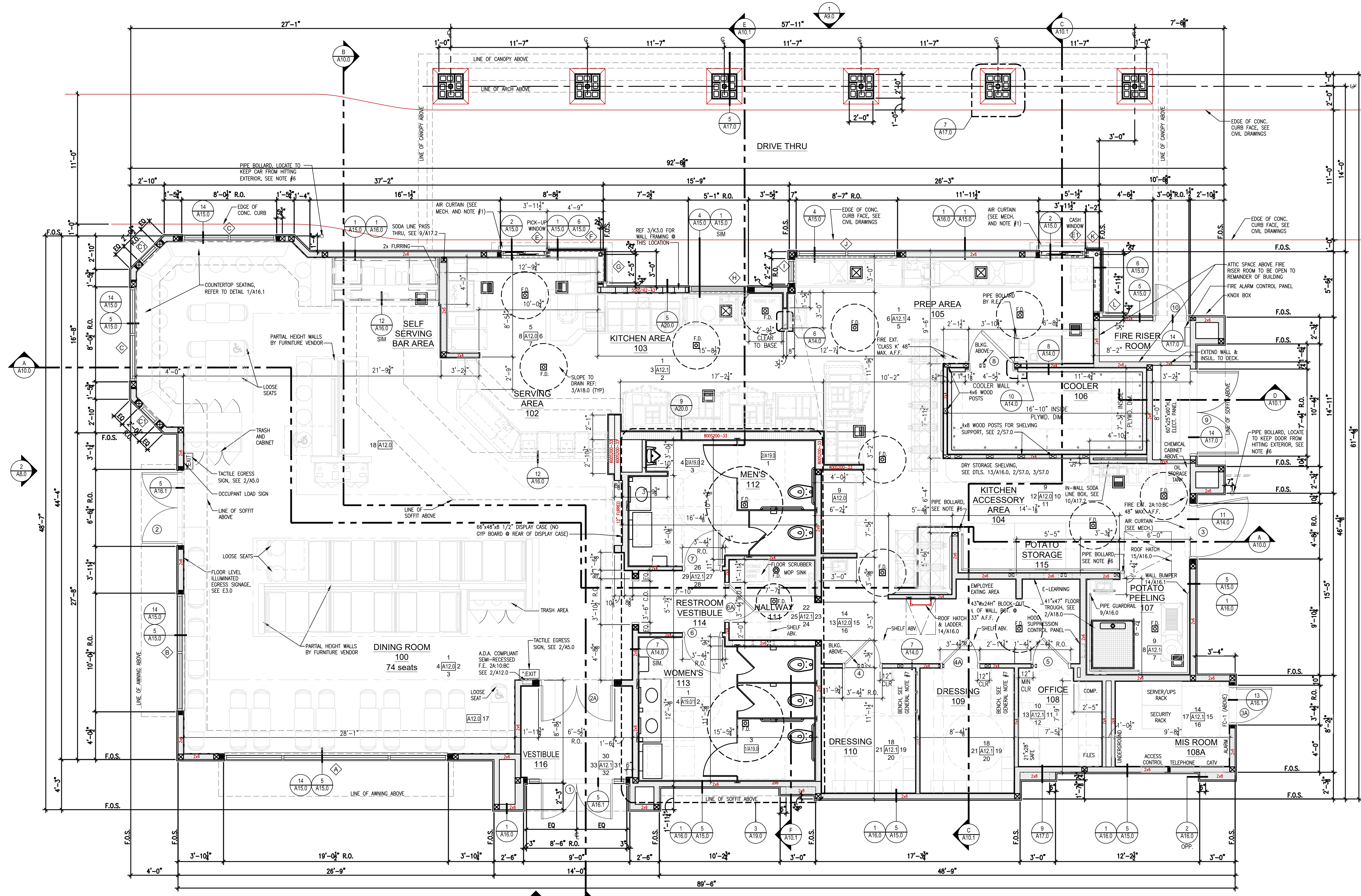






13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706

SHEET OF 1  
THE INFORMATION, DRAWINGS AND SPECIFICATIONS SHOWN ARE AND SHALL REMAIN THE PROPERTY OF IN-N-OUT BURGER.  
THESE DOCUMENTS MAY NOT BE USED WITHOUT THE EXPRESSED WRITTEN CONSENT OF IN-N-OUT BURGER.



**1 FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

**WALL LEGEND:**  
PROVIDE METAL STUDS PER STRUCTURAL DRAWINGS WITH 5/8" TYPE "X" GYPSUM BOARD

**GENERAL NOTES**

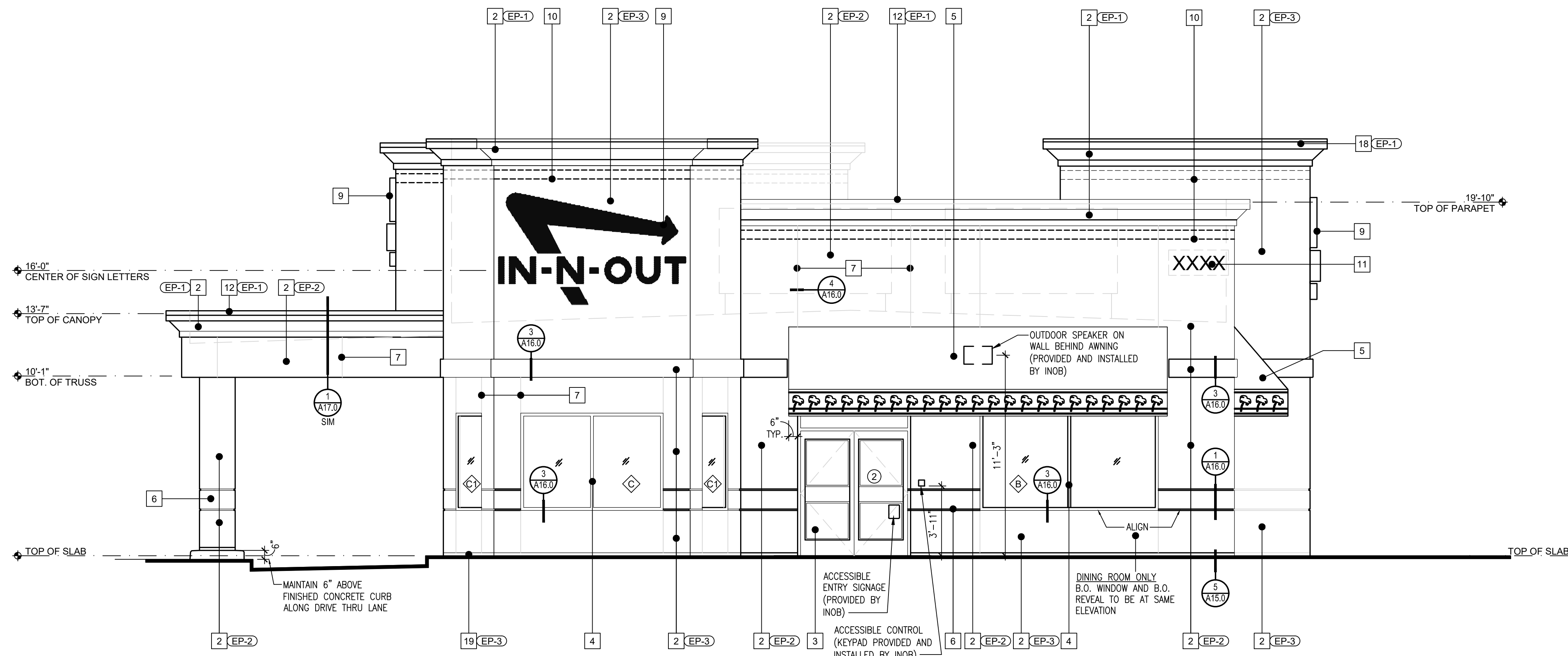
1. PROVIDE AIR SCREEN WITH 600fpm MIN. VELOCITY FOR SERVICE WINDOWS WITH 432 SQ.IN. MAX. OPENING. (SEE K1.0 FOR ADDITIONAL INFORMATION)
2. SEE DETAILS 5/A14.0, AND #6, #7, AND #10, ON SHEET A15.0 FOR INFORMATION ON SLOPED WINDOWS
3. SEE SHEET A19.0 FOR INTERIOR RESTROOM PLAN, ELEVATIONS, AND NOTES.
4. POTATO STORAGE FLOOR AREA MUST BE FLAT FOR EASY POTATO PALLET STORAGE.
5. SUBTERRANEAN TREATMENT FOR TERMITES IS REQUIRED (SEE SPECIFICATIONS).
6. 4" DIA x 1/4" THICK GALVANIZED STEEL PIPE BOLLARD. REFER TO DETAIL A16.0/10.
7. 24" x 48" x 18" FOLD UP BENCH WITH STAINLESS STEEL FRAME AND WHITE PHENOLIC TOP. SUPPORT 250 LBS OR GREATER. SUPPLIER: ACCESS-ABLE DESIGNS, INC. MODEL: D-101-42. CONTACT: (877) 853-7816. FIVE YEAR WARRANTY.
8. ALL LAG BOLTS AND ACCESSORY SCREWS TO BE STAINLESS STEEL.
9. TAPE, BED AND PAINT WALLS AND CEILING IN ELECTRICAL ROOM AND FIRE RISE ROOM.

**CARSON, CA**  
THE SHOPS AT SOUTHBAY PAVILION

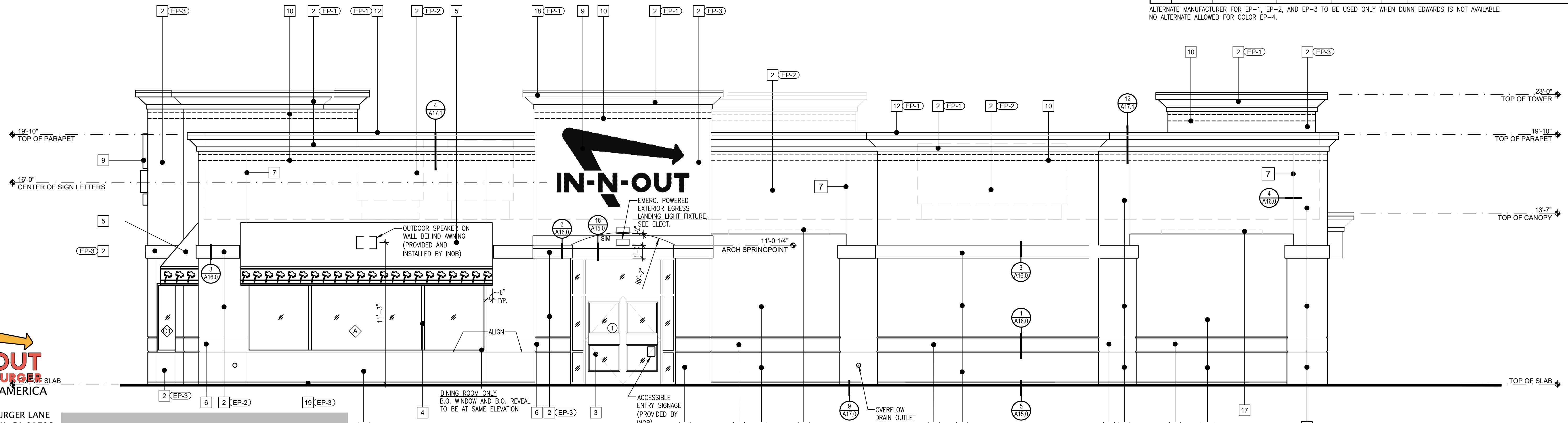
**PRELIMINARY FLOOR PLAN**  
**(20700 S. AVALON BLVD.) CARSON, CA**

(20700 S AVALON BLVD.)





**2** NORTHEAST ELEVATION  
A8.0 SCALE: 1/4" = 1'-0"



**1** NORTHWEST ELEVATION  
A8.0 SCALE: 1/4" = 1'-0"

**KEY NOTES**

- 1 TILE ROOF: EAGLE ROOFING PRODUCTS, CAPISTRANO STYLE 3125 TERRACOTTA. PROVIDE BIRD STOP AND PAINT TO MATCH TILE. MUD TO BE TINTED TO MATCH ROOF TILE COLOR.
- 2 STUCCO: 20/30 FINE SAND FLOAT FINISH
- 3 ALUMINUM STOREFRONT DOORS: CLEAR ANODIZED ALUMINUM.
- 4 ALUMINUM WINDOWS: CLEAR ANODIZED ALUMINUM.
- 5 AWNINGS: PVC COATED WICK-RESISTANT ERADICABLE POLYESTER AWNINGS WITH CUSTOM PALM TREE ERADICATED TO WHITE COLOR BY COOLEY BRITE CUSTOM RED 79-L1124A, FLAME RETARDANT PER UL-48, UL-94, NFPA 701. PROVIDE LED BACKLIGHTING. SEE: 5/A16.0 & 6/A16.0.
- 6 STUCCO BAND: PAINT (EP-4). INTEGRAL COLOR ACRYLIC PLASTER TO MATCH PAINT (EP-4). 1" ALUMINUM REVEAL TOP AND BOTTOM (DO NOT PAINT REVEALS). SEE DETAILS 1/A16.0 & 13/A17.0
- 7 1/4" WIDE METAL PENN SCREED: SEE DETAIL 4/A16.0. ALIGN CONTROL JOINTS ON DRIVE-THRU CANOPY FASCIA WITH CONTROL JOINTS ON BOTTOM OF SOFFIT.
- 8 SLOPED ALUMINUM WINDOWS: U.S. ALUMINUM S-010. GLASS JOINTS TO HAVE POLISHED EDGES WITH SILICONE JOINTS. REDWOOD FRAMES TO BE PRIMED WITH AXALTA IMRON IND 9P01 - PRIMER CAN BE TINTED GRAY. FINISH COAT TO BE AXALTA IMRON IND 9T01 TINTED CUSTOM COLOR EP-4.
- 9 IN-N-OUT BURGER ILLUMINATED LOGO SIGN: UNDER SEPARATE PERMIT.
- 10 L.E.D. DOUBLE BAND LIGHTING: UNDER SEPARATE PERMIT.
- 11 BUILDING ADDRESS NUMBERS TO BE 12" HIGH, 4" MIN. W/ MIN. STROKE WIDTH OF 0.5 INCH PER FIRE DEPARTMENT AND CITY JURISDICTION ADDRESS DISPLAY REQUIREMENTS:  
1. ADDRESS SHALL BE DISPLAYED & VISIBLE FROM BOTH STREET DIRECTIONS OF APPROACHING VEHICLES.  
2. PERMANENT NUMBERS AND LETTERS SHALL BE MADE OF DURABLE AND CLEARLY VISIBLE MATERIAL SUCH AS WOOD, METAL, CERAMIC, PLASTIC AND VINYL. (PAINTED OR GLOUED ON NUMBERS ARE NOT ACCEPTABLE MATERIALS).  
3. NUMBERS SHALL BE OF COLORS CONTRASTING WITH BACKGROUND TO WHICH THEY ARE ATTACHED.  
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- 12 HOLLOW METAL DOOR: SEE SHEET A11.0, HM DOORS AND JAMBS SHALL HAVE POWDER COAT FINISH AS FOLLOWS:  
INTERIOR DOORS: TIGER DRYLAC - SMOOTH, HIGH GLOSS FINISH, "BENGAL WHITE". EXTERIOR DOORS: CARDINAL - GLOSS, SMOOTH FINISH, "BONE CHINA" OR TO MATCH EXTERIOR STUCCO PAINT COLOR - (VERIFY ELEVATIONS- EP-1), WHERE FIELD PAINTING DOORS AND JAMBS IS NECESSARY- NOT RECOMMENDED, THE ALTERNATE WOULD BE TO USE AXALTA IMRON IND 9P01 WHITE PRIMER. FINISH COAT TO BE AXALTA IMRON IND 9T01 GLOSS WHITE. EXTERIOR HM DOORS & JAMBS- USE SAME PRODUCT TINTED TO MATCH EXTERIOR BUILDING PAINT COLOR EP-1. NOTE- TRASH ENCLOSURE METAL DOORS AND POSTS TO BE FIELD PAINTED USING AXALTA IMRON AS DESCRIBED ABOVE.
- 13 5'-0" HIGH STUB OUT FOR C02 LINE
- 14 4" MIN. HIGH WHITE LETTERING "RISER ROOM" ON RED BACKGROUND SIGN. MOUNT ON RISER ROOM DOOR
- 15 RECESSED KNOX BOX AT 5'-0" HIGH TO THE RIGHT OF FIRE RISER ROOM. SEE DETAIL 10/A17.0
- 16 RECESSED 8" LED LIGHT FIXTURE IN SOFFIT. SEE DETAIL 9/A17.1
- 17 GUTTER AND DOWNSPOUT. REFER TO DETAIL 8/A17.2
- 18 TEXTURE EXPOSED FOUNDATION WALL BELOW STUCCO WEEP SCREED AND PAINT TO MATCH WALL.

**EXTERIOR PAINT SCHEDULE**

NO.	MFR.	MODEL	COLOR #	COLOR NAME	FINISH	REMARKS
EP-1	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	B66W00611	IN-N-OUT BONE CHINA	HIGH GLOSS	STUCCO: PRIME W/ LONON CONCRETE & EXT LATEX PRIMER WHITE - A24W08300. GALV METAL: PRIME W/ GALVITE HS ACRYLIC COATING - B50WZ0030, OFF WHITE
EP-2	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	AB4W01151	IN-N-OUT BONE CHINA	HIGH GLOSS	SEE REMARKS FOR EP-1 ALT. MFR.
EP-3	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	AB4W01151	IN-N-OUT BONE CHINA	HIGH GLOSS	SEE REMARKS FOR EP-1 ALT. MFR.
EP-4	AXALTA	IMRON	SEE REMARKS FOR COLOR FORMULA	INO RED	HIGH GLOSS	PRIMER: AXALTA IMRON IND 9P01. PRIMER CAN BE TINTED GRAY. FINISH COAT: AXALTA IMRON IND 9T01 GLOSS POLYURETHANE. COLOR FORMULA: NON-CUM GUIDE 2/20/20. MIX SIZE: 102.4OZ (GALLON). 9T04 VIOLET 321.2. 9T10 RED-ORANGE 349.3. 9T13 ORANGE 2577.6

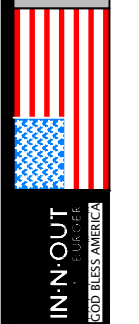
ALTERNATE MANUFACTURER FOR EP-1, EP-2, AND EP-3 TO BE USED ONLY WHEN DUNN EDWARDS IS NOT AVAILABLE. NO ALTERNATE ALLOWED FOR COLOR EP-4.



13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706

(20700 S AVALON BLVD.)

PRELIMINARY ELEVATIONS 1  
(20700 S. AVALON BLVD.) CARSON, CA





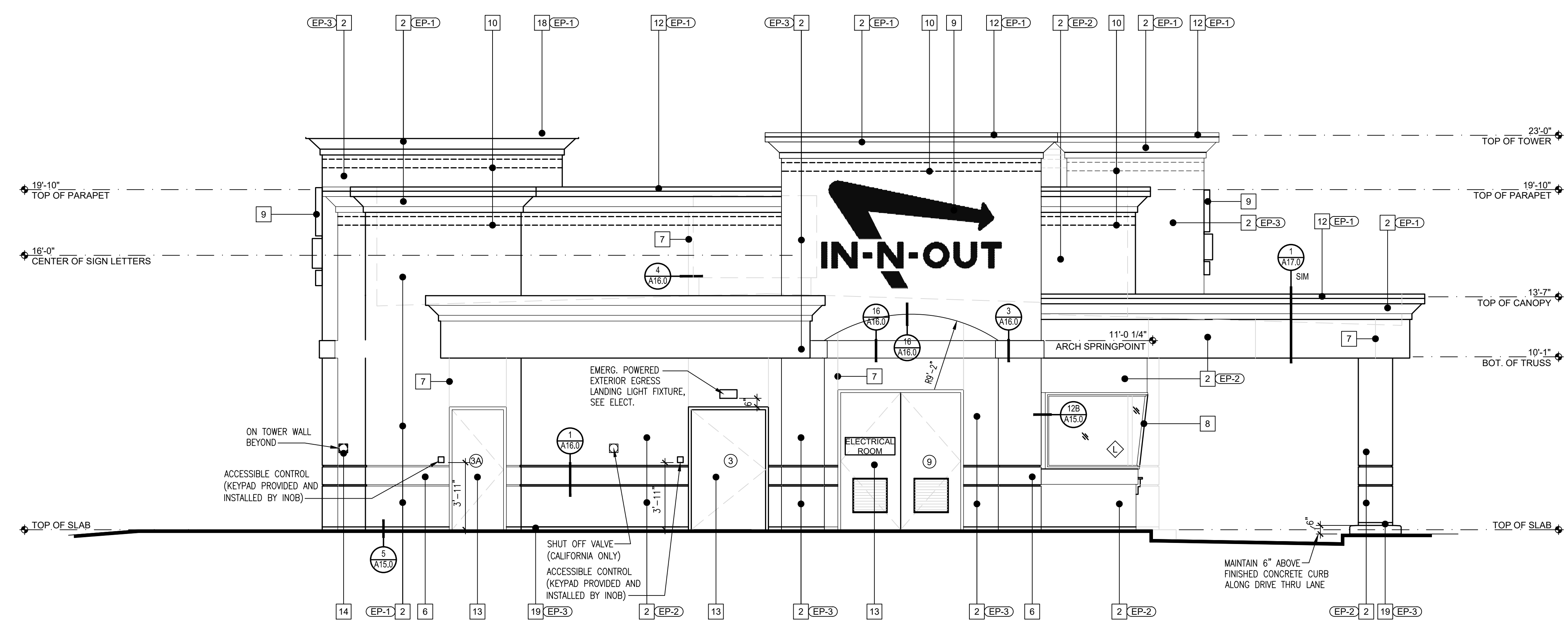
**KEY NOTES**

- 1 TILE ROOF: EAGLE ROOFING PRODUCTS, CAPISTRANO STYLE 3125 TERRACOTTA. PROVIDE BIRD STOP AND PAINT TO MATCH TILE. MUD TO BE TINTED TO MATCH ROOF TILE COLOR.
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- 7 1/4" WIDE METAL PENN SCREED: SEE DETAIL 4/A16.0. ALIGN CONTROL JOINTS ON DRIVE-THRU CANOPY FASCIA WITH CONTROL JOINTS ON BOTTOM OF SOFFIT.
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- 11 BUILDING ADDRESS NUMBERS TO BE 12" HIGH, 4" MIN. W/ MIN. STROKE WIDTH OF 0.5 INCH PER FIRE DEPARTMENT AND CITY JURISDICTION ADDRESS DISPLAY REQUIREMENTS:  
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EP-1	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	B66W00611	IN-N-OUT BONE CHINA	HIGH GLOSS	STUCCO: PRIME W/ LONOX CONCRETE & EXT LATEX PRIMER WHITE - A24W08300. GALV METAL: PRIME W/ GALVITE HS ACRYLIC COATING - B50WZ0030, OFF WHITE
EP-2	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	AB4W01151	IN-N-OUT BONE CHINA	HIGH GLOSS	SEE REMARKS FOR EP-1 ALT. MFR.
EP-3	DUNN EDWARDS	ARISTOSHIELD 70	DEW 339	BONE CHINA	HIGH GLOSS	PRIME W/ D.E. ULTRA-GRIP PREMIUM PRIMER
ALT. MFR.	SHERWIN WILLIAMS	SUPER PAINT LATEX	AB4W01151	IN-N-OUT BONE CHINA	HIGH GLOSS	SEE REMARKS FOR EP-1 ALT. MFR.
EP-4	AXALTA	IMRON	SEE REMARKS FOR COLOR FORMULA	INO RED	HIGH GLOSS	PRIMER: AXALTA IMRON IND 9P01. PRIMER CAN BE TINTED GRAY. FINISH COAT: AXALTA IMRON IND 9T01 GLOSS POLYURETHANE COLOR FORMULA: NON-CUM GUIDE 2/20/20 MIX SIZE: 102.4OZ (GALLON) 9T04 VIOLET 321.2 9T10 RED-ORANGE 349.3 9T13 ORANGE 2577.6

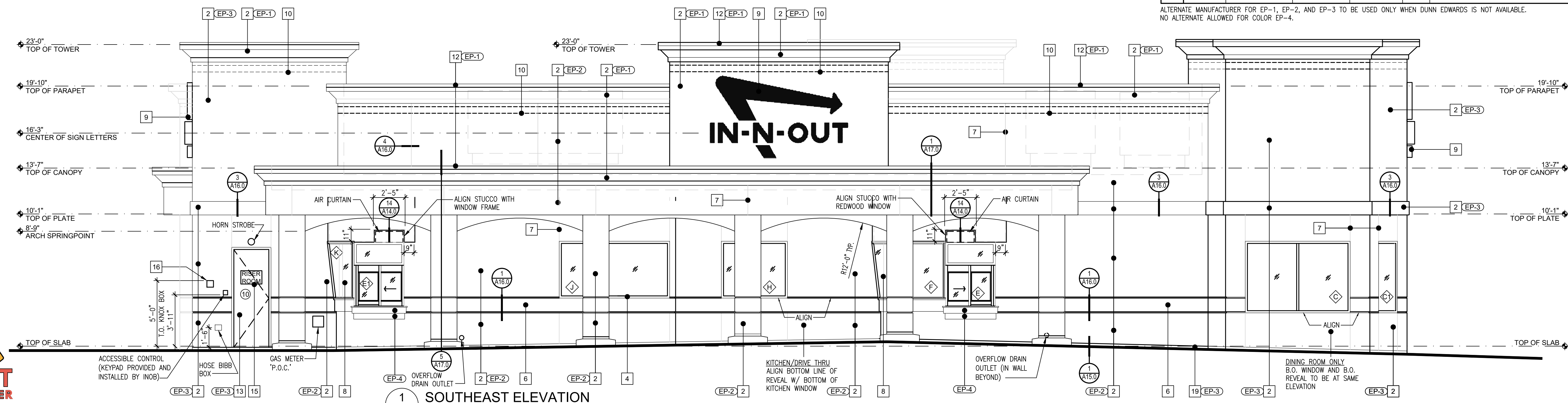
ALTERNATE MANUFACTURER FOR EP-1, EP-2, AND EP-3 TO BE USED ONLY WHEN DUNN EDWARDS IS NOT AVAILABLE. NO ALTERNATE ALLOWED FOR COLOR EP-4.



**2** SOUTHWEST ELEVATION  
A9.0 SCALE: 1/4" = 1'-0"

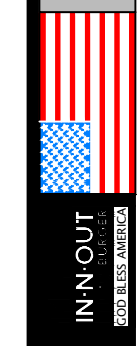


13502 HAMBURGER LANE  
BALDWIN PARK, CA 91706



**1** SOUTHEAST ELEVATION  
A9.0 SCALE: 1/4" = 1'-0"

(20700 S AVALON BLVD.)





**REVISIONS**  
 R1: Change B1 thru B3 to INO-WS-53x89 - 03/22/21 TT  
 R2: Added sign to East elevation; Chg all wall signs to 18 inch - 03/26/21 TT  
 R3: Revised elevations and yellow faces as requested - 07/15/21 TT  
 R4: Revised site plan; Added directional signs - 07/20/21 TT

**20700 S. Avalon Blvd. Carson, CA 90746**

IN-N-OUT APPROVAL			
SIGNATURE	NAME	DATE	REVISION
SIGNATURE	NAME	DATE	REVISION
SIGNATURE	NAME	DATE	REVISION
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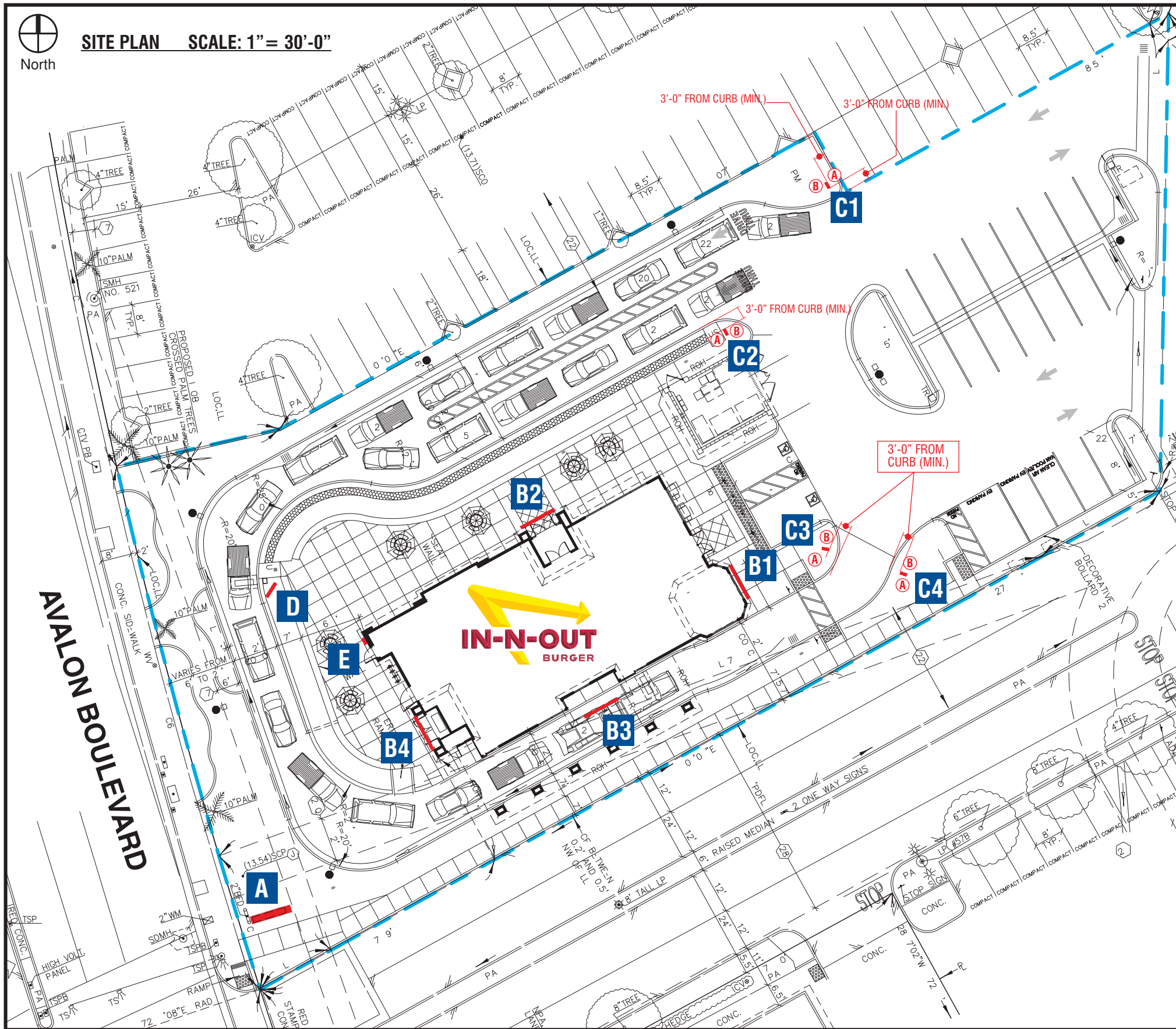
**In-N-Out**  
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**Coordinator:** Garry Wilcox  
**Design:** Thomsen  
**Engineering:**

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**drawing:** 21-00414 **rev:** 4-07.20.21  
**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1





## SIGN LEGEND

SIGN #	DESCRIPTION	SIGN TYPE	SF	QTY
A	MONUMENT SIGN	INO-MON-28X81X81	48.3	1
B1	WALL SIGN	INO-WS-75X126	65.8	1
B2	WALL SIGN	INO-WS-75X126	65.8	1
B3	WALL SIGN	INO-WS-75X126	65.8	1
B4	WALL SIGN	INO-WS-75X126	65.8	1
C1	DIRECTIONAL SIGN (DT)*	INO-DIR-18x24x36	N/A	1
C2	DIRECTIONAL SIGN (DT)*	INO-DIR-18x24x36	N/A	1
C3	DIRECTIONAL SIGN (TY/DNE)*	INO-DIR-18x24x36	N/A	1
C4	DIRECTIONAL SIGN (TY/DNE)*	INO-DIR-18x24x36	N/A	1
D	MENU BOARD	IN-MB-54x51x79	N/A	1
E	ADDRESS NUMERALS	INO-CL-PL-12-ADDRESS-20700	N/A	1
F	LED TUBE WALL ACCENT	INO-LED BORDER TUBE	N/A	1
G	INTERIOR NEON WALL SIGN	INO-QYCT-NEON-18x57	N/A	1

**\*NOTE: PUSH ALL DIRECTIONAL SIGNS INTO ISLAND A MINIMUM OF 3'-0" (36") FROM FACE OF CURB**

AVALON BOULEVARD



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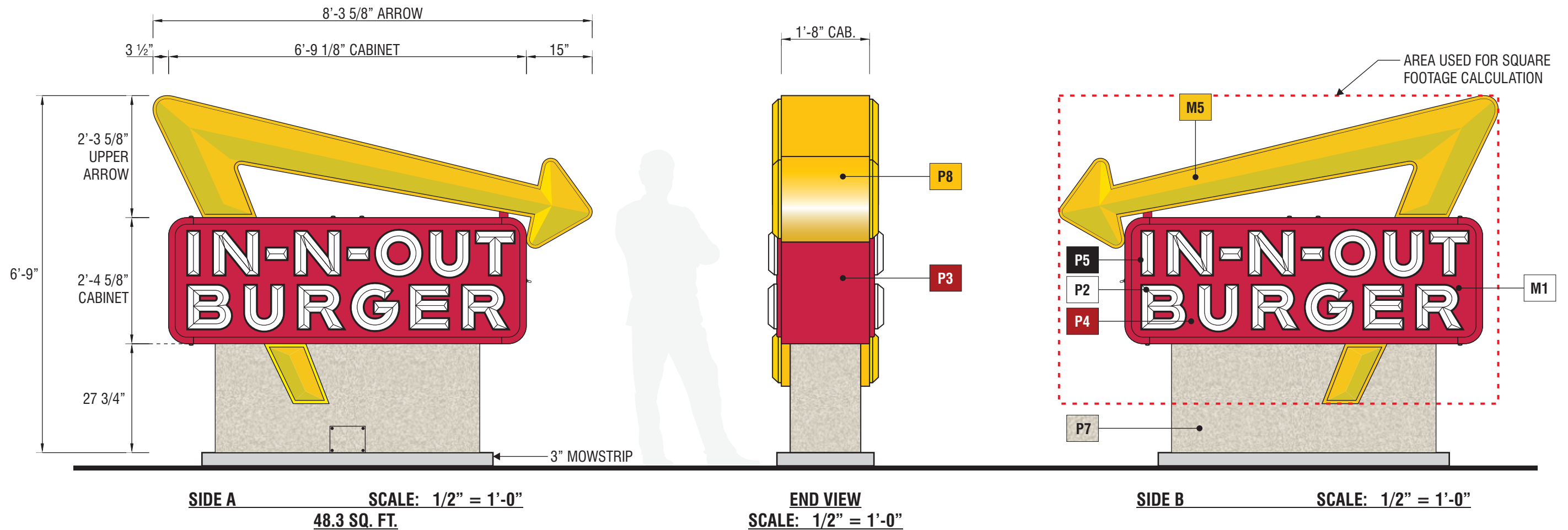
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**Design:** Thomsen  
**Engineering:**

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**drawing:** 21-00414 rev:4-07.20.21  
**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1



**A SIGNTYPE INO-MON-28X81X81**

**MANUFACTURE AND INSTALL ONE (1) D/F INTERNALLY ILLUMINATED MONUMENT SIGN**

**BASE:** FABRICATED ALUMINUM

**LETTER CABINET:** FABRICATED ALUMINUM W/ FABRICATED RETAINERS AND FORMED ACRYLIC FACES WITH SECOND SURFACE PAINTED GRAPHICS

**LETTER ILLUMINATION:** SLOAN SIGN BOX II 6500K DUAL SIDED

**ARROW:** FABRICATED CHANNEL WITH FORMED TUFFAK 1869 YELLOW POLYCARBONATE FACES

**ARROW ILLUMINATION:** 4000k WHITE LEDs

**PAINT**

- P2** WHITE
- P3** TO MATCH 'IN-N-OUT RED' W/ **HIGH GLOSS FINISH**
- P4** INO 443 RED / 25% CLEAR
- P5** BLACK
- P7** PAINTED TO MATCH DUNN EDWARDS #SP-514 'BONE CHINA' W/ MEDIUM TEXCOTE FINISH
- P8** PAINT TO MATCH MATTHEWS #MP4944 'YELLOW' WITH **HIGH GLOSS FINISH**

**MATERIALS**

- M1** CLEAR MODIFIED ACRYLIC
- M4** RED ACRYLIC #211-1
- M5** TUFFAK 1869 YELLOW POLYCARBONATE



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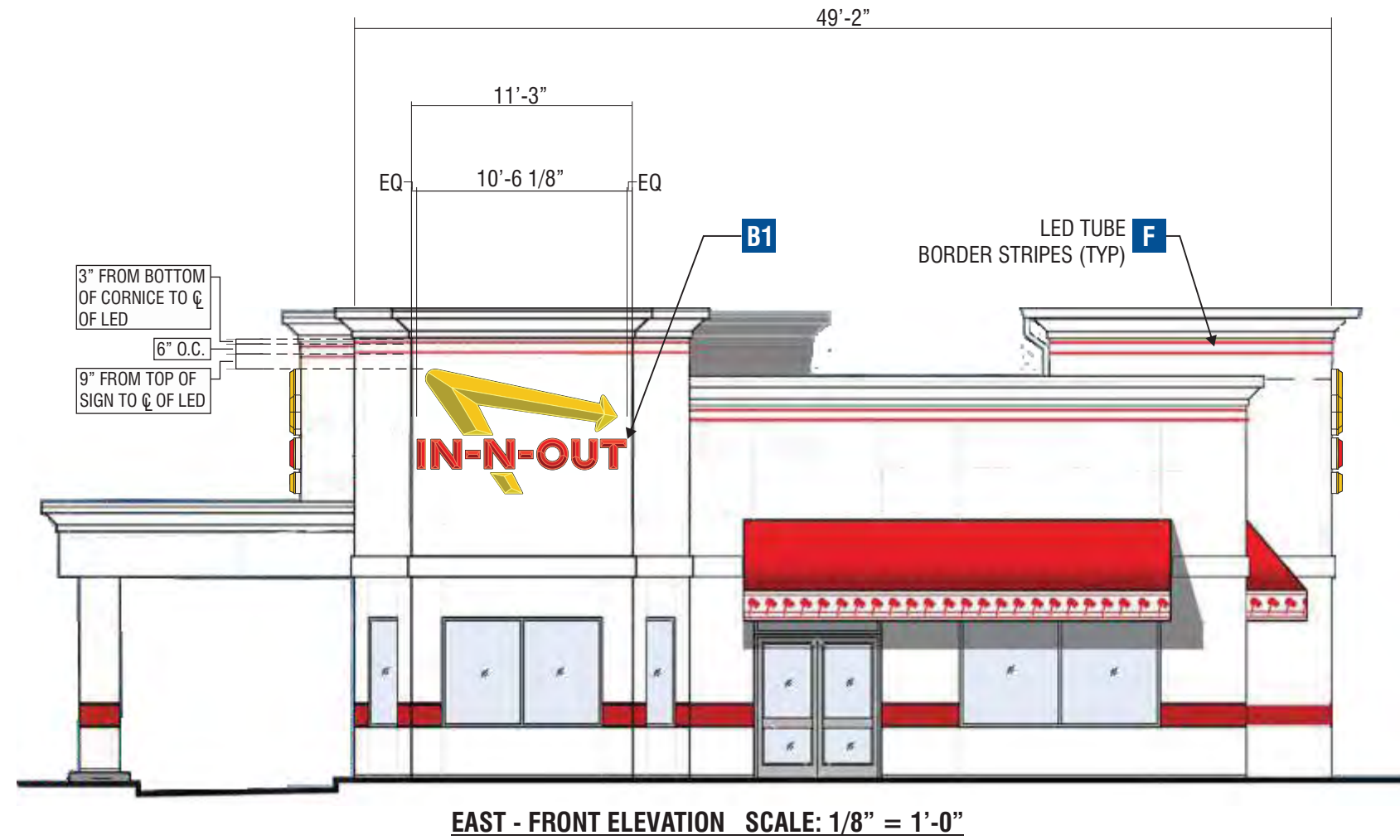
**In-N-Out**

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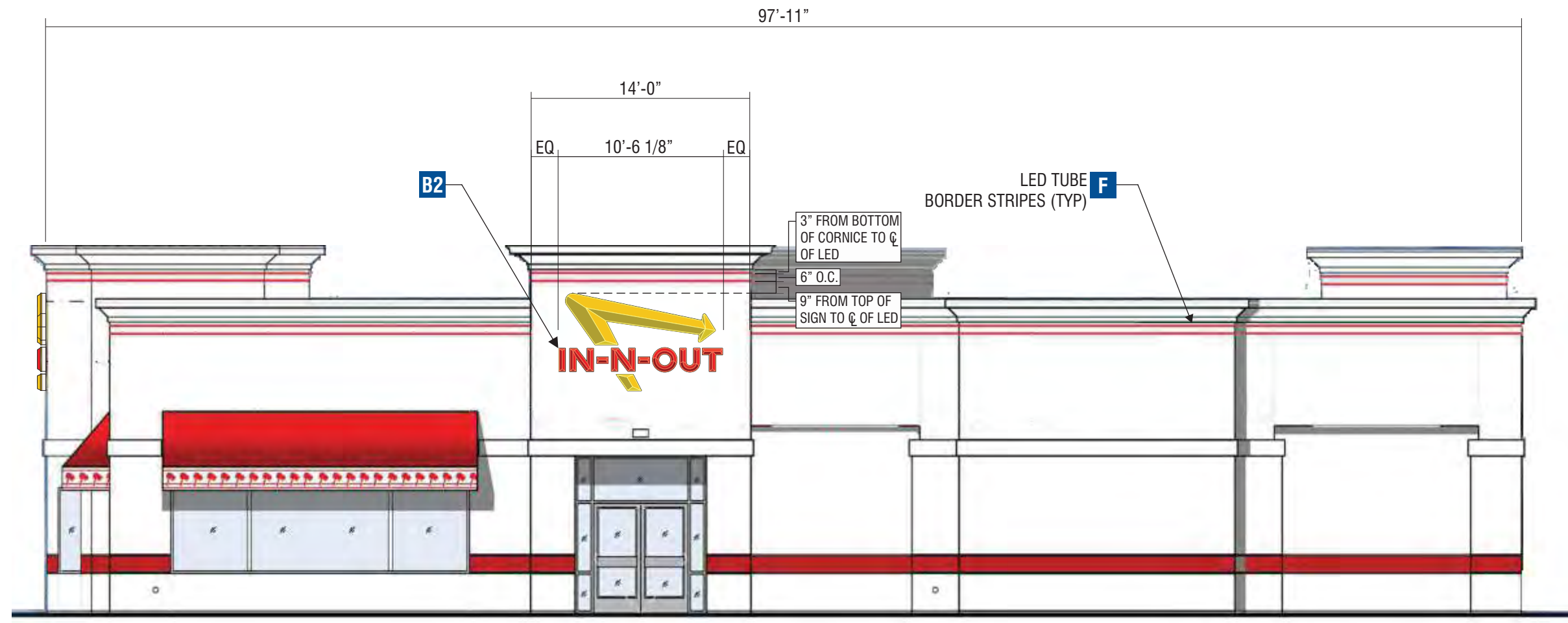
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**Design:** Thomsen  
**Engineering:**

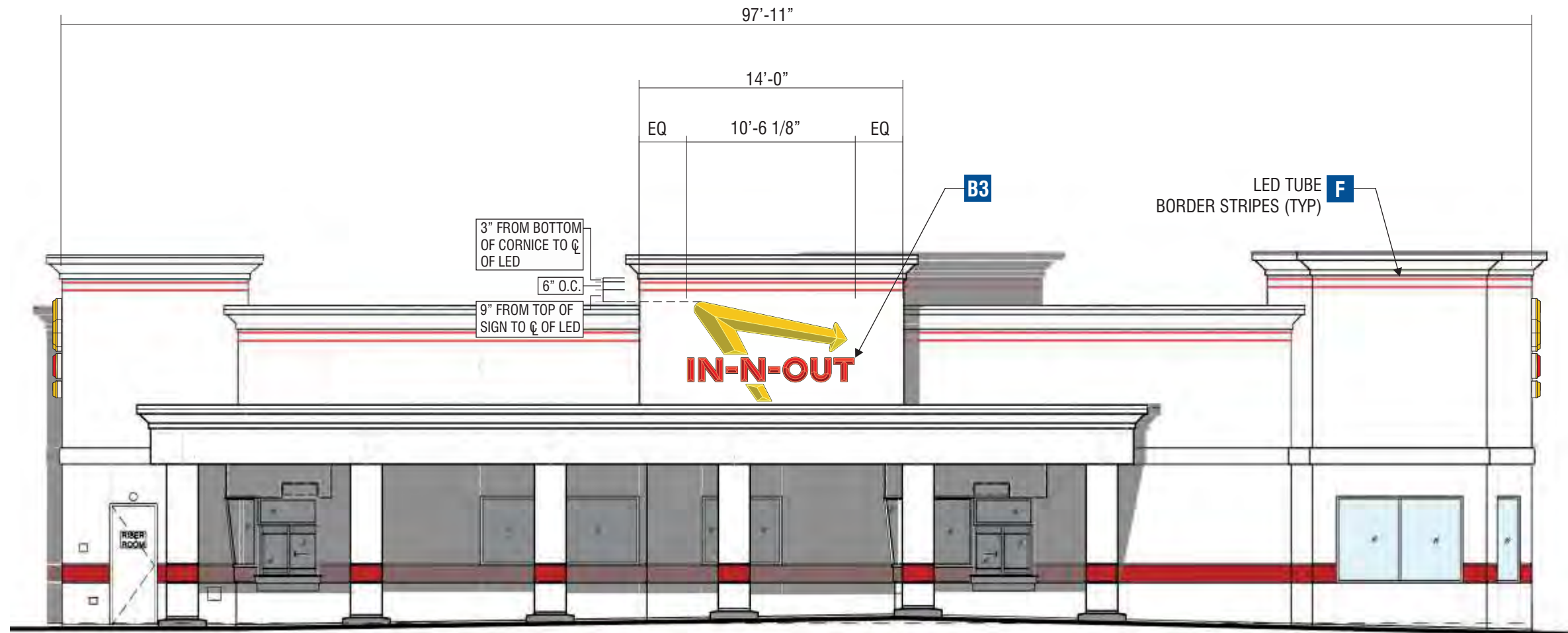
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**drawing:** 21-00414 **rev:** 4-07.20.21  
**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1



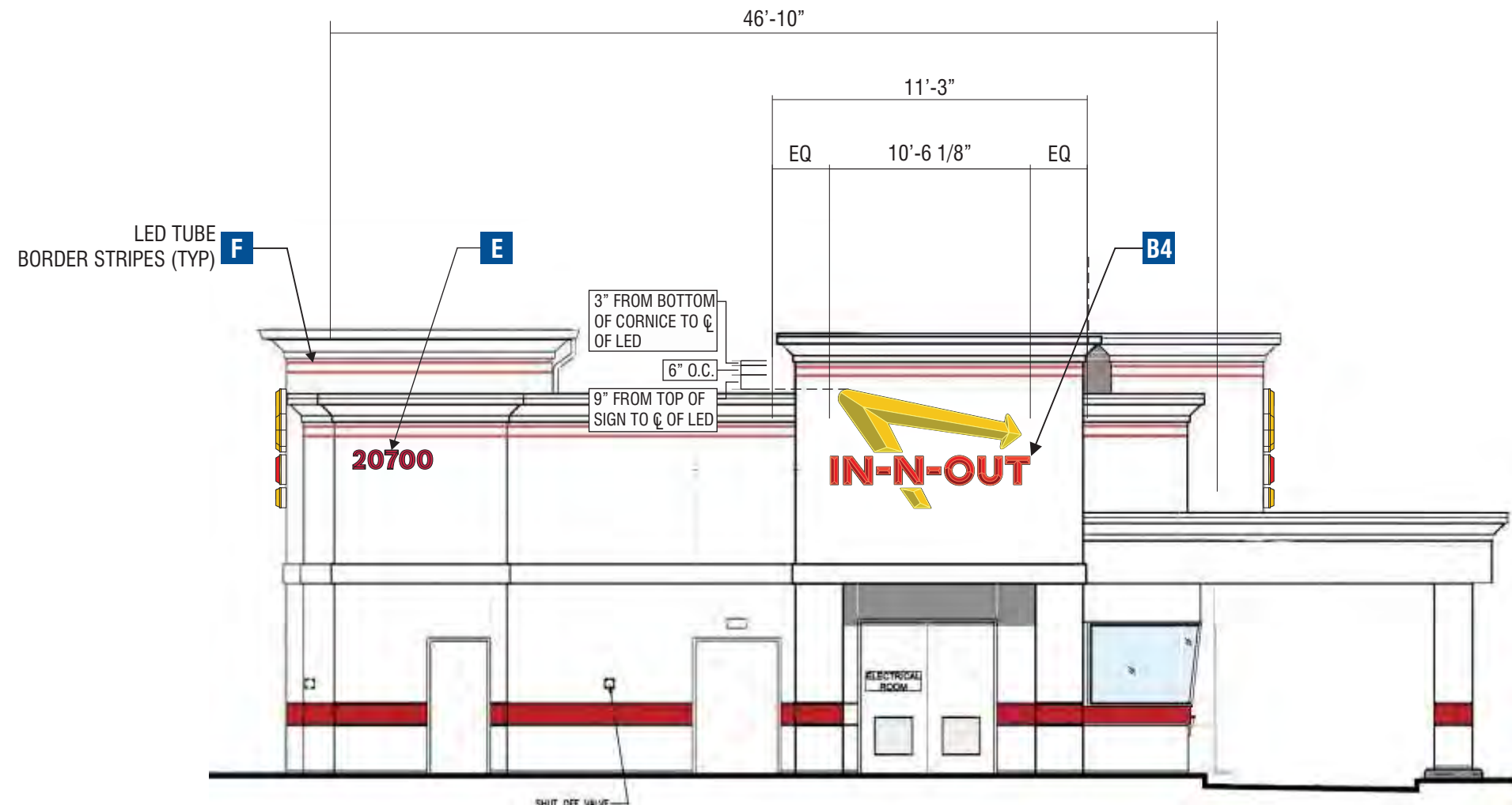




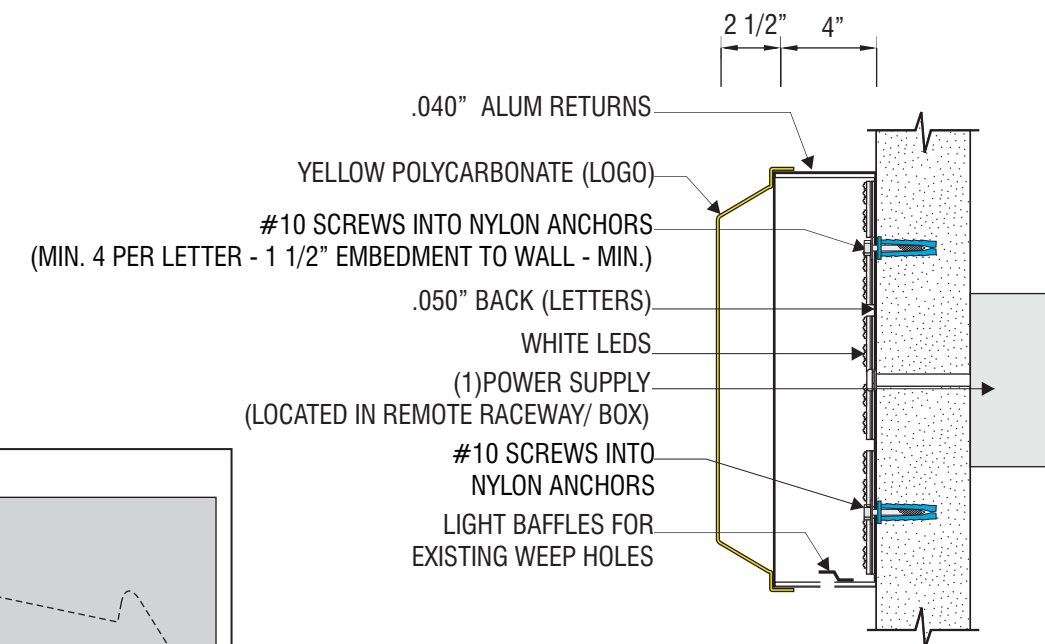
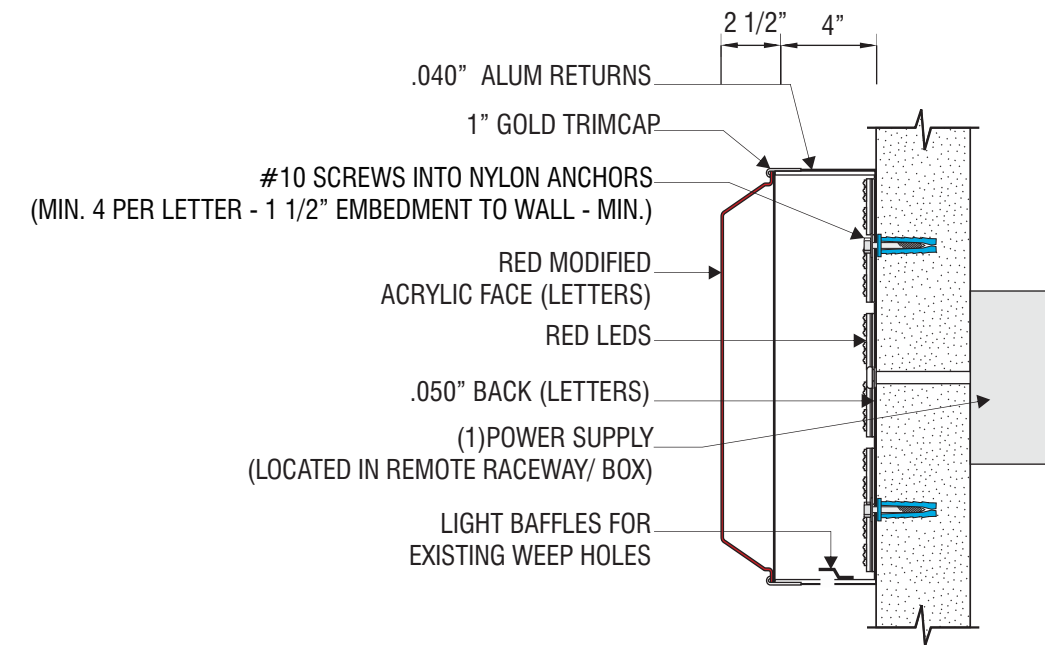
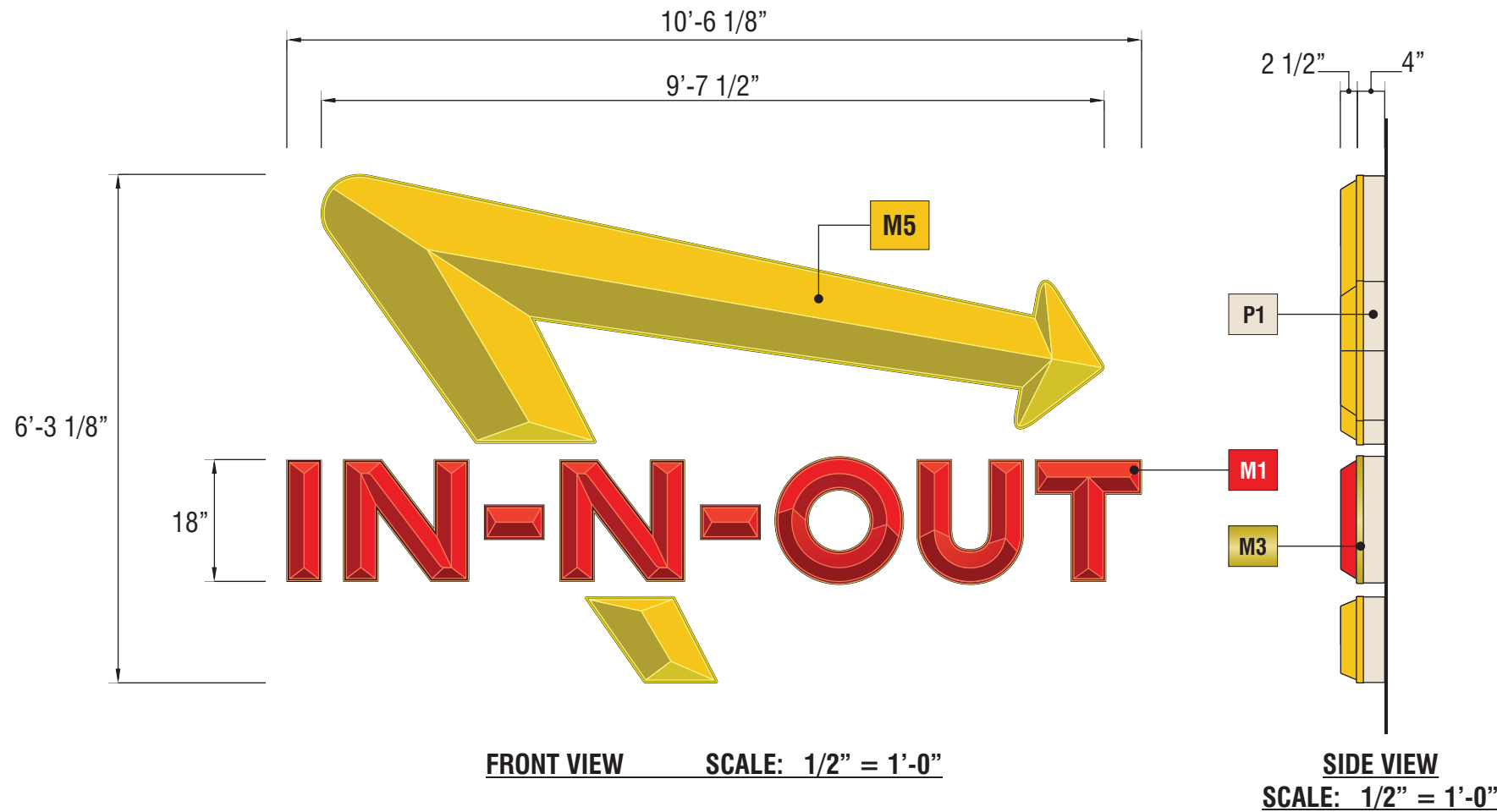
NORTH - RIGHT ELEVATION SCALE: 1/8" = 1'-0"



SOUTH - DRIVE THRU ELEVATION SCALE: 1/8" = 1'-0"



WEST - REAR ELEVATION SCALE: 1/8" = 1'-0"



**B1 B2 B3 B4 SIGNTYPE INO-WS-75x126**

**MANUFACTURE AND INSTALL FOUR (4) SINGLE-FACED INTERNALLY ILLUMINATED CHANNEL LETTER WALL SIGNS**

**ARROW:** FABRICATED CHANNEL WITH FORMED YELLOW POLYCARBONATE FACE

**LED ILLUMINATION:** SLOAN PRISM 4000K WHITE LEDs

**COPY:** FABRICATED CHANNEL WITH FORMED RED ACRYLIC FACE

**LED ILLUMINATION:** SLOAN PRISM RED LEDs

**INSTALLATION:** FLUSH MOUNT TO WALL

**MATERIALS**

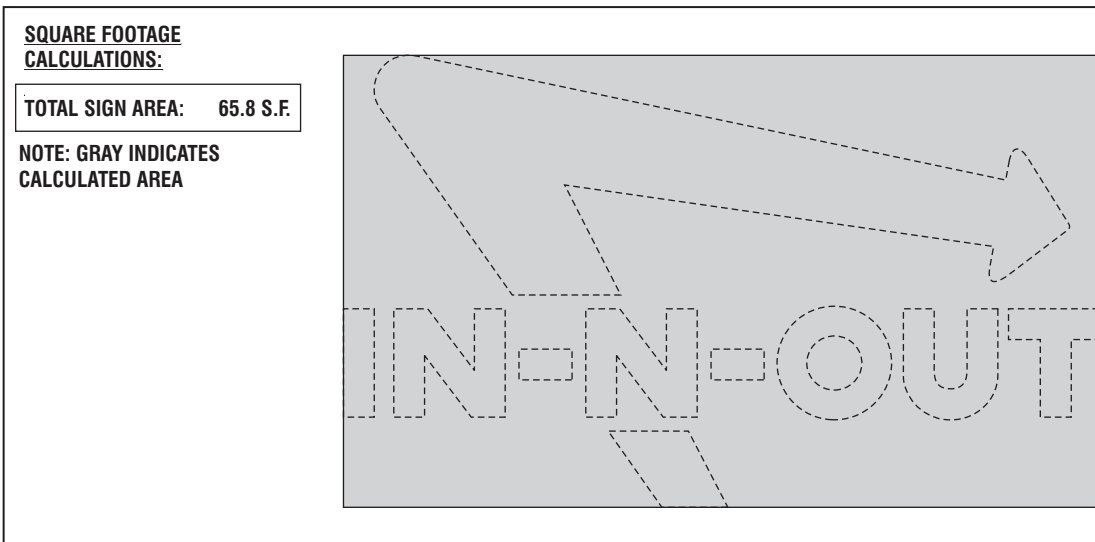
**PAINT**

**M1** RED ACRYLIC #211-1

**P1** TO MATCH 'BONE CHINA' SP 514 BY DUNN EDWARDS W/ SATIN FINISH

**M3** 1" GOLD TRIMCAP

**M5** TUFFAK 1869 YELLOW POLYCARBONATE



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**In-N-Out**

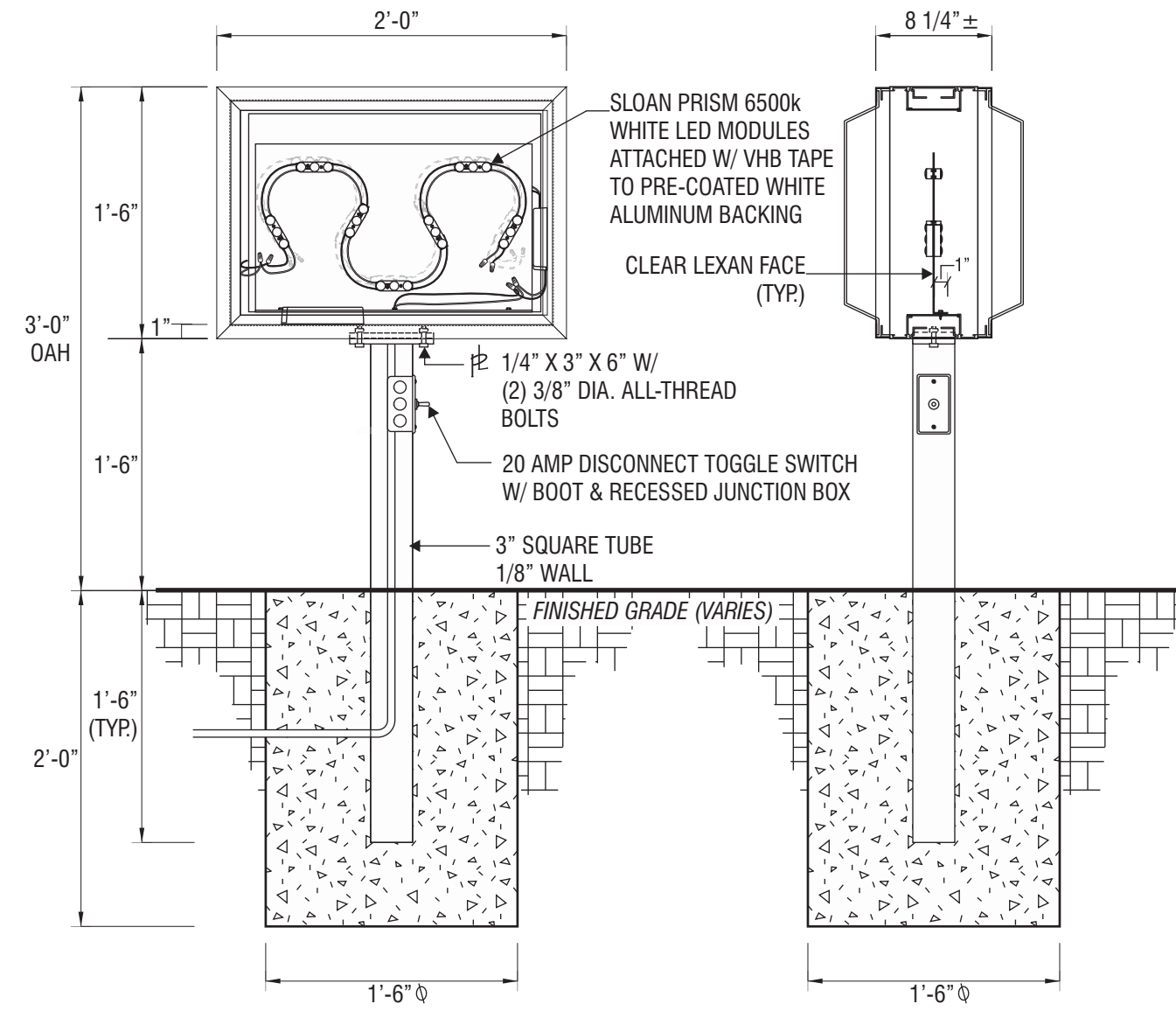
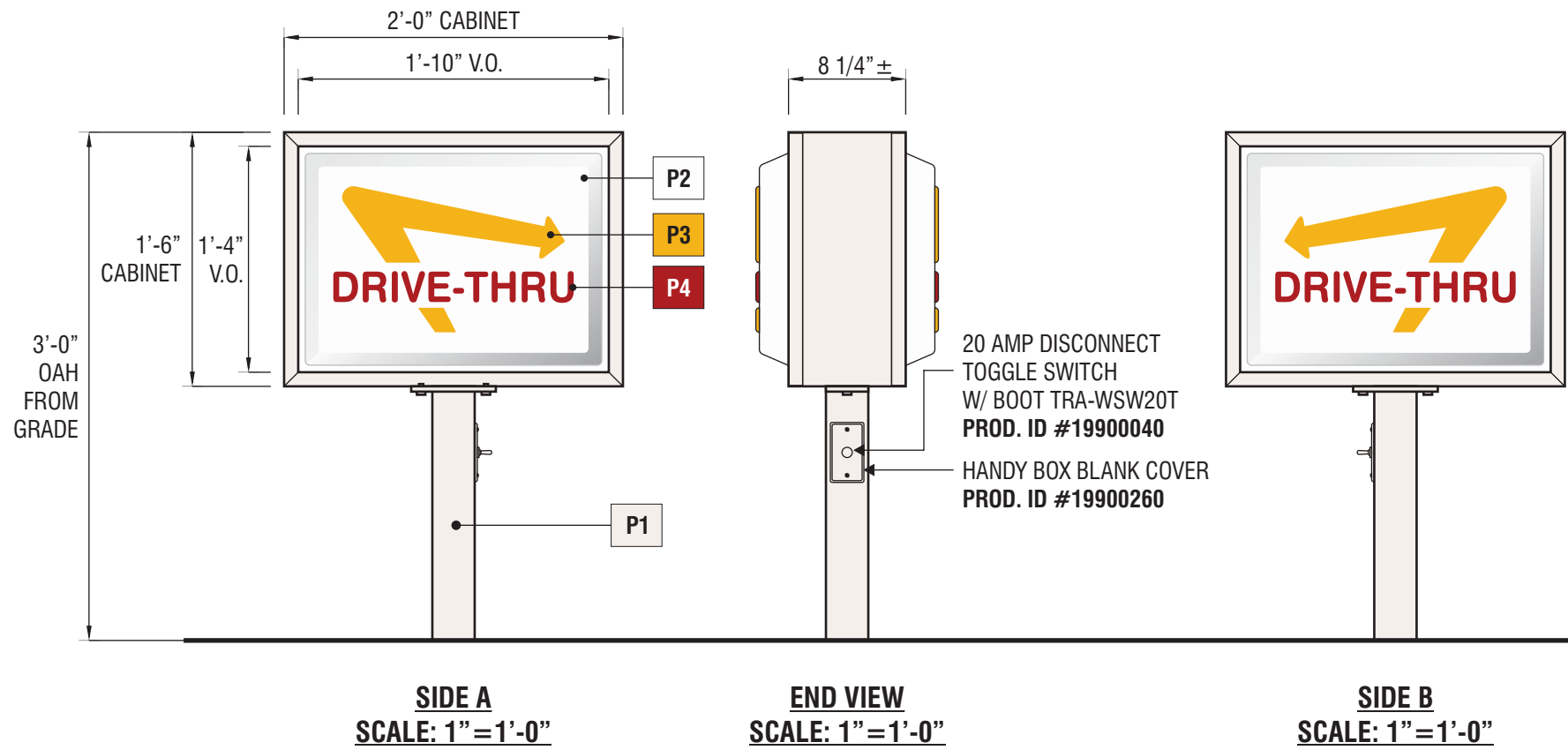
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**Design:** Thomsen  
**Engineering:**

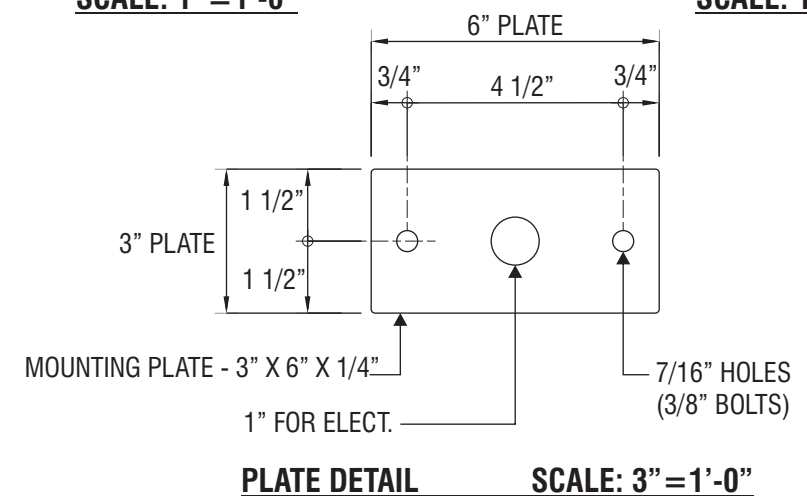
**date:** 03/17/21  
**drawing:** 21-00414 **rev:** 4-07.20.21  
**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1





**ELEVATION DETAIL VIEW**  
SCALE: 1"=1'-0"

**SIDE DETAIL VIEW**  
SCALE: 1"=1'-0"



**C1 C2 SIGNTYPE INO-DIR-18x24x36**

**MANUFACTURE AND INSTALL TWO (2) DOUBLE-FACED INTERNALLY ILLUMINATED DIRECTIONAL SIGNS**

**FACES:** PAN FORMED .093" CLEAR SG LEXAN WITH FORMED COPY & ARROW

**CABINET:** EXTRUDED ALUMINUM

**POLE:** 3" SQUARE TUBE WITH 1/8" WALL

**ILLUMINATION:** SLOAN PRISM 6500k WHITE LED MODULES

**PAINT**

- P1** PAINTED TO MATCH DUNN EDWARDS #SP-514 'BONE CHINA' w/ SATIN FINISH
- P2** INO WHITE
- P3** TO MATCH 3M VINYL #3630-235 'AUTUMN YELLOW'
- P4** INO 443 RED / 25% CLEAR



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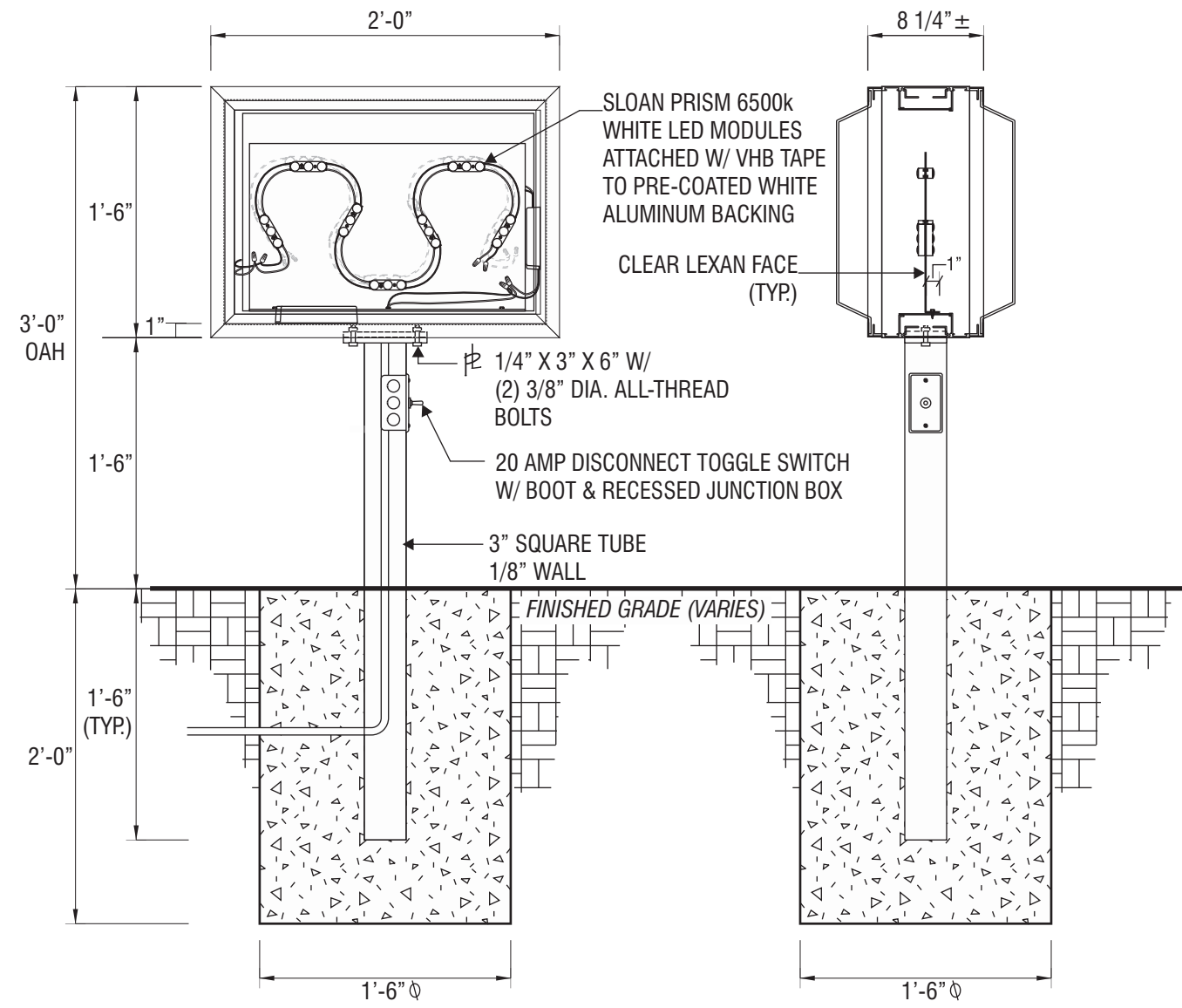
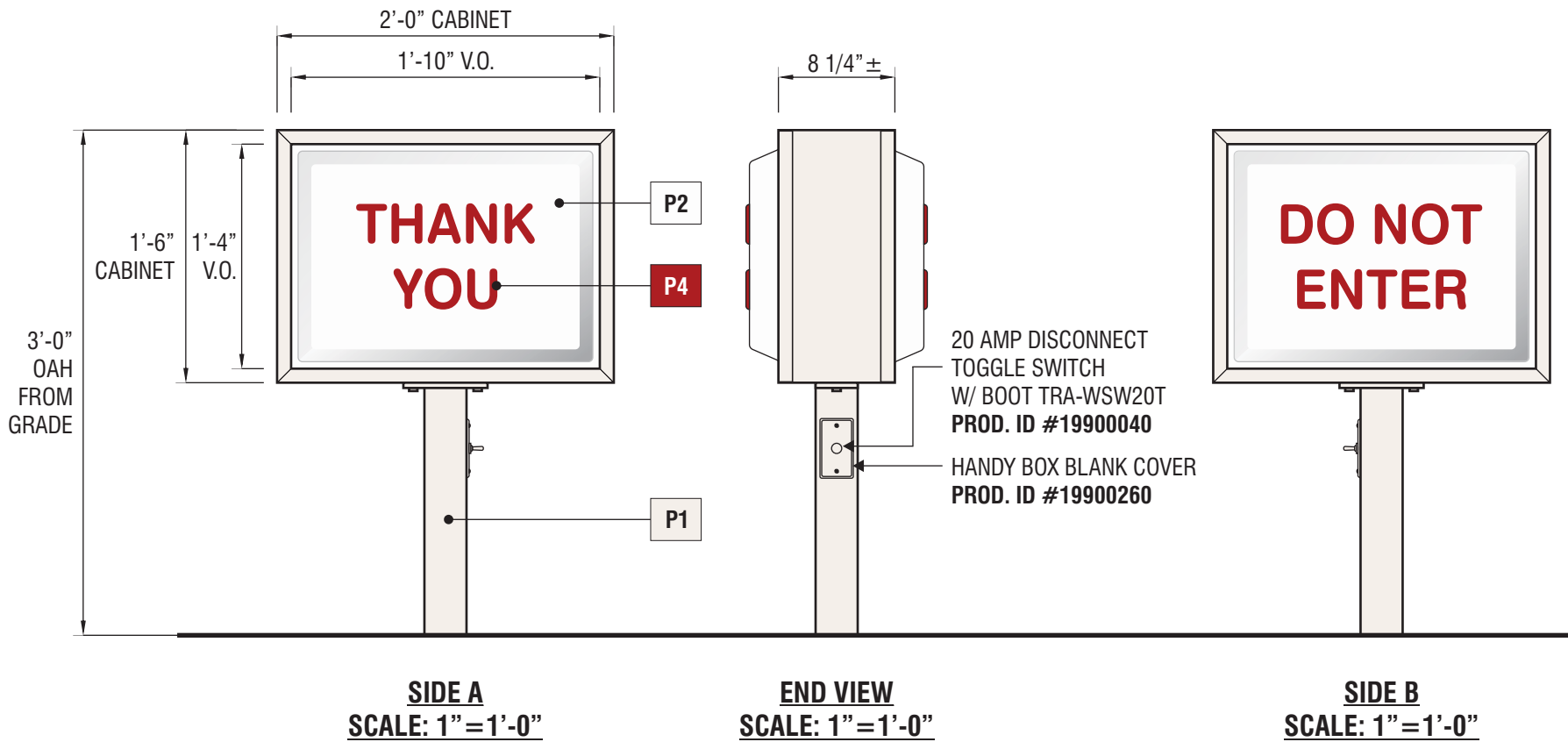
**In-N-Out**

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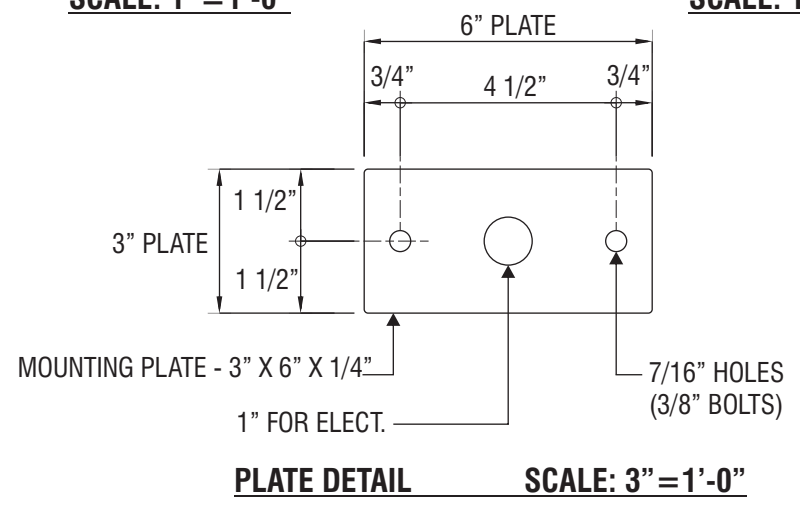
**Sales:** Bob McCarter  
**Coordinator:** Garry Wilcox  
**Design:** Thomsen  
**Engineering:**

**date:** 03/17/21  
**drawing:** 21-00414 rev:4-07.20.21  
**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1



**ELEVATION DETAIL VIEW**  
SCALE: 1" = 1'-0"

**SIDE DETAIL VIEW**  
SCALE: 1" = 1'-0"



**PLATE DETAIL** SCALE: 3" = 1'-0"

**C3 C4 SIGNTYPE INO-DIR-18x24x36**

**MANUFACTURE AND INSTALL TWO (2) DOUBLE-FACED INTERNALLY ILLUMINATED DIRECTIONAL SIGNS**  
**FACES:** PAN FORMED .093" CLEAR SG LEXAN WITH FORMED COPY  
**CABINET:** EXTRUDED ALUMINUM  
**POLE:** 3" SQUARE TUBE WITH 1/8" WALL  
**ILLUMINATION:** SLOAN PRISM 6500k WHITE LED MODULES

**PAINT**

- P1** PAINTED TO MATCH DUNN EDWARDS #SP-514 'BONE CHINA' w/ SATIN FINISH
- P2** INO WHITE
- P4** INO 443 RED / 25% CLEAR



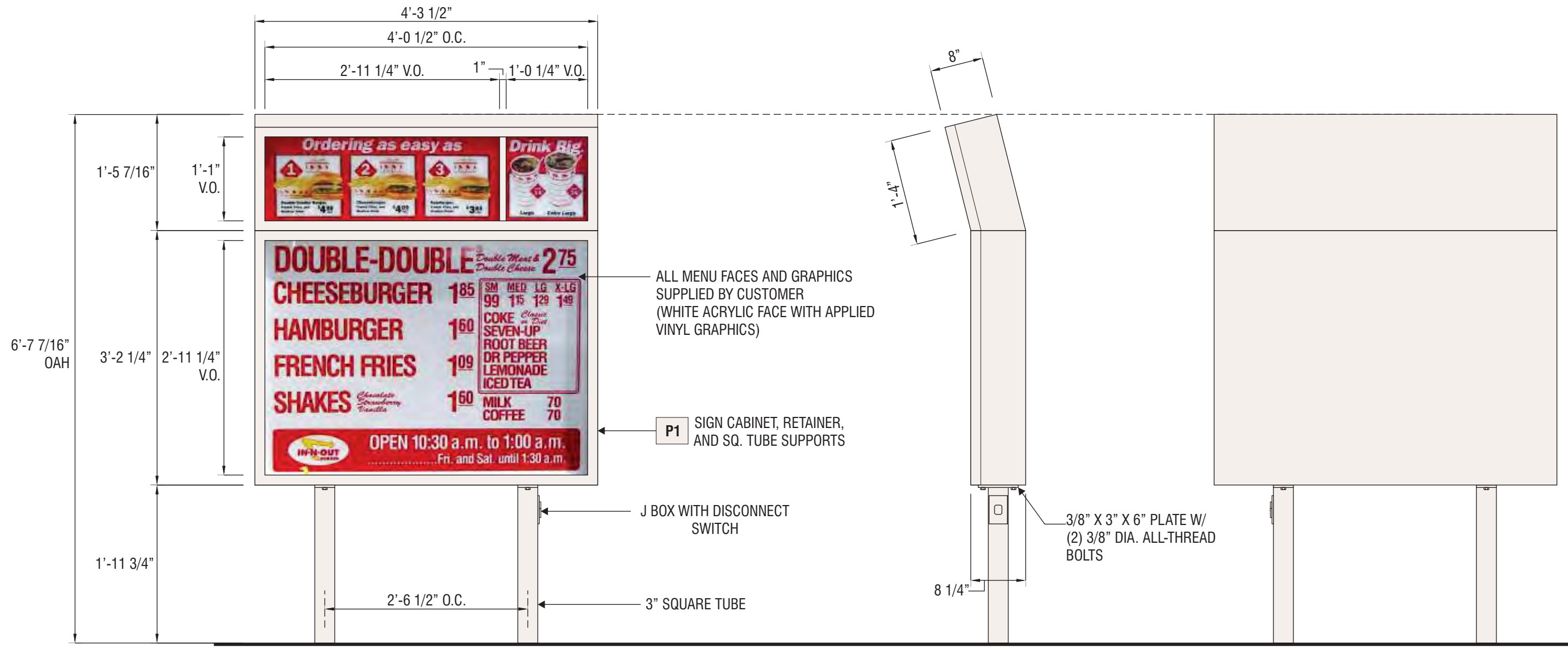
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**In-N-Out**  
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**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1



**FRONT VIEW** SCALE: 3/4" = 1'-0"  
19.9 SQ FT.

**SIDE VIEW** SCALE: 3/4" = 1'-0"

**BACK VIEW** SCALE: 3/4" = 1'-0"

**D SIGNTYPE INO-MB-54x51x79**

**MANUFACTURE AND INSTALL ONE (1) SINGLE-FACED INTERNALLY ILLUMINATED MENU BOARD**

**CABINET:** EXTRUDED ALUMINUM

**FACES:** WHITE ACRYLIC WITH FIRST SURFACE APPLIED GRAPHICS (BY OTHERS)

**POLES:** 3" SQUARE TUBE

**ILLUMINATION:** SLOAN SIGN BOX II SINGLE SIDED 5000K LEDs

**PAINT**

**P1** PAINTED TO MATCH DUNN EDWARDS  
#SP-514 'BONE CHINA' w/ SATIN FINISH



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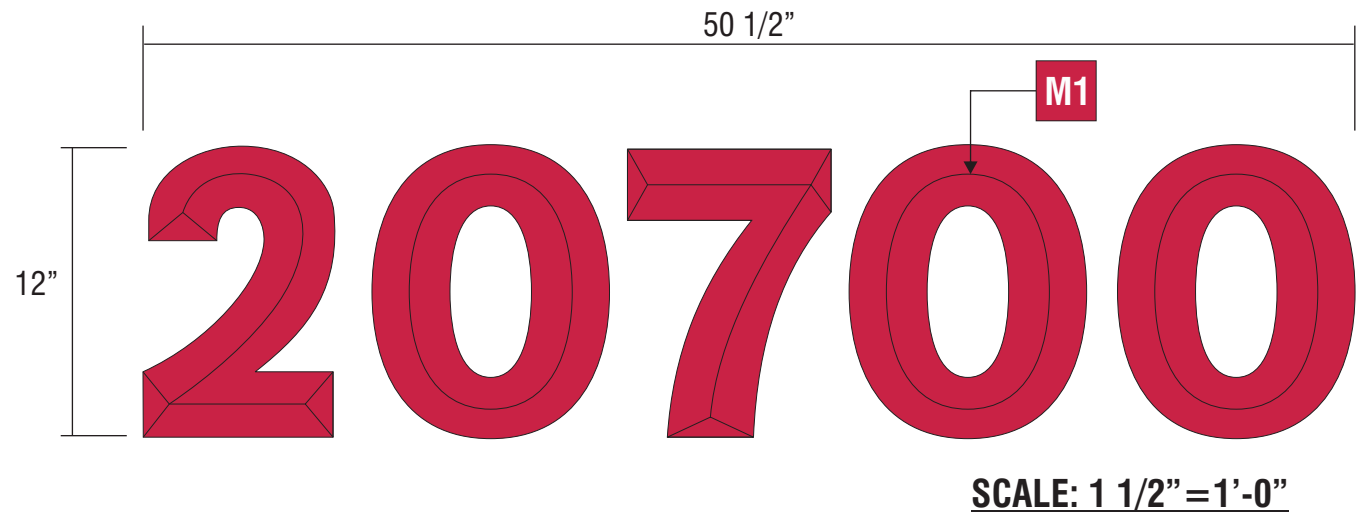
**In-N-Out**

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**Design:** Thomsen  
**Engineering:**

**date:** 03/17/21  
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**quote:**  
**project ID:** IN-N-OUT\_S.AVALON\_1

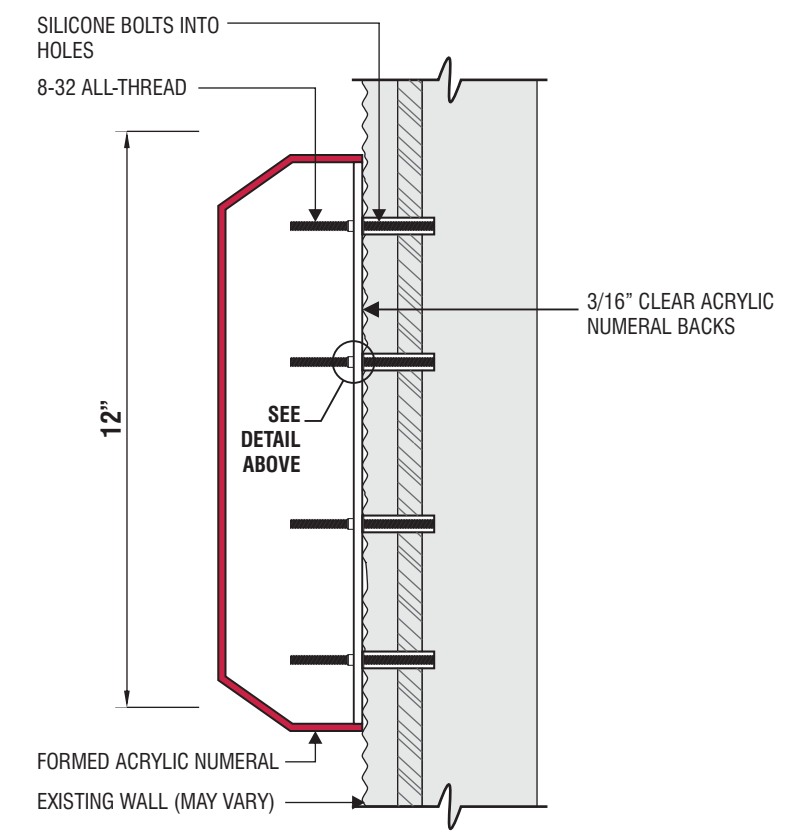
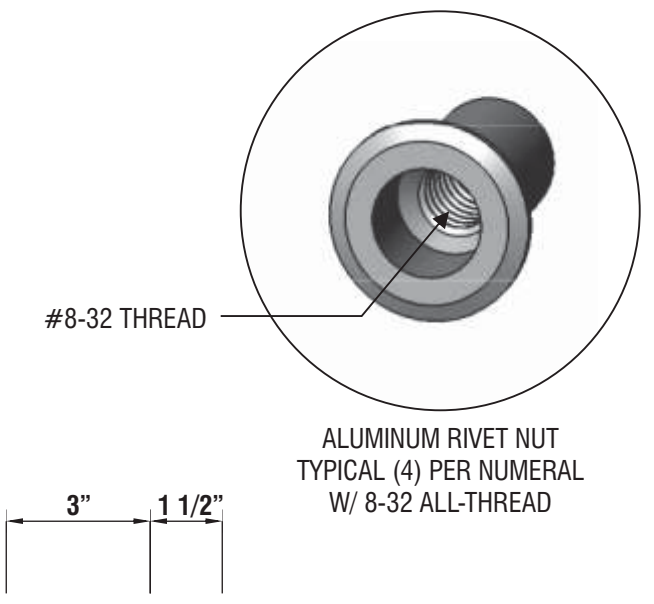


**E** SIGNTYPE INO-CL-PL-12-ADDRESS-20700

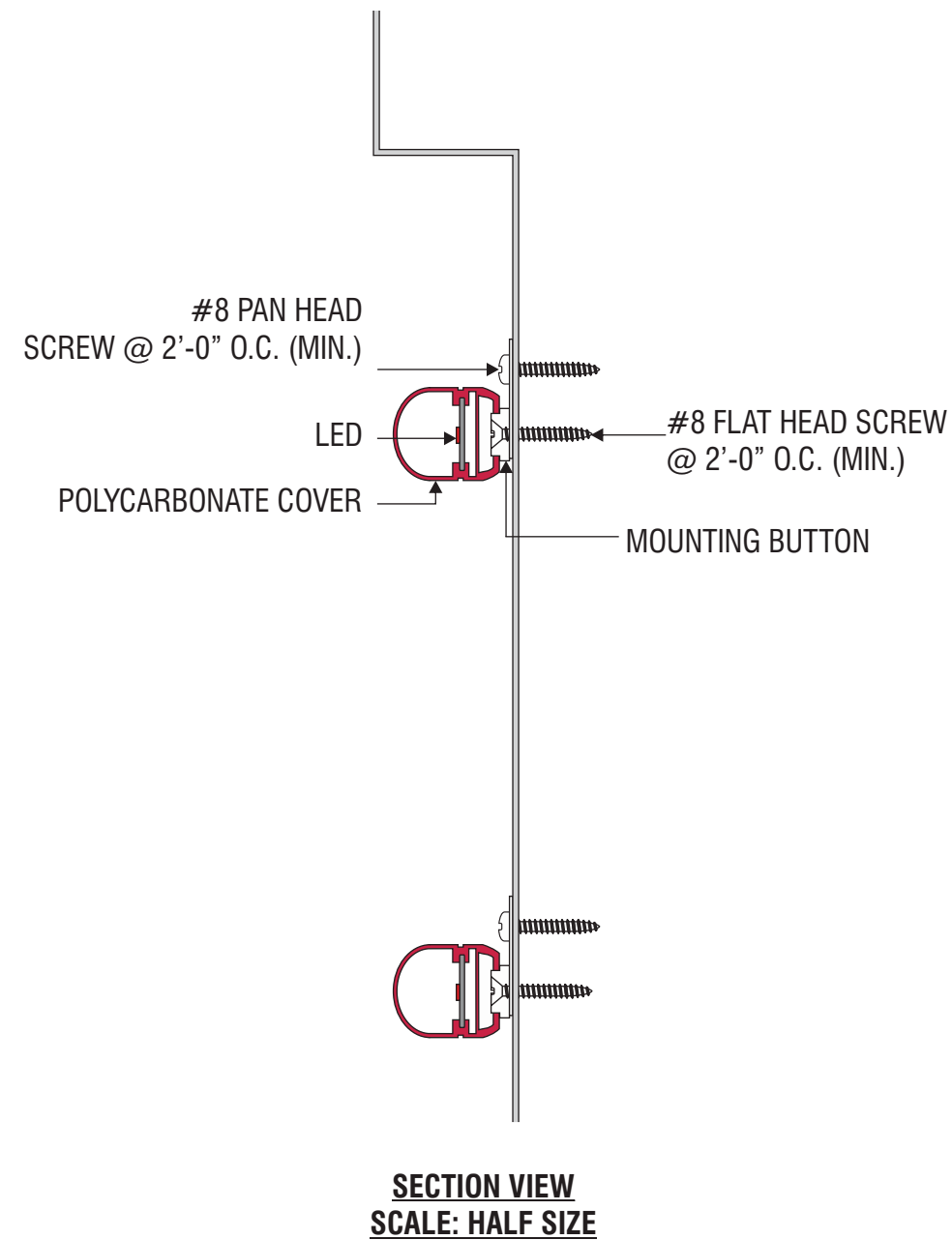
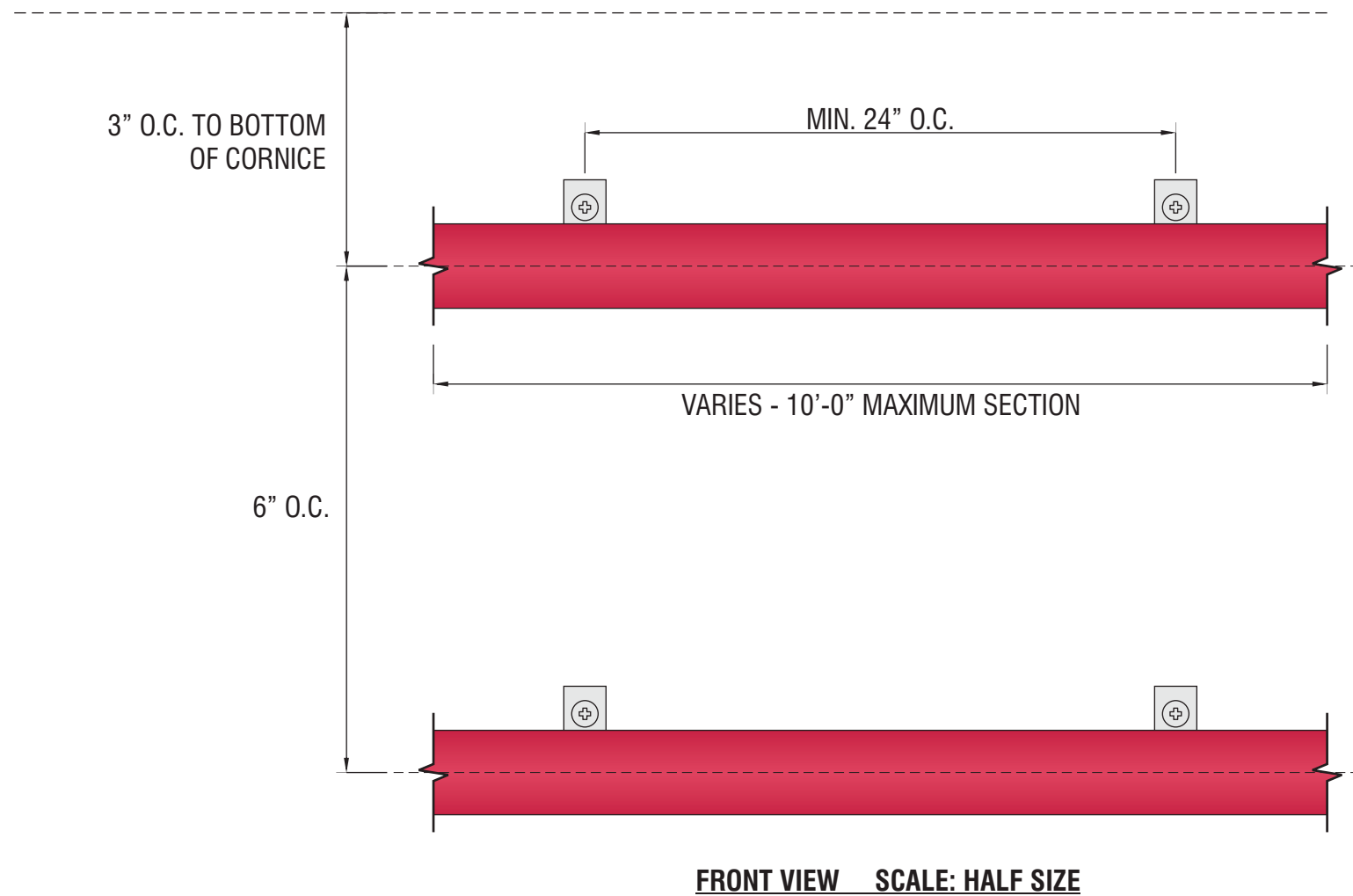
**MANUFACTURE AND INSTALL ONE (1) SET OF NON-ILLUMINATED ADDRESS NUMERALS**

**MATERIAL**

**M1** RED ACRYLIC #211-1



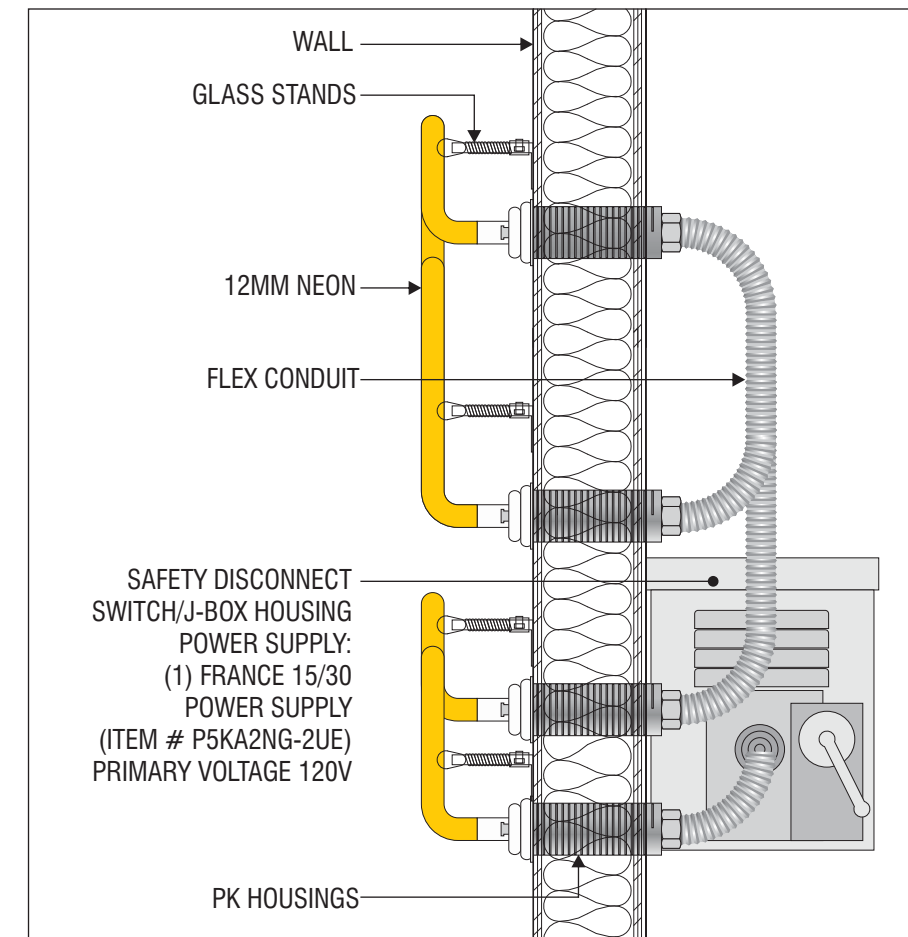
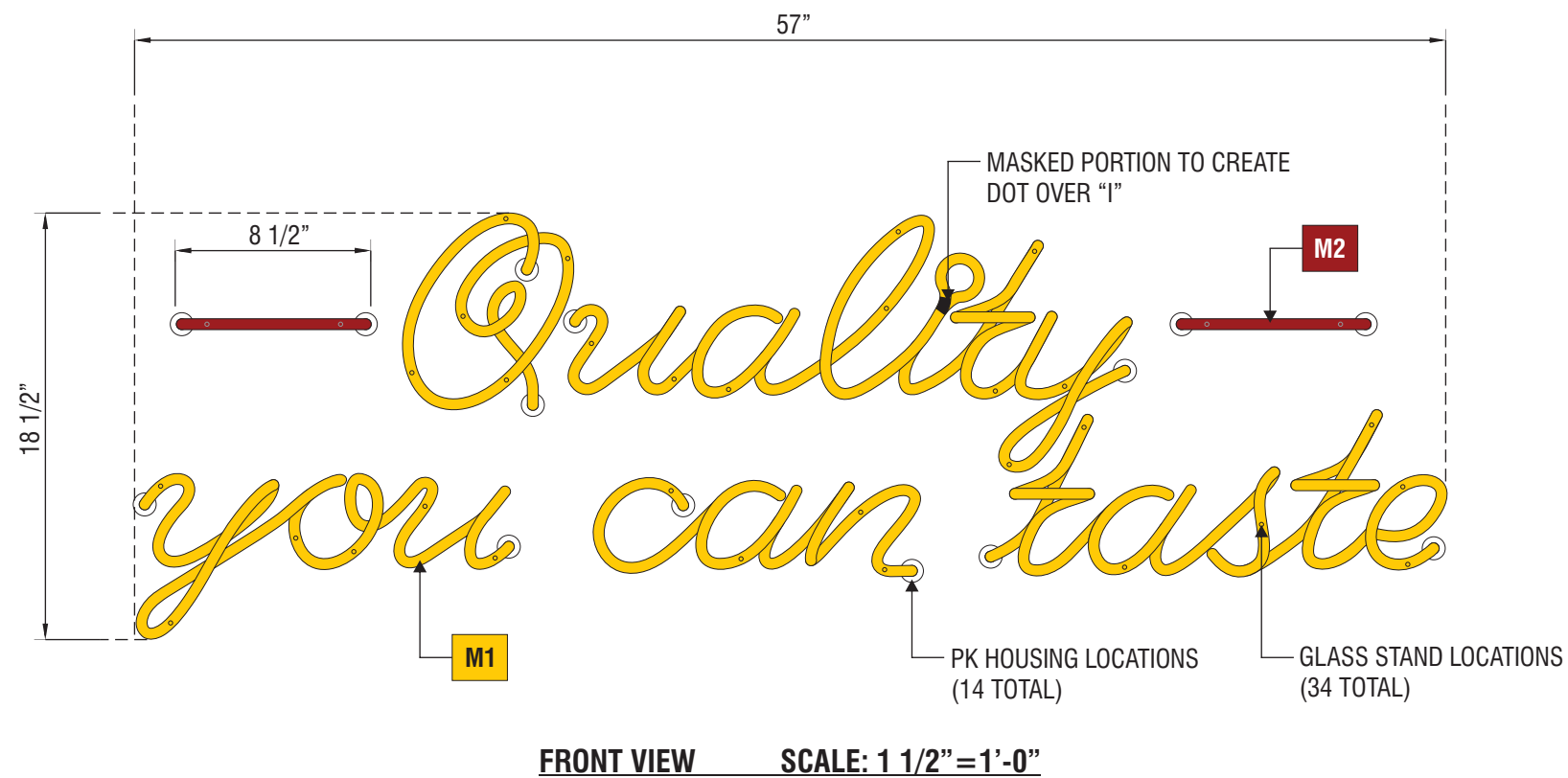




**F SIGNTYPE INO-LED BORDER TUBE**

**MANUFACTURE AND INSTALL LED TUBE BORDER STRIPES**

'SLOAN' LED RED LIGHTING SYSTEM.  
 ALL ELECTRICAL COMPONENTS  
 TO BE UL LISTED. ATTACH TO WALL AS REQUIRED.



**G** SIGNTYPE **INO-QYCT-NEON-18x57**

**MANUFACTURE AND INSTALL ONE (1) INTERIOR EXPOSED NEON WALL SIGN**

**MATERIALS**

- M1** EGL DOUBLE COATED 'NOVIOL GOLD' P73 EXPOSED NEON ILLUMINATION (12MM)
- M2** EGL DOUBLE COATED 'RUBY RED' EXPOSED NEON ILLUMINATION (12MM)





# **IN-N-OUT BURGER (20700 AVALON BOULEVARD) TRAFFIC IMPACT ANALYSIS**

City of Carson

December 1, 2021

**REVIEWED AND ACCEPTED**  
**2/3/2022**  
**NRL**



Traffic Engineering • Transportation Planning • Parking • Noise & Vibration  
Air Quality • Global Climate Change • Health Risk Assessment

**EXHIBIT NO. 3**

# IN-N-OUT BURGER (20700 AVALON BOULEVARD) TRAFFIC IMPACT ANALYSIS

City of Carson

December 1, 2021

*prepared by*

Perrie Ilercil, P.E. (AZ)  
Giancarlo Ganddini, PE, PTP



**GANDDINI GROUP, INC.**

555 Parkcenter Drive, Suite 225  
Santa Ana, California 92705  
(714) 795-3100 | [ganddini.com](http://ganddini.com)

Project No. 19398

# TABLE OF CONTENTS

---

<b>EXECUTIVE SUMMARY .....</b>	<b>IV</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
Project Description.....	1
Study Area.....	1
Analysis Scenarios .....	1
<b>2. METHODOLOGY.....</b>	<b>5</b>
Level of Service/Operational Analysis Methodology (Non-CEQA).....	5
Intersection Delay/Level of Service Methodology .....	5
Performance Standards .....	5
Substantial Operational Deficiency Criteria.....	6
Vehicle Miles Traveled Analytical Methodology (CEQA).....	6
<b>3. EXISTING CONDITIONS.....</b>	<b>7</b>
Existing Roadway System.....	7
Pedestrian Facilities.....	8
Transit Facilities.....	8
General Plan Context .....	8
Bicycle Facilities and Pedestrian Trails.....	8
Existing Roadway Volumes .....	8
Existing Intersection Level of Service.....	8
<b>4. PROJECT TRIP FORECASTS .....</b>	<b>20</b>
Project Trip Generation .....	20
Pass-By Trip Adjustments.....	20
Project Trip Distribution & Assignment.....	20
<b>5. FUTURE VOLUME FORECASTS .....</b>	<b>27</b>
Method of Projection .....	27
Ambient Growth.....	27
Other Developments .....	27
Analysis Scenario Volumes.....	27
Opening Year (2024) Base Without Project.....	27
Opening Year (2024) Base With Project .....	27
Opening Year (2024) Without Project .....	27
Opening Year (2024) With Project.....	28
<b>6. FUTURE LEVELS OF SERVICE ANALYSIS .....</b>	<b>48</b>
Opening Year (2024) Base Without Project (EA).....	48
Opening Year (2024) Base With Project (EAP).....	48
Opening Year (2024) Without Project.....	48
Opening Year (2024) With Project .....	48
<b>7. SITE ACCESS &amp; ON-SITE CIRCULATION.....</b>	<b>53</b>
Site Access Queuing Analysis.....	53
Drive-Through Lane Queue Evaluation.....	53
Drive-Through Lane Management.....	54
Delivery Truck Circulation.....	54



<b>8. CONCLUSIONS .....</b>	<b>58</b>
Project Trip Generation .....	58
Level of Service Analysis .....	58
Site Access Queuing Analysis.....	58
Drive Through Lane Queuing Analysis .....	58

**APPENDICES**

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Intersection Count Worksheets
Appendix D Existing Volume Adjustment Factor Calculations
Appendix E Intersection Level of Service Worksheets
Appendix F In-N-Out Burger Drive-Through Queue Data

**LIST OF TABLES**

Table 1. Existing Intersection Levels of Service .....	10
Table 2. Project Trip Generation.....	21
Table 3. Other Development Trip Generation .....	29
Table 4. Opening Year (2024) Base Intersection Levels of Service.....	49
Table 5. Opening Year (2024) Base With Project Intersection Level of Service Operations Assessment.....	50
Table 6. Opening Year (2024) Without Project Intersection Levels of Service.....	51
Table 7. Opening Year (2024) With Project Intersection Level of Service Operations Assessment.....	52
Table 8. Site Access Queuing Analysis .....	55
Table 9. Drive Through Lane Queue Summary - Weekday.....	56
Table 10. Drive Through Lane Queue Summary - Weekend .....	57

**LIST OF FIGURES**

Figure 1. Regional Location Map .....	2
Figure 2. Project Location Map.....	3
Figure 3. Site Plan .....	4
Figure 4. Existing Lane Geometry and Intersection Traffic Controls.....	11
Figure 5. Existing Pedestrian Facilities .....	12
Figure 6. Existing Transit Routes .....	13
Figure 7. City of Carson General Plan Circulation Element .....	14
Figure 8. City of Carson General Plan Roadway Cross-Sections.....	15
Figure 9. City of Carson Bicycle Facilities and Pedestrian Trails Master Plan.....	16
Figure 10. Existing Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	17
Figure 11. Existing Weekday PM Peak Hour Intersection Turning Movement Volumes .....	18
Figure 12. Existing Saturday Midday Peak Hour Intersection Turning Movement Volumes.....	19
Figure 13. Project Trip Distribution (Outbound).....	22
Figure 14. Project Trip Distribution (Inbound).....	23
Figure 15. Project Weekday Midday Peak Hour Intersection Turning Movement Volumes.....	24

Figure 16.	Project Weekday PM Peak Hour Intersection Turning Movement Volumes .....	25
Figure 17.	Project Saturday Midday Peak Hour Intersection Turning Movement Volumes.....	26
Figure 18.	Other Development Location Map .....	32
Figure 19.	Other Development Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	33
Figure 20.	Other Development Weekday PM Peak Hour Intersection Turning Movement Volumes .....	34
Figure 21.	Other Development Saturday Midday Peak Hour Intersection Turning Movement Volumes .....	35
Figure 22.	Opening Year (2024) Base Without Project Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	36
Figure 23.	Opening Year (2024) Base Without Project Weekday PM Peak Hour Intersection Turning Movement Volumes .....	37
Figure 24.	Opening Year (2024) Base Without Project Saturday Midday Peak Hour Intersection Turning Movement Volumes .....	38
Figure 25.	Opening Year (2024) Base With Project Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	39
Figure 26.	Opening Year (2024) Base With Project Weekday PM Peak Hour Intersection Turning Movement Volumes .....	40
Figure 27.	Opening Year (2024) Base With Project Saturday Midday Peak Hour Intersection Turning Movement Volumes .....	41
Figure 28.	Opening Year (2024) Without Project Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	42
Figure 29.	Opening Year (2024) Without Project Weekday PM Peak Hour Intersection Turning Movement Volumes .....	43
Figure 30.	Opening Year (2024) Without Project Saturday Midday Peak Hour Intersection Turning Movement Volumes .....	44
Figure 31.	Opening Year (2024) With Project Weekday Midday Peak Hour Intersection Turning Movement Volumes .....	45
Figure 32.	Opening Year (2024) With Project Weekday PM Peak Hour Intersection Turning Movement Volumes .....	46
Figure 33.	Opening Year (2024) With Project Saturday Midday Peak Hour Intersection Turning Movement Volumes .....	47
Figure 34.	Recommended Lane Geometry and Intersection Traffic Controls .....	59

## EXECUTIVE SUMMARY

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The purpose of this study is to evaluate the potential for transportation impacts resulting from development of the proposed project in the context of the City of Carson's discretionary authority for conformance with locally established operational standards. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms.

This study was prepared in consultation with City of Carson staff and in accordance with the procedures and methodologies for assessing transportation impacts established by the City of Carson. To assess the project's conformance with local operational standards, this study evaluates the project's effect on traffic operations and, if necessary, identifies recommended improvements or corrective measures to alleviate operational deficiencies substantially caused or worsened by the proposed project. For compliance with California Environmental Quality Act (CEQA) requirements, a vehicle miles traveled (VMT) assessment for the project is provided in a separate document (see *In-N-Out Burger (20700 Avalon Boulevard) Vehicle Miles Traveled Assessment*, Ganddini Group, Inc., June 25, 2021).

### *Project Description*

The 0.84-acre project site is located at 20700 South Avalon Boulevard within the existing South Bay Pavilion shopping center in the City of Carson, California. The project site is currently developed with a paved parking area serving the overall shopping center.

The proposed project involves construction of a new 3,885 square foot In-N-Out Burger restaurant with drive-through window. Vehicular access would be provided via existing driveways for the shopping center, primarily those located at Avalon Boulevard and Del Amo Boulevard.

### *Project Trip Generation*

The proposed is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour, 115 trips during the mid-day PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour.

### *Level of Service Analysis*

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Existing, Opening Year (2024) Base Without Project, and Opening Year (2024) Base With Project, and Opening Year (2024) With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for evaluated scenarios.

### *Site Access Queuing Analysis*

Adequate storage length is forecast to be provided for the westbound left turn into the shopping center from Del Amo Boulevard (Driveway C); however, the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive is forecast to exceed the available storage length for Opening Year (2024) Without and With Project conditions.

The following improvement is recommended to address the queuing deficiency for Opening Year (2024) With Project conditions:

3. Avalon Boulevard (NS) at Carson Plaza Drive (EW)
  - Restripe the southbound approach to provide a second left turn lane.



With the addition of project trips and implementation of the recommended improvements, the southbound left queue lengths are forecast to be reduced by 105 to 138 feet relative to the no project condition. Therefore, the proposed project is forecast to result in no project-related queuing deficiencies for Opening Year (2024) With Project conditions with implementation of the recommended improvements.

#### *Drive Through Lane Queuing Analysis*

Based on the proposed storage capacity for 24 vehicles, the drive-through lane is forecast to provide sufficient stacking area to accommodate both the average maximum queue of 22 vehicles and 85th-percentile maximum queue of 24 vehicles during the peak lunch and dinner hours for In-N-Out restaurants.

# 1. INTRODUCTION

This section introduces the proposed project and the general scope of the analysis.

## PROJECT DESCRIPTION

The 0.84-acre project site is located at 20700 South Avalon Boulevard within the existing South Bay Pavilion shopping center in the City of Carson, California. The project site is currently developed with a paved parking area serving the overall shopping center. Figure 1 and Figure 2 show the regional location map and project location map.

The proposed project involves construction of a new 3,885 square foot In-N-Out Burger restaurant with drive-through window. Vehicular access would be provided via existing driveways for the shopping center, primarily those located at Avalon Boulevard and Del Amo Boulevard. Figure 3 illustrates the project site plan.

## STUDY AREA

Based on the City-approved scoping agreement (see Appendix B), the study area consists of the following study intersections and roadway segments within City of Carson and California Department of Transportation (Caltrans) jurisdiction:

Study Intersections <sup>1</sup>	Jurisdiction
1. Avalon Boulevard (NS) at Turmont Street (EW)	Carson
2. Avalon Boulevard (NS) at Del Amo Boulevard (EW)	Carson
3. Avalon Boulevard (NS) at Carson Plaza Drive (EW)	Carson
4. Avalon Boulevard (NS) at Dominguez Street (EW)	Carson
5. Main Street (NS) at Del Amo Boulevard (EW)	Carson
6. Central Avenue (NS) at Del Amo Boulevard (EW)	Carson
7. Avalon Boulevard (NS) at Driveway A (EW)	Carson
8. Driveway B (NS) at Del Amo Boulevard (EW)	Carson
9. Driveway C (NS) at Del Amo Boulevard (EW)	Carson

Notes:

(NS) = north-south roadway; (EW) = east-west roadway

## ANALYSIS SCENARIOS

The following scenarios are analyzed for weekday mid-day peak hour, weekday PM peak hour, and Saturday mid-day peak hour conditions:

- Existing Conditions
- Opening Year (2024) Base<sup>1</sup>
- Opening Year (2024) Base With Project
- Opening Year (2024) Without Project Conditions<sup>2</sup>
- Opening Year (2024) With Project Conditions

<sup>1</sup> Opening Year Base conditions consist of existing traffic volumes plus ambient growth.

<sup>2</sup> Opening Year Without Project conditions consist of existing plus ambient growth plus other development traffic volumes.



**Figure 1**  
**Regional Location Map**





- Legend
- # Study Intersection
  - # Project Driveway

**Figure 2**  
**Project Location Map**



**Figure 3**  
**Site Plan**



## 2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies. In the absence of guidelines established by the City of Carson, this analysis was prepared in accordance with guidance provided in County of Los Angeles *Transportation Impact Analysis Guidelines (July 2020)* [“the County TIA Guidelines”].

### LEVEL OF SERVICE/OPERATIONAL ANALYSIS METHODOLOGY (NON-CEQA)

Level of Service analysis is performed for assessing conformance with General Plan and operational standards established by the applicable agencies. In accordance with current CEQA provisions, a project's effect on automobile delay (as measured by Level of Service) shall not constitute a significant environmental impact.

### Intersection Delay/Level of Service Methodology

The technique used to assess the performance of an intersection, as specified in the County TIA Guidelines, is known as the intersection delay method based on the procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board *Highway Capacity Manual* (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst minor street approach or major street left-turn movement. Intersection delay analysis was performed using the Vistro software with default capacity values and adjustment factors recommended in the *Highway Capacity Manual*.

### Performance Standards

The definition of an intersection deficiency has been obtained from the City of Carson General Plan. The General Plan states that peak hour intersection operations of Level of Service D or better are generally acceptable with the exception that the County of Los Angeles Congestion Management Program network may operate up to Level of Service E.



## **Substantial Operational Deficiency Criteria**

Based on the performance standards established by the City of Carson General Plan and the Level of Service methodology specified in the County TIA Guidelines, the following criteria are used to determine whether a project causes a substantial operational deficiency and should be required to provide improvements or corrective measures.

### *Signalized Intersections*

- Any study intersection operating at an acceptable Level of Service (D or better) without project traffic in which the addition of project traffic causes the intersection to degrade to a Level of Service (E or F) shall identify improvements to improve operations to Level of Service (D or better).
- Any signalized study intersection that is operating at unacceptable Level of Service (E or F) without project traffic where the project increases the volume to capacity ratio by 0.01 or more shall identify improvements to offset the increase and at a minimum, provide a V/C ratio that is equal to or better than pre-project conditions.

### *Unsignalized Intersections*

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

- a) The addition of project related traffic causes the intersection to degrade from an acceptable Level of Service (D or better) to Level of Service E or F.
- OR
- b) The project adds 0.01 or more to the volume to capacity ratio at an intersection that is already projected to operate without project traffic at a Level of Service E or F.
- AND
- c) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

If a project is forecast to result in a substantial operational deficiency, recommended corrective measures are identified that would reduce the project's effect to a level that does not exceed the specified deficiency criteria. Corrective measures can be in many forms, including the construction of physical improvements (e.g., addition of travel lanes, traffic control modifications, etc.) or the implementation of transportation demand management measures.

## **VEHICLE MILES TRAVELED ANALYTICAL METHODOLOGY (CEQA)**

The metric used to evaluate the transportation impact of land use and transportation projects under CEQA is known as vehicle miles traveled (VMT). In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Additional information and a detailed project assessment are provided in a separate Vehicle Miles Traveled Assessment document.

### 3. EXISTING CONDITIONS

---

This section describes the existing transportation setting.

#### EXISTING ROADWAY SYSTEM

Figure 4 shows the lane geometry and intersection traffic controls for existing conditions based on a field survey of the study area. Regional access to the project site is provided by Interstate 405 approximately one-half mile to the south and Interstate 110 approximately 1.3 miles to the west. Local north-south circulation is provided by Avalon Boulevard, Main Street and Central Avenue; and east-west circulation is provided by Del Amo Avenue, Dominguez Street and Turmont Street.

**Avalon Boulevard:** This six-lane divided roadway trends in a north-south direction and is classified as a Major Arterial (4 lane-divided with 100 to 108 feet of right-of-way) on the City of Carson General Plan Circulation Element in the study area. On-street parking is generally prohibited on both sides of the roadway. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Avalon Boulevard as an existing Class I bike lane with signs and pavement markings north of Del Amo Avenue. Sidewalks are generally complete in the project vicinity.

**Del Amo Avenue:** This four- to six-lane divided roadway trends in an east-west direction and is classified as a Major Arterial (4 lane-divided with 100 to 108 feet of right-of-way) on the City of Carson General Plan Circulation Element in the study area. On-street parking is prohibited on both sides of the roadway in the study area. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Del Amo Avenue as an existing Class I bike lane with signs and pavement markings east of Avalon Boulevard and (unmarked/on-street) west of Avalon Boulevard. Sidewalks are generally complete in the project vicinity.

**Main Street:** This four-lane divided roadway trends in a north-south direction and is classified as a Major Arterial (4 lane-divided with 100 to 108 feet of right-of-way) on the City of Carson General Plan Circulation Element in the study area. On-street parking is generally permitted on both sides of the roadway. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Main Street as an existing Class III bike route with signs and pavement markings north of Del Amo Avenue. Sidewalks are generally complete in the project vicinity.

**Central Avenue:** This four-lane divided roadway trends in a north-south direction and is classified as a Major Arterial (4 lane-divided with 100 to 108 feet of right-of-way) on the City of Carson General Plan Circulation Element in the study area. On-street parking is prohibited on both sides of the roadway in the study area. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Central Avenue as an existing Class I bike lane with signs and pavement markings north of Del Amo Avenue. Sidewalks are generally complete in the project vicinity.

**Dominguez Street:** This four-lane divided roadway trends in an east-west direction and is unclassified the City of Carson General Plan Circulation Element in the study area. On-street parking is generally prohibited on both sides of the roadway. There are currently no bike signs or marking on the roadway and it is not listed in the City Plan as an identified route. Sidewalks are generally complete in the project vicinity.

**Turmont Street:** This two-lane undivided roadway trends in an east-west direction and is classified as a Collector (2-lane with 64 feet of right-of-way) on the City of Carson General Plan Circulation Element in the study area. On-street parking is permitted on both sides of the roadway in the study area. The City's Bicycle Facilities and Pedestrian Trails Master Plan identifies Turmont Street as an existing Class III bike route. Sidewalks are generally complete in the project vicinity.

## **PEDESTRIAN FACILITIES**

Existing pedestrian facilities in the project vicinity are shown on Figure 5. As shown on Figure 5, sidewalks are currently provided along the project site frontage.

## **TRANSIT FACILITIES**

Figure 6 shows the existing Los Angeles Metro transit system map in the project vicinity. As shown on Figure 6, City of Carson Transit Route 1 and Metro Route 205 runs along Del Amo Avenue with a bus stop located at the southeast corner of Avalon Boulevard and Del Amo Avenue. Metro Route 246 runs along Avalon Boulevard with a bus stop located approximately 700 feet north and 800 feet south of the site.

## **GENERAL PLAN CONTEXT**

Figure 7 shows the City of Carson General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Carson standard roadway cross-sections are illustrated on Figure 8.

## **BICYCLE FACILITIES AND PEDESTRIAN TRAILS**

The City of Carson Bicycle Master Plan is shown on Figure 9. This figure shows the bicycle facilities master plan. As shown on Figure 9, there is an existing Class I bike path/multi-use trail along the Dominguez Channel west of the project site and there are Class II bike lanes along Del Amo Avenue, Avalon Boulevard north of Del Amo Avenue, and Leapwood Avenue. Turmont Street is signed as a Class III bike route.

## **EXISTING ROADWAY VOLUMES**

Figure 10 through Figure 12 show the existing (year 2021) weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes. Existing peak hour intersection volumes are based upon weekday mid-day, weekday PM, and Saturday mid-day peak period intersection turning movement counts obtained in October 2021 during typical weekday and Saturday conditions. The weekday midday peak period was counted between 11:00 AM and 2:00 PM; the PM peak period was counted between 4:00 PM and 6:00 PM; and the Saturday mid-day peak period was counted between 11:00 AM and 2:00 PM. The actual peak hour within the peak period is the four consecutive 15-minute periods with the highest total volume when all movements are added together. Thus, the PM peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

To account for lingering effects of the COVID-19 pandemic on current traffic volumes, the peak hour intersection volumes collected in October 2021 were compared to historical traffic counts to assess whether adjustments were necessary to reflect non-pandemic conditions. Appendix D contains adjustment factor calculations for comparing the new 2021 counts to non-pandemic estimates derived from April 2017 counts with application of annual growth to year 2021. As shown in Appendix D, the new 2021 counts were determined to be slightly lower than the pre-pandemic volumes with annual growth. To provide a conservative analysis, an adjustment factor of 1.048 was applied to the October 2021 traffic counts (4.8% increase). This methodology was developed in consultation with City staff.

## **EXISTING INTERSECTION LEVEL OF SERVICE**

The study intersection Levels of Service for Existing (Year 2021) conditions are shown in Table 1. Detailed Level of Service worksheets are provided in Appendix E.



As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (D or better).

**Table 1**  
**Existing Intersection Levels of Service**

ID	Study Intersection	Traffic Control <sup>1</sup>	Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>
1.	Avalon Blvd at Turmont St	TS	6.0	A	4.4	A	6.3	A
2.	Avalon Blvd at Del Amo Blvd	TS	34.0	C	39.6	D	31.5	C
3.	Avalon Blvd at Carson Plaza Dr	TS	18.3	B	16.0	B	17.3	B
4.	Avalon Blvd at Dominguez St	TS	20.4	C	20.9	C	21.9	C
5.	Main St at Del Amo Blvd	TS	27.5	C	32.6	C	26.1	C
6.	Central Ave at Del Amo Blvd	TS	17.7	B	20.4	C	17.8	B
7.	Avalon Blvd at Driveway A	CSS	15.5	C	15.4	C	14.9	B
8.	Driveway B at Del Amo Blvd	CSS	12.2	B	17.9	C	11.5	B
9.	Driveway C at Del Amo Blvd	CSS	13.9	B	22.1	C	12.5	B

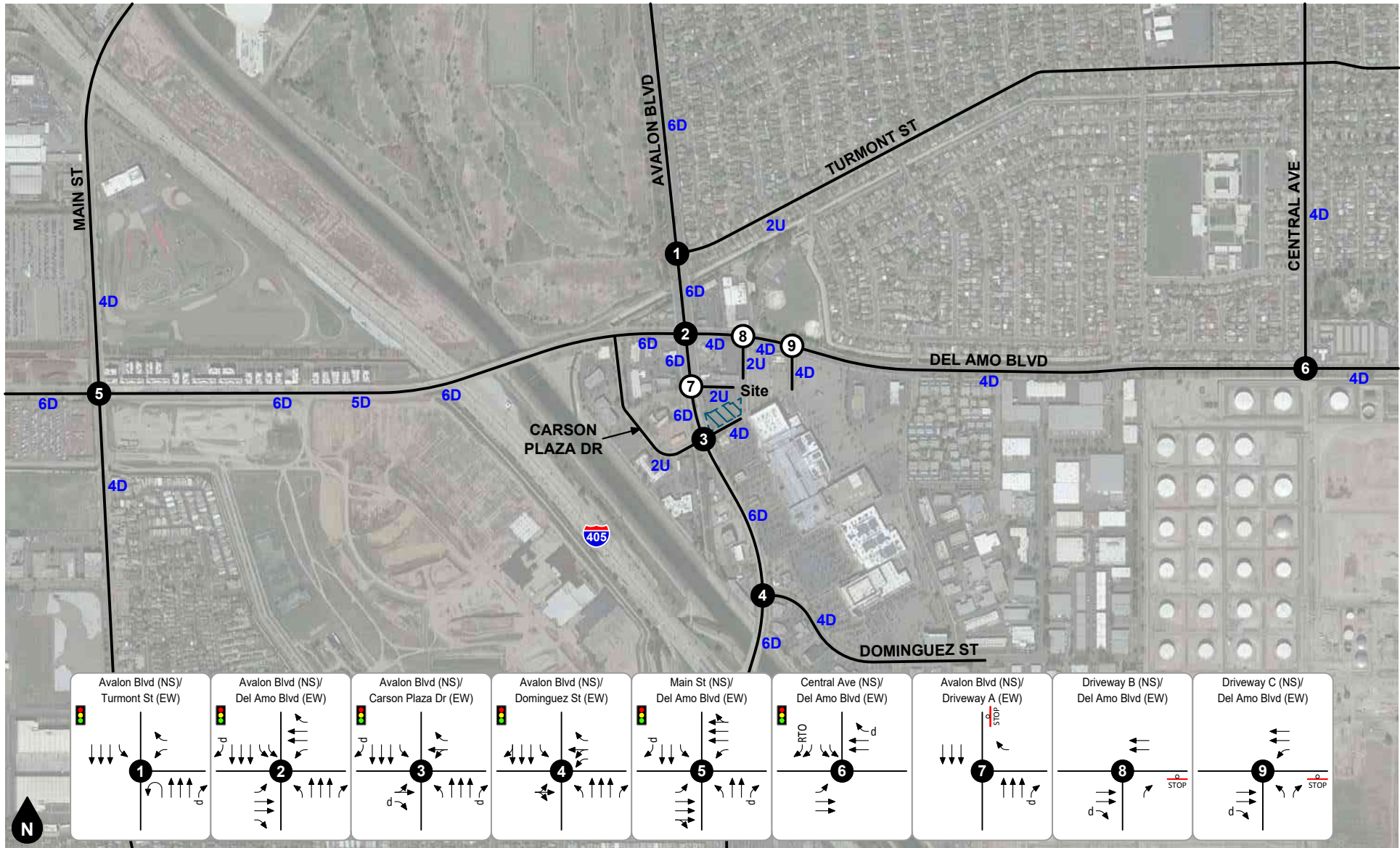
Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. In accordance with the Highway Capacity Manual, overall average intersection delay-LOS are shown for intersections with traffic signal and worst minor street approach or major street left turn movement delay-LOS are shown for intersections with cross street stop control.

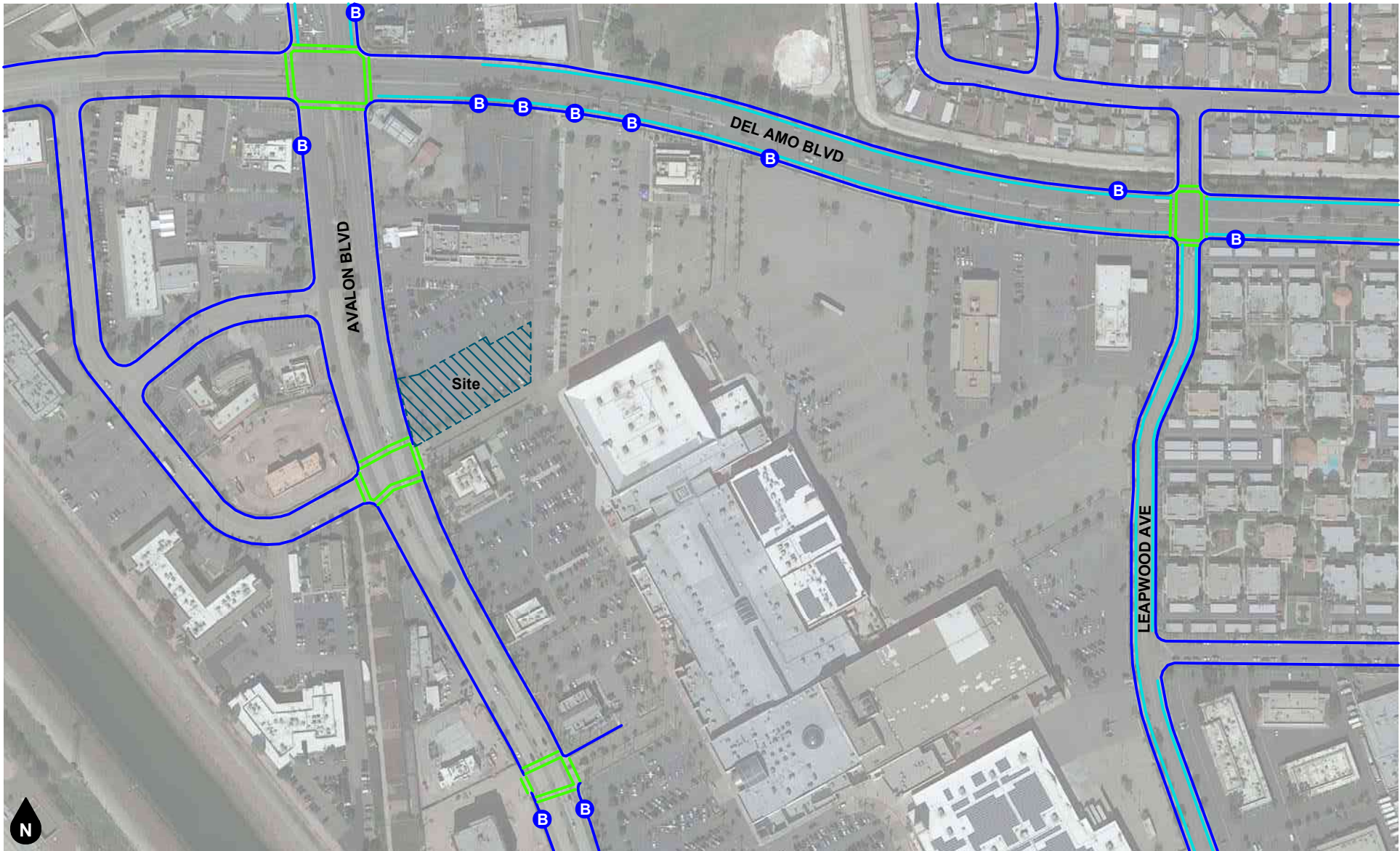
(3) LOS = Level of Service





- Legend**
- Traffic Signal
  - Stop Sign
  - #D #-Lane Divided Roadway
  - #U #-Lane Undivided Roadway
  - Existing Lane
  - RTO Right Turn Overlap
  - d De Facto Right Turn Lane

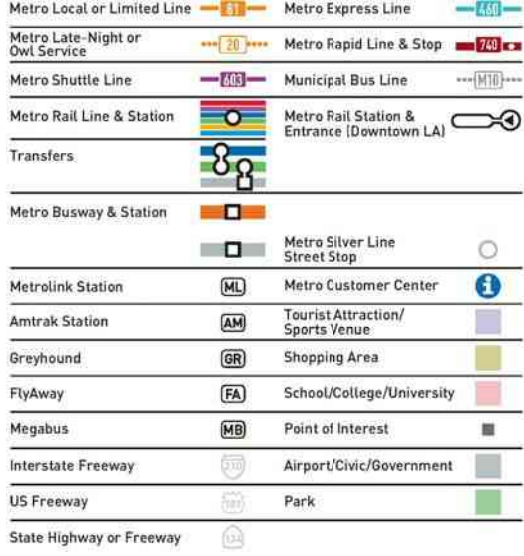
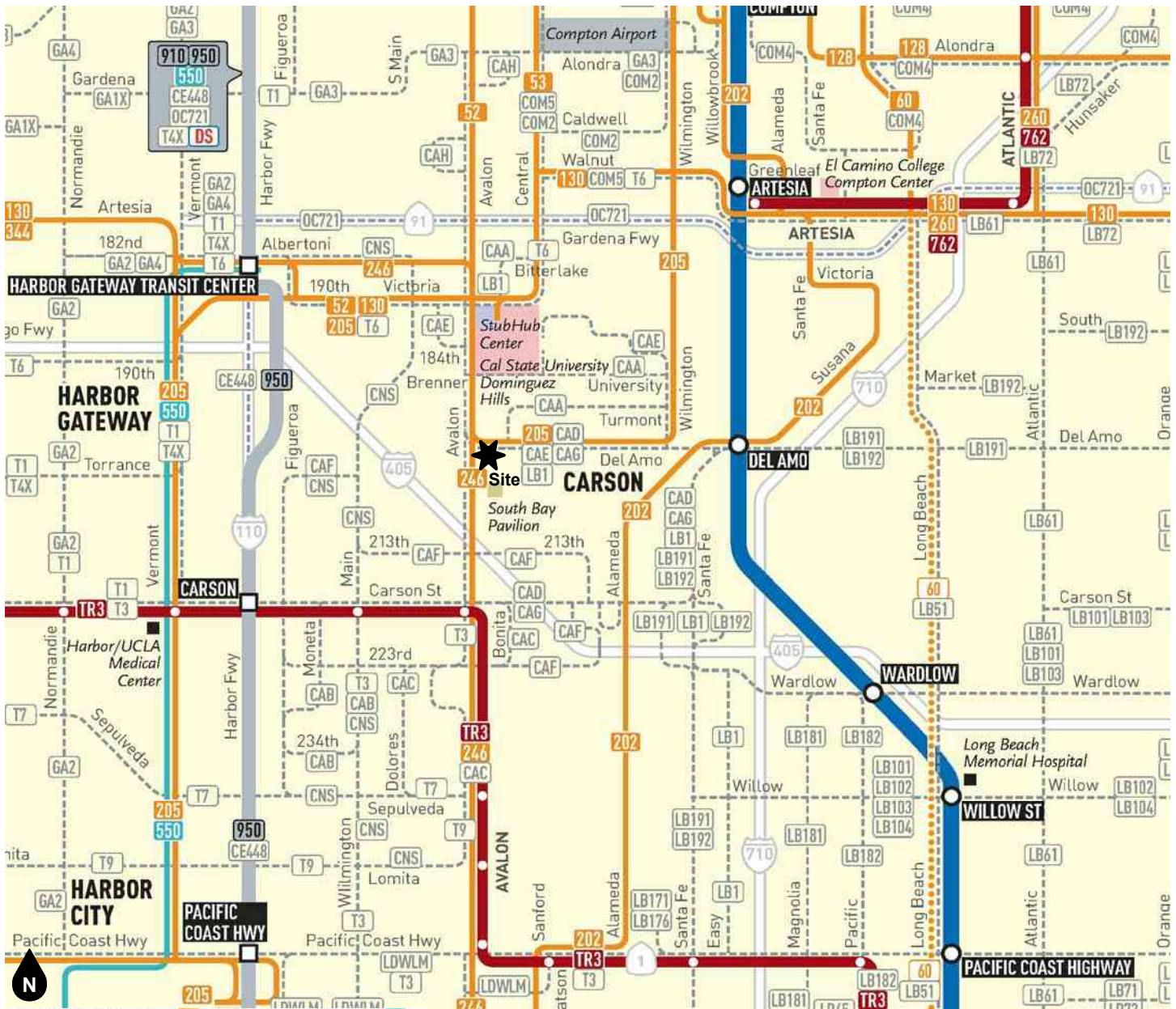
**Figure 4**  
**Existing Lane Geometry and Intersection Traffic Controls**



- Legend**
- Class II Bike Lane
  - Sidewalk
  - Cross Walk
  - B Bus Stop

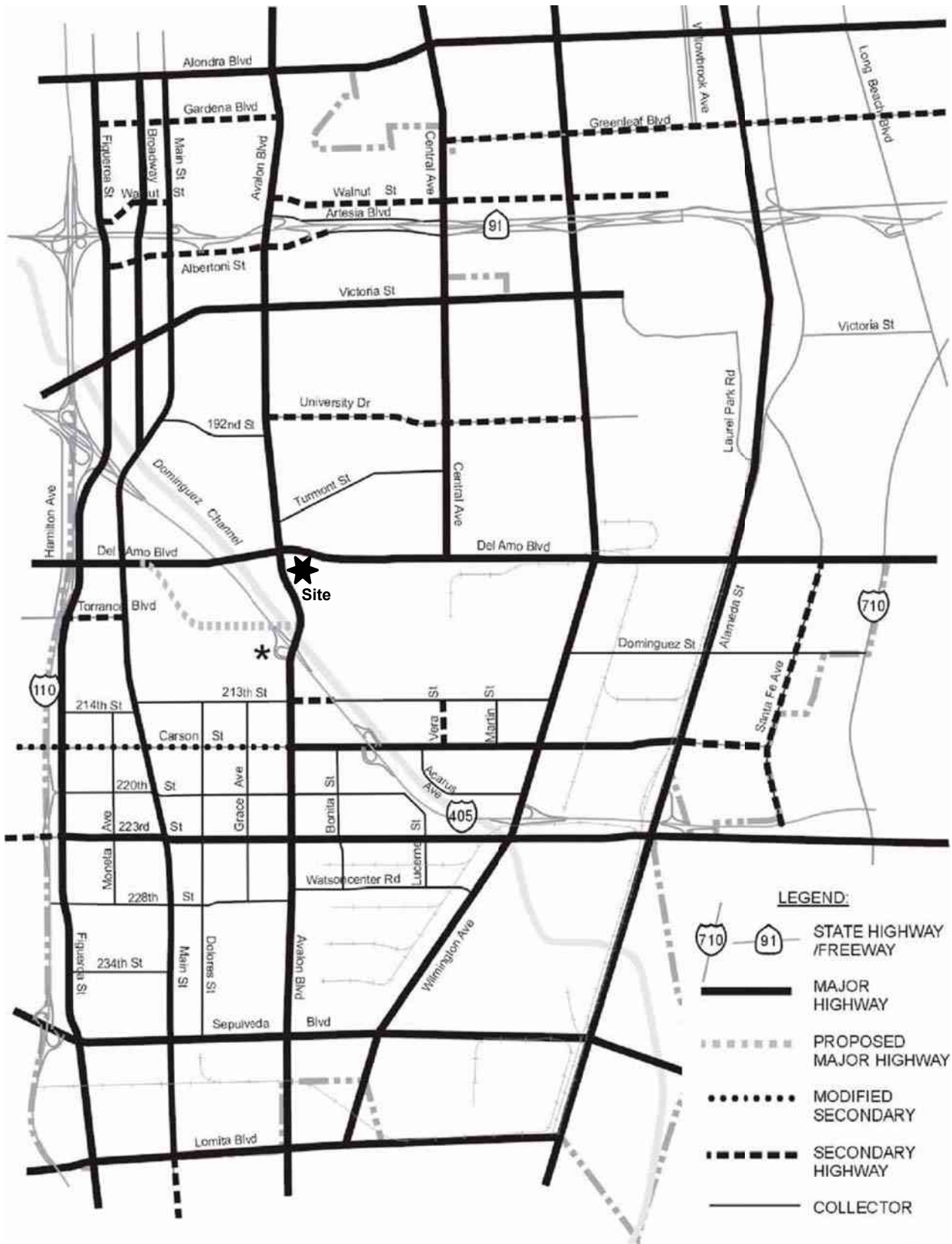
**Figure 5**  
**Existing Pedestrian Facilities**





Source: L.A. Metro

**Figure 6**  
**City of Carson Transit Routes**



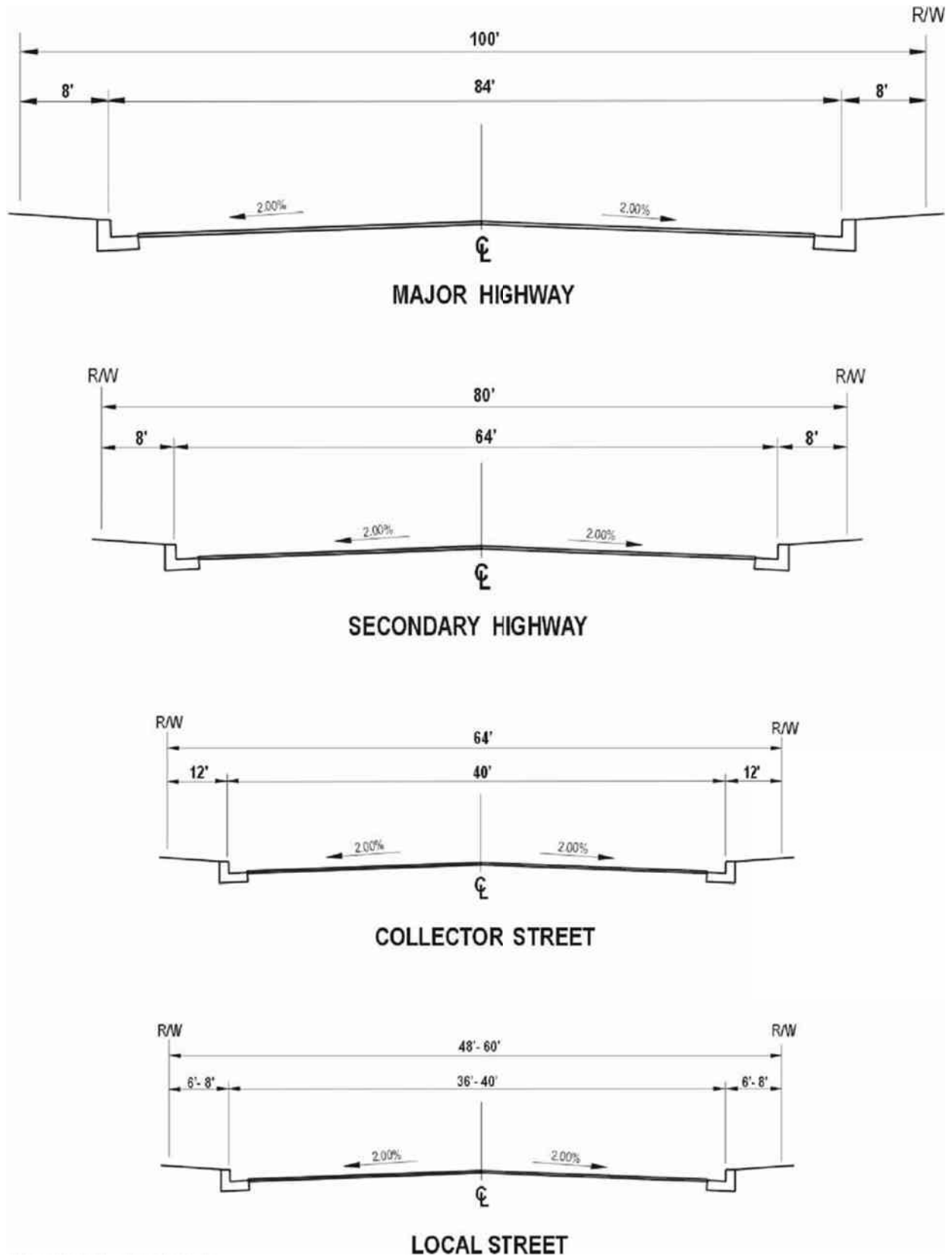
**Figure 7**  
**City of Carson General Plan Circulation Element**

Source: City of Carson



In-N-Out Burger (20700 Avalon Boulevard)  
 Traffic Impact Analysis  
 19398



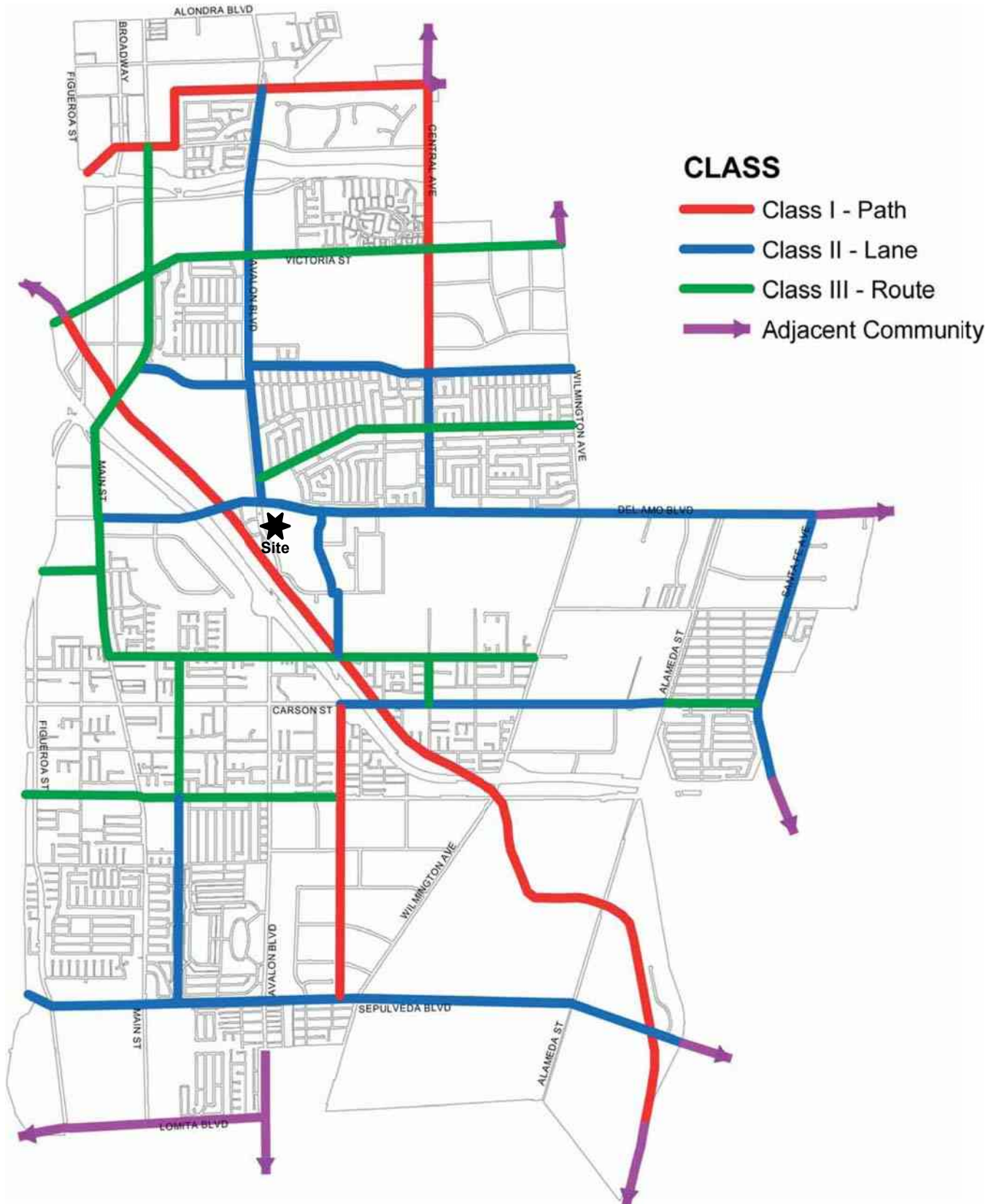


**Figure 8**  
**City of Carson General Plan Roadway Cross-Sections**

Source: City of Carson



In-N-Out Burger (20700 Avalon Boulevard)  
 Traffic Impact Analysis  
 19398



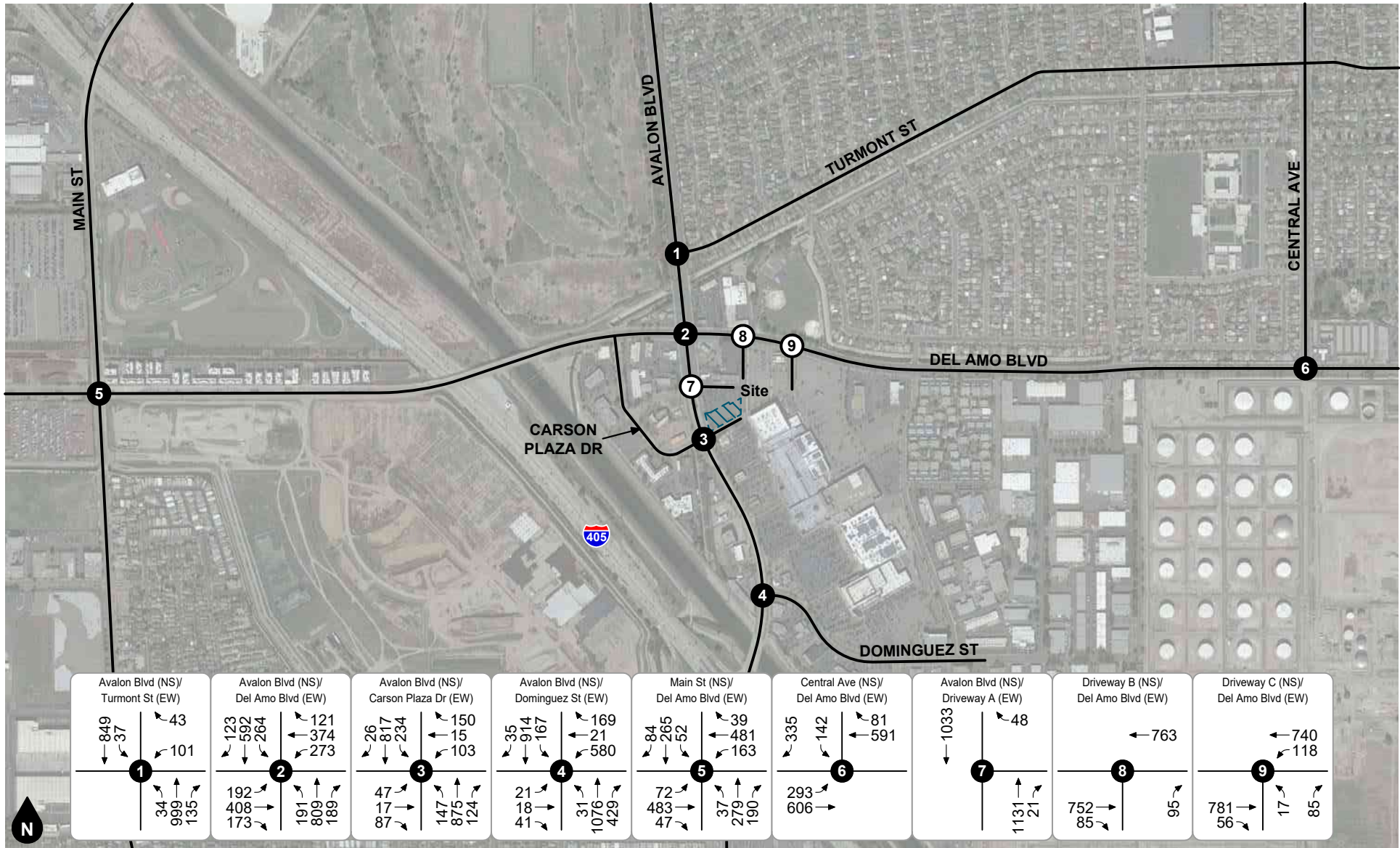
**Figure 9**  
**City of Carson Bicycle Facilities and Pedestrian Trails Master Plan**

Source: City of Carson



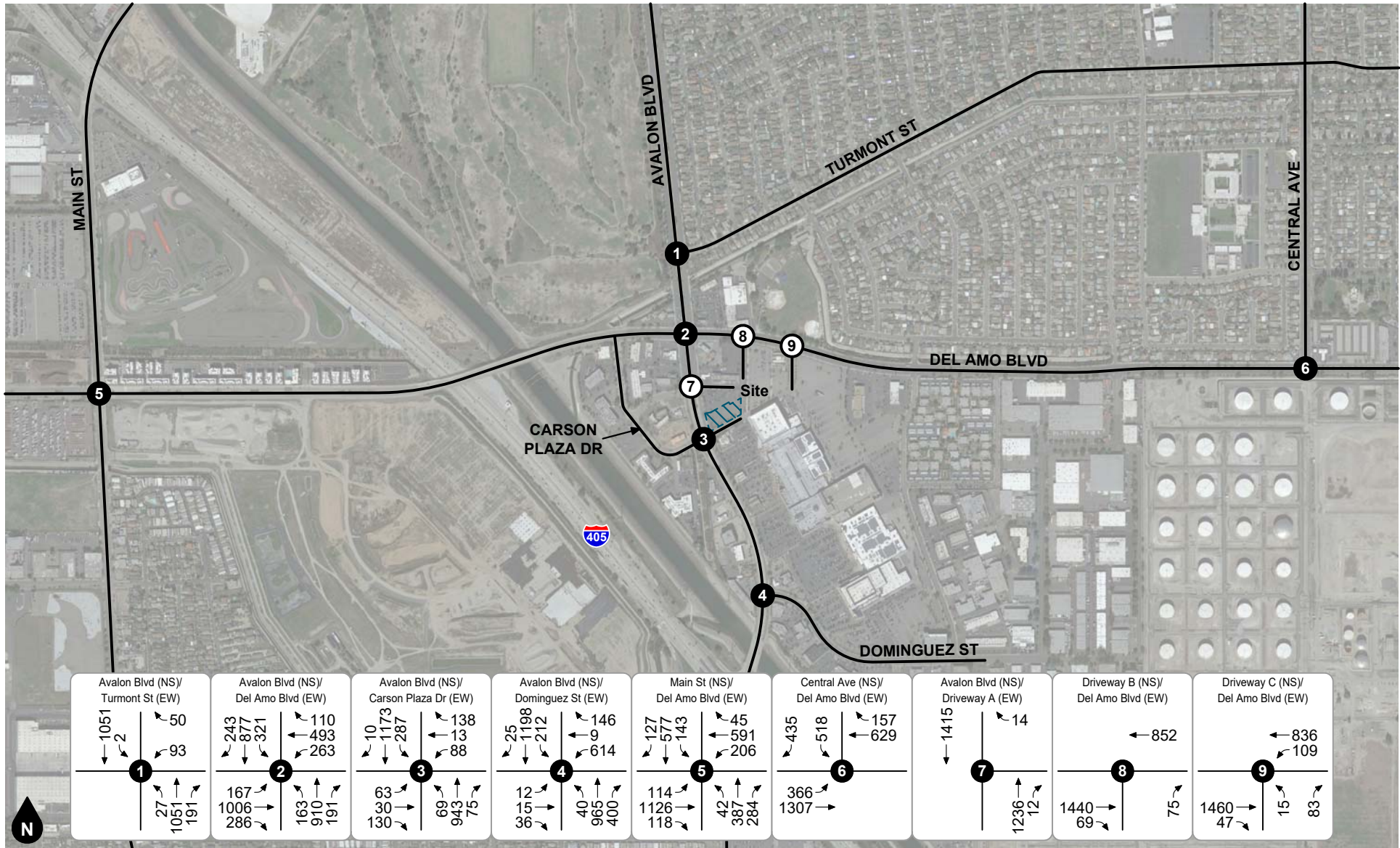
In-N-Out Burger (20700 Avalon Boulevard)  
 Traffic Impact Analysis  
 19398





Legend  
 # Study Intersection  
 # Project Driveway

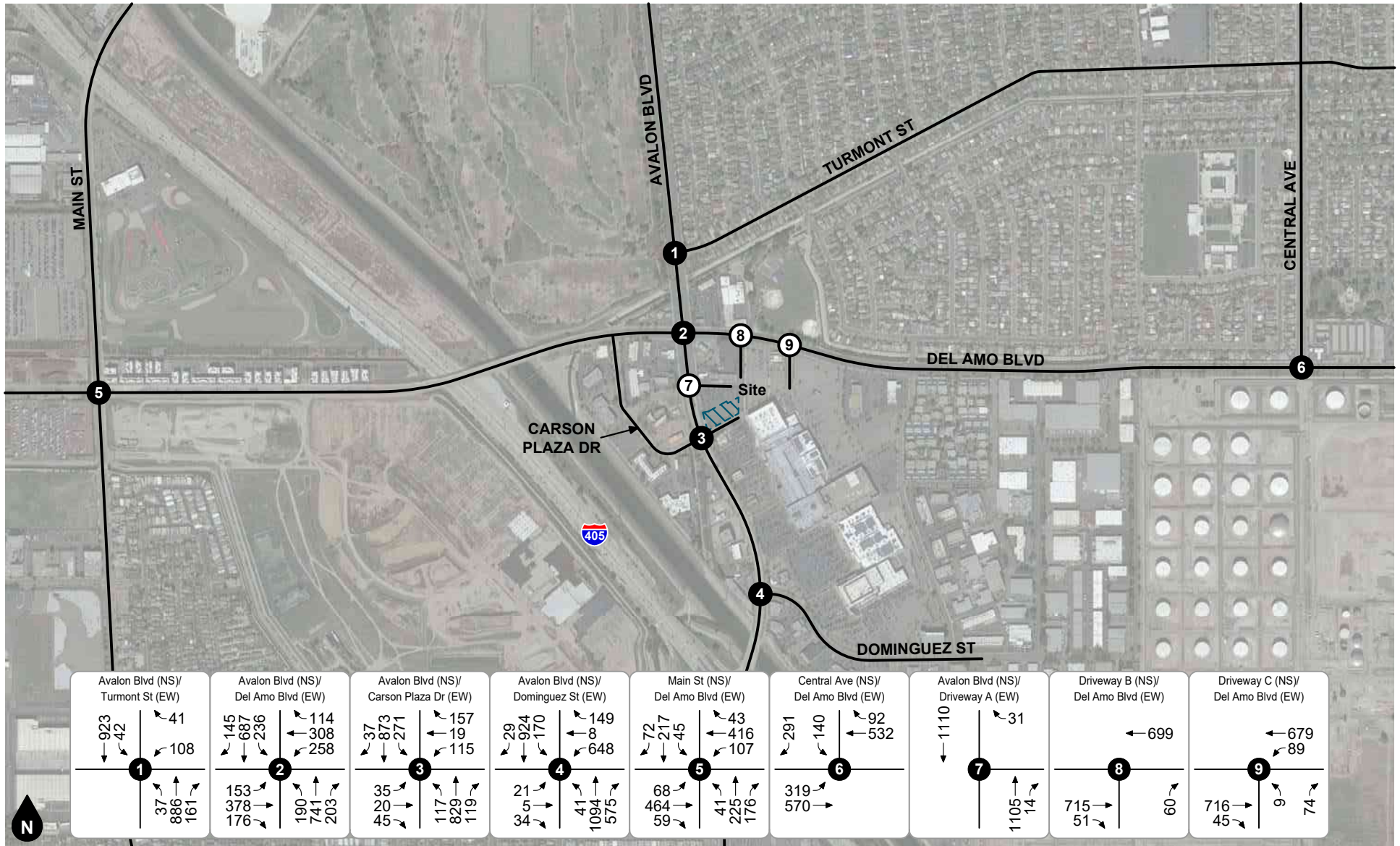
**Figure 10**  
**Existing Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**



Legend  
 # Study Intersection  
 # Project Driveway

**Figure 11**  
**Existing Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**





- Legend
- # Study Intersection
  - # Project Driveway

**Figure 12**  
**Existing Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**

## 4. PROJECT TRIP FORECASTS

---

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

### PROJECT TRIP GENERATION

Table 2 shows the proposed project trip generation forecast based on the average trip generation rates observed at other In-N-Out restaurants. Although the ITE *Trip Generation Manual* contains data for a fast-food restaurant with drive through window land use, In-N-Out is generally understood to generate more trips than the average fast-food restaurant. To provide a conservative analysis, trip generation for the proposed In-N-Out is based on average trip generation rates derived from trip counts of existing In-N-Out restaurants throughout California. Trip count worksheets and trip generation calculations for In-N-Out are contained in the scoping agreement provided in Appendix B.

As shown in Table 2, the proposed project is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour and 115 trips during the weekday PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour.

### Pass-By Trip Adjustments

Land uses such as shopping centers, restaurants, gasoline stations, and convenience stores will often locate next to busy roadways to attract motorists already on the street. Since the trip generation rates contained in the ITE *Trip Generation Handbook* represent vehicles entering and exiting at the site driveway(s), it is appropriate to reduce the initial trip generation forecast by the applicable pass-by trip rate when calculating the net new trips that will be added to the surrounding street system. The project trip generation forecasts shown in Table 2 apply pass-by trip adjustments based upon pass-by rates for a fast-food restaurant with drive through window land use code (ITE 934) from the ITE *Trip Generation Handbook*. For time periods with no pass-by data provided in ITE *Trip Generation Handbook*, pass-by rates were assumed as half of ITE peak hour rate.

### PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Project site access is primarily expected to occur via the following existing driveways providing access for the overall shopping center:

- Avalon Boulevard/Carson Plaza Drive (Study Intersection #3) – signalized, full access driveway.
- Avalon Boulevard/Driveway A (Study Intersection #7) - unsignalized, right-in/right-out only driveway.
- Driveway B/Del Amo Boulevard (Study Intersection #8) - unsignalized, right-in/right-out only driveway.
- Driveway C/Del Amo Boulevard (Study Intersection #9) - unsignalized, full access driveway.

Figure 13 and Figure 14 show the forecast outbound and inbound directional distribution patterns for the project generated trips, respectively. The project trip distribution patterns were determined in consultation with City staff based on review of existing traffic data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project-generated weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Figure 15 through Figure 17.



**Table 2  
Project Trip Generation**

Trip Generation Rates													
Land Use	Source <sup>1</sup>	Unit <sup>2</sup>	Weekday							Saturday			
			Mid-day Peak Hour			PM Peak Hour			Daily Rate	Mid-day Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate		% In	% Out	Rate	
In-N-Out Burger Restaurant	[a]	TSF	51%	49%	82.92	52%	48%	59.24	773.38	51%	49%	84.66	768.35

Trips Generated													
Land Use	Quantity	Unit <sup>2</sup>	Weekday							Saturday			
			Mid-day Peak Hour			PM Peak Hour			Daily	Mid-day Peak Hour			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
In-N-Out Burger Restaurant	3,885	TSF	164	158	322	121	109	230	3,005	167	162	329	2,985
Pass-by Trips (25% MD/Daily; 50% PM)	[b]		-41	-39	-80	-60	-55	-115	-751	-41	-41	-82	-746
<b>PROJECT TRIPS GENERATED</b>			<b>123</b>	<b>119</b>	<b>242</b>	<b>61</b>	<b>54</b>	<b>115</b>	<b>2,254</b>	<b>126</b>	<b>121</b>	<b>247</b>	<b>2,239</b>

Notes:

(1) Sources:

[a] = In-N-Out Burger restaurant trip generation determined from trip counts surveys (see Appendix B). In-N-Out closed during AM peak hours.

[b] = ITE *Trip Generation Handbook* (3rd Edition, 2017). For time periods with no pass-by data provided in ITE *Trip Generation Handbook*, pass-by rates are assumed as half of ITE peak hour rate.

(2) TSF = Thousand Square Feet



Legend  
 ← 10% Percent From Project

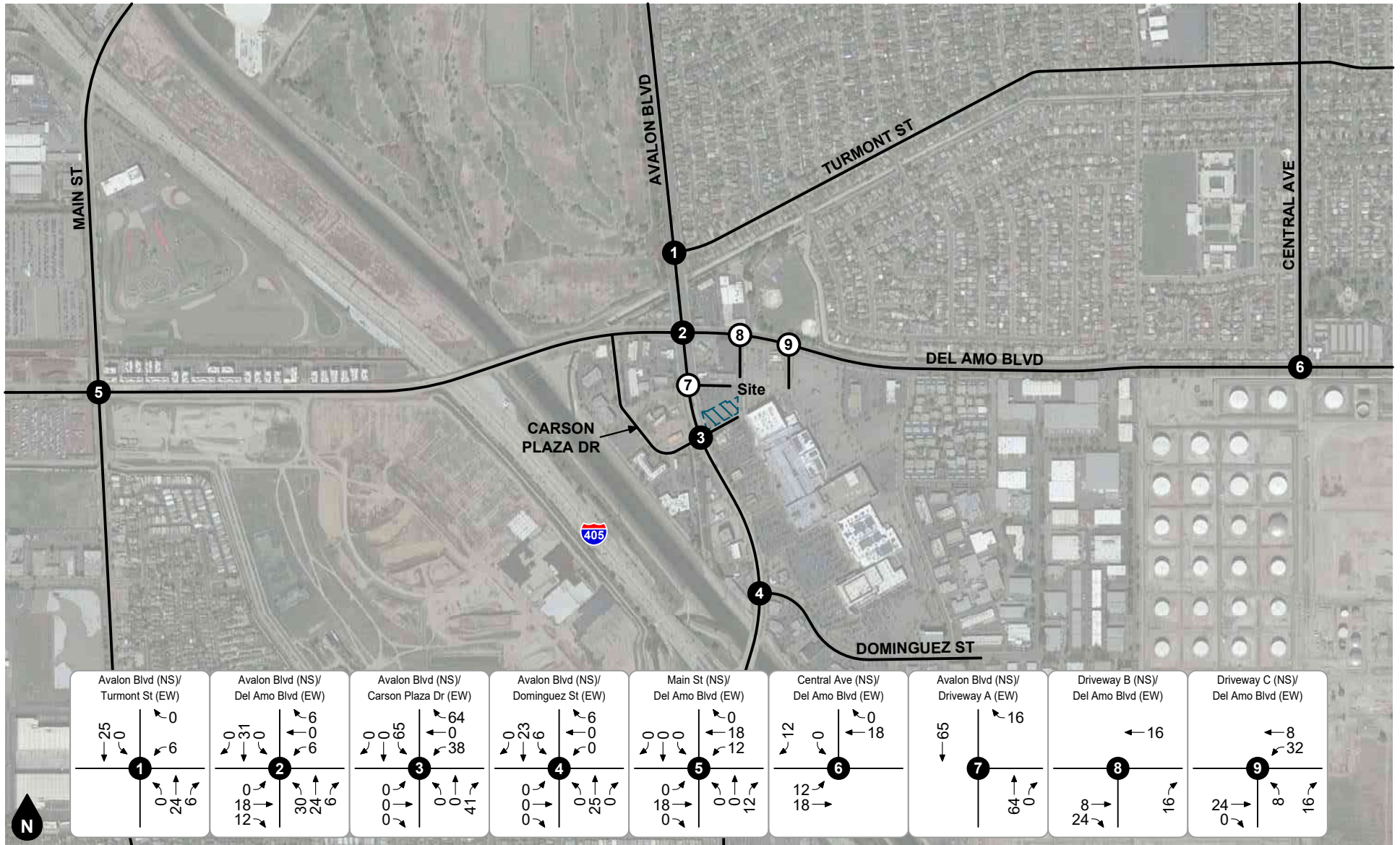
**Figure 13**  
**Project Trip Distribution (Outbound)**





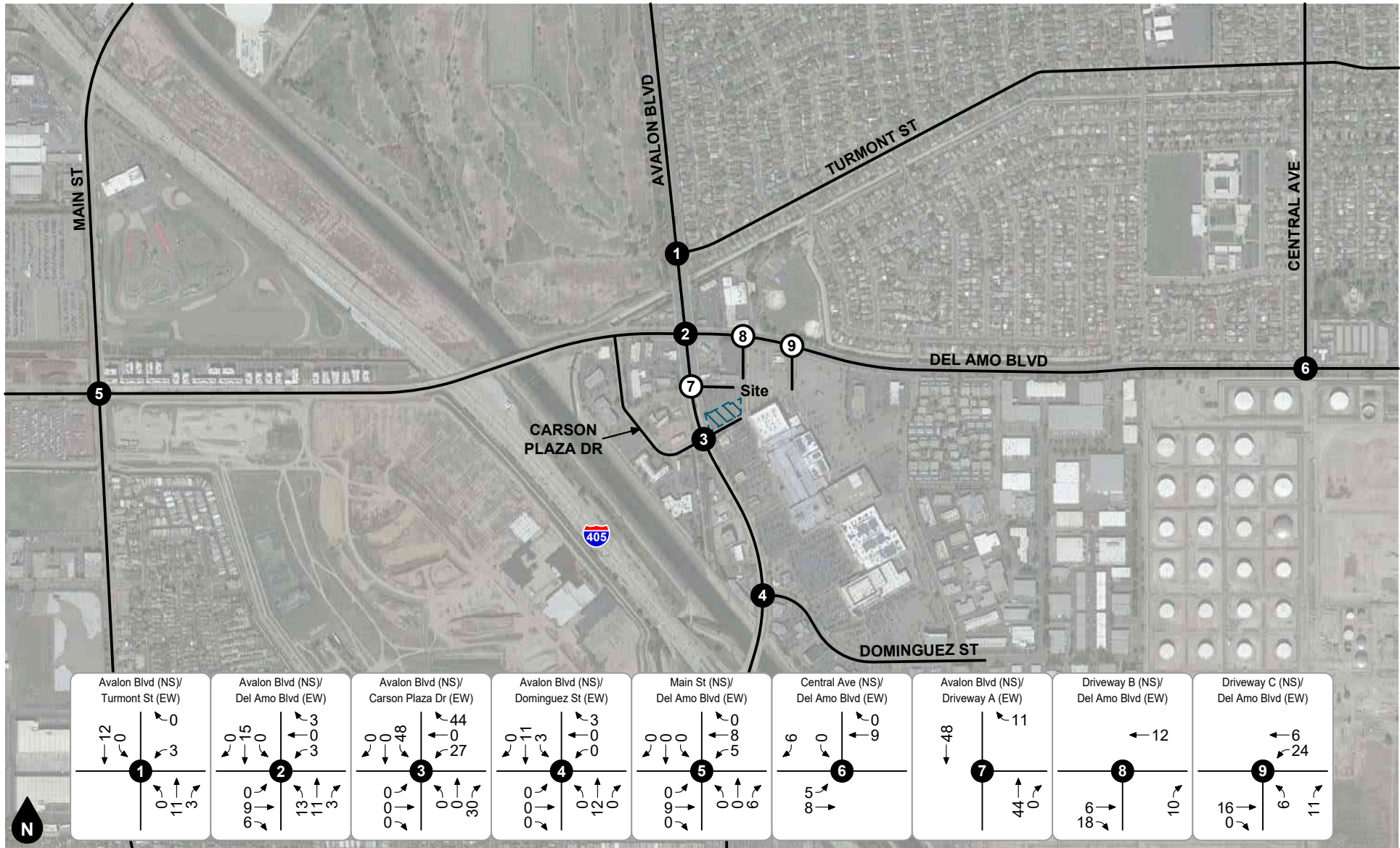
Legend  
 ← 10% Percent To Project

**Figure 14**  
**Project Trip Distribution (Inbound)**

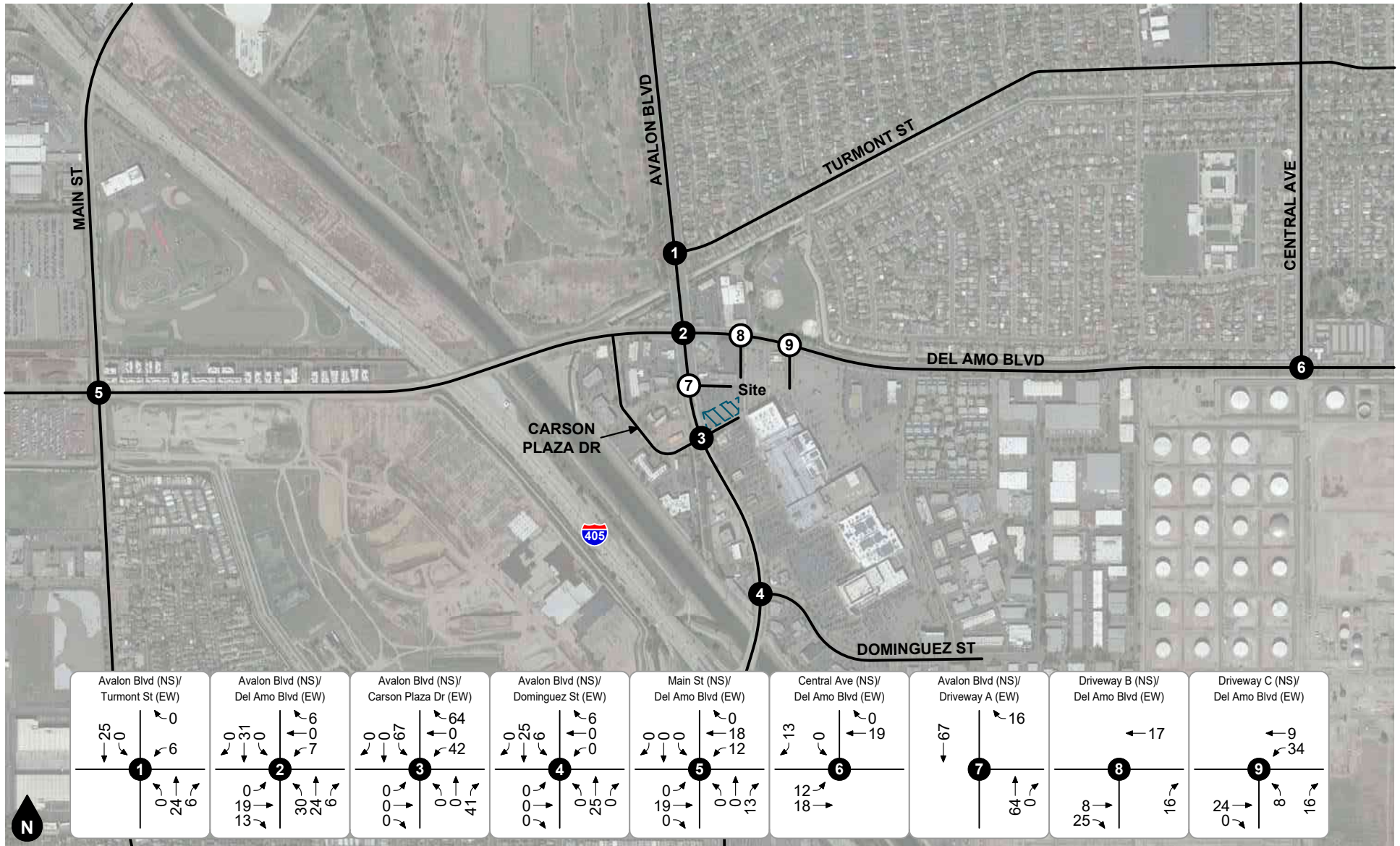


**Figure 15**  
**Project Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**





**Figure 16**  
**Project Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**



**Figure 17**  
**Project Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**



## 5. FUTURE VOLUME FORECASTS

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This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

### **METHOD OF PROJECTION**

To assess future conditions, existing volumes were combined with project trips, ambient growth, and other development trips. The project completion year for analysis purposes in this report is 2024.

#### **Ambient Growth**

To account for ambient growth on roadways, existing (year 2021) volumes were increased by a growth rate of one percent (1.0%) per year over a three-year period. This equates to a total growth factor of approximately 1.03. This is a conservative assumption since the ambient growth was applied to all movements at the study intersections.

#### **Other Developments**

To account for growth associated with other development projects, trips generated by other pending or approved but unconstructed developments in the City of Carson were reviewed and added to the study area as appropriate. The other development trip generation summary is shown in Table 3. The regional ambient growth is assumed to account for any additional trips generated by other developments not specifically listed in Table 3. Figure 18 shows the other development location map.

Figure 19 through Figure 21 show the forecast for weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes for trips generated by other developments.

### **ANALYSIS SCENARIO VOLUMES**

#### **Opening Year (2024) Base Without Project**

The Opening Year (2024) Base Without Project volume forecast was developed by adding ambient growth to existing (year 2021) volumes. Opening Year (2024) Base Without Project weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Figure 22 through Figure 24.

#### **Opening Year (2024) Base With Project**

The Opening Year (2024) Base With Project volume forecast was developed by adding ambient growth and project-generated trips to existing (year 2021) volumes. Opening Year (2024) Base With Project weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Figure 25 through Figure 27.

#### **Opening Year (2024) Without Project**

The Opening Year (2024) Without Project volume forecast was developed by applying the ambient growth and trips generated by other developments to existing (year 2021) volumes. Opening Year (2024) Without Project weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Figure 28 through Figure 30.

### **Opening Year (2024) With Project**

The Opening Year (2024) With Project volume forecast was developed by adding project-generated trips to the Opening Year (2024) Without Project volumes. Opening Year (2024) With Project weekday mid-day, weekday PM, and Saturday mid-day peak hour intersection turning movement volumes are shown on Figure 31 through Figure 33.



**Table 3 (1 of 3)**  
**Other Development Trip Generation**

ID	Other Development Project Name	Land Use	Quantity	Units <sup>1</sup>	Source <sup>2</sup>	Weekday						Saturday				
						Mid-Day Peak Hour			PM Peak Hour			Daily	Mid-day Heak Hour			Daily
						In	Out	Total	In	Out	Total		In	Out	Total	
C1	Panattoni Project	Mixed Use Industrial	292.400	TSF	[a]	83	25	108	34	83	117	788	65	63	128	842
C2	AL2 Warehouse- 400KSF	Warehouse	411.840	TSF	[b]	25	8	33	12	29	41	577	25	24	49	387
C3	Vera Lane Condos- 18DU <sup>3</sup>	Multi-family Housing	5	DU	ITE 220	1	1	2	2	1	3	37	2	2	4	41
C4	Carson Trucking Project - Linear Yd	Truck Trailer Parking	565	Stalls	[c]	50	50	100	50	50	100	1,750	-	-	-	-
C5	Evolve South Bay Apartments	Multi-family Housing	300	DU	ITE 220	32	106	138	106	62	168	2196	105	105	210	2442
		Shopping Center	12.925	TSF	ITE 820	8	4	12	24	25	49	488	30	28	58	596
		Subtotal				40	110	150	130	87	217	2684	135	133	268	3038
C6	Figueroa 14-AC Business Park	Business Park	267.000	TSF	ITE 770	65	42	107	52	60	112	3321	12	12	24	684
C7	Belshaw Warehouse Addition	Warehouse	2.975	TSF	ITE 150	0	1	1	0	1	1	5	0	0	0	0
C8	Carson Lofts	Multi-family Housing	19	DU	ITE 220	2	7	9	7	4	11	139	7	6	13	155
C9	Chevron Gas Use Expansion	Service Station w/ Convenience Market	2	VFP	ITE 945	13	12	25	14	14	28	411	19	20	39	363
		Pass-by (62%MD; 56%PM;28%Daily/Sat)			ITE 945	-8	-7	-16	-8	-8	-16	-115	-5	-6	-11	-102
		Automated Car Wash	1	CWT	ITE 948	17	17	34	39	39	78	9	19	22	41	1851
		Subtotal		-		22	22	44	45	45	90	305	33	36	69	2112
C10	Sandhill Industrial (General Mills, Yoplait Facility)	Manufacturing	27.000	TSF	ITE 140	13	4	17	6	12	18	106	13	12	25	173
C11	Imperial Avalon Specific Plan	Multi-family Housing	1060	DU	ITE 220	112	376	488	374	220	594	7759	371	371	742	8628
		Senior Adult Housing - Attached	180	DU	ITE 252	13	23	36	26	21	47	666	37	22	59	581
		Fast Casual Restaurant	7.152	TSF	ITE 930	10	5	15	56	45	101	2254	134	109	243	2279
		Pass-by (21.5%MD; 43%PM;21.5%Daily/Sat)		ITE 932	ITE 932	-2	-1	-3	-24	-19	-43	-485	-29	-23	-52	-490
		Subtotal		-		135	404	539	456	286	742	10679	542	502	1044	11488
C12	Torrance/Main Specific Plan	Multi-family Housing	356	DU	ITE 220	38	126	164	126	73	199	2606	125	124	249	2898
C13	Shell CNG Dispensing Station	CNG Fueling Station	3	VFP	ITE 945	19	18	37	21	21	42	616	29	29	58	545
C14	Home2 by Hilton Hotel	Hotel	118	RM	ITE 310	33	22	55	36	35	71	986	48	37	85	966

**Table 3 (2 of 3)**  
**Other Development Trip Generation**

ID	Other Development Project Name	Land Use	Quantity	Units <sup>1</sup>	Source <sup>2</sup>	Weekday						Saturday				
						Mid-Day Peak Hour			PM Peak Hour			Daily	Mid-day Peak Hour			Daily
						In	Out	Total	In	Out	Total		In	Out	Total	
C15	Carson Town Center - New retail	Health/Fitness Club	29.487	TSF	ITE 492	20	19	39	58	44	102	1017	46	48	94	401
		Fast Casual Restaurant	54.620	TSF	ITE 930	76	37	113	424	348	772	17215	1022	836	1858	17403
		<i>Pass-by (21.5%MD; 43%PM;21.5%Daily/Sat)</i>			ITE 932	-16	-8	-24	-182	-150	-332	-3701	-220	-180	-399	-3742
		Building Materials/Lumber	90.789	TSF	ITE 812	90	53	143	88	99	187	1639	444	426	870	4686
		Shopping Center	-174.9	TSF	ITE 820	-102	-62	-164	-320	-346	-666	-6602	-409	-378	-787	-8066
		<i>Pass-by (26%MD/Sat; 34%PM;26%Daily)</i>			ITE 820	27	16	43	109	118	226	1122	106	98	205	2097
	Subtotal		-		94	55	149	176	113	289	10690	990	851	1840	12780	
C16	Carson Arts Project	Multi-family Housing	46	DU	ITE 220	5	16	21	16	10	26	337	16	16	32	374
C17	The District at South Bay 2021	Multi-family Housing	1250	DU	ITE 220	132	443	575	441	259	700	9150	438	437	875	10175
		Shopping Center	696.500	TSF	ITE 820	406	249	655	1274	1380	2654	26293	1630	1504	3134	32123
		<i>Pass-by (17%MD/Sat; 34%PM;26%Daily)</i>			ITE 820	-69	-42	-111	-433	-469	-902	-4470	-424	-391	-815	-8352
		High-Turnover (Sit-Down) Restaurant	15.000	TSF	ITE 932	82	67	149	91	56	147	1683	86	82	168	1836
		<i>Pass-by (21.5%MD; 43%PM;21.5%Daily/Sat)</i>			ITE 932	-18	-14	-32	-39	-24	-63	-362	-18	-18	-36	-395
	General Light Industrial	1567.09	TSF	ITE 110	965	132	1097	128	859	987	7773	302	341	643	3119	
	Subtotal		-		1498	834	2333	1462	2061	3522	40067	2014	1955	3969	38506	
C18	223rd Condos	Multi-family Housing	9	DU	ITE 220	1	3	4	3	2	5	66	3	3	6	73
C19	Cambria Court Residential Project	Multi-family Housing	35	DU	ITE 220	4	12	16	12	8	20	256	12	13	25	285
C20	Carson Upton/Brandywine	Multi-family Housing	36	DU	ITE 220	4	13	17	13	7	20	264	13	12	25	293
C21	Pug Nation Rescue	Warehouse	3.854	TSF	ITE 150	1	0	1	0	1	1	7	0	0	0	1
C22	Birch Specific Plan	Multi-family Housing	32	DU	ITE 220	3	12	15	11	7	18	234	11	11	22	260
C23	Carson Landing/Brandywine	Multi-family Housing	175	DU	ITE 220	19	62	81	62	36	98	1281	61	62	123	1425
C24	20915 Lambertson Ave Truck Yard	Truck Trailer Parking	42	Stalls	[d]	11	21	32	14	18	32	293	-	-	-	-
C25	2315 E Dominguez St Renovation	Tenant Improvements	13.000	-	-	-	-	-	-	-	-	-	-	-	-	-
C26	Chick-Fil-A Project	Fast-Food Drive-Thru	4.796	TSF	ITE 934	98	95	193	81	76	157	2259	134	129	263	2955
		<i>Pass-by (49%MD; 50%PM;25%Daily/Sat)</i>			ITE 934	-48	-47	-95	-41	-38	-79	-565	-34	-32	-66	-739
		Subtotal	4.796	TSF	ITE 934	50	48	98	41	38	79	1694	101	97	197	2216

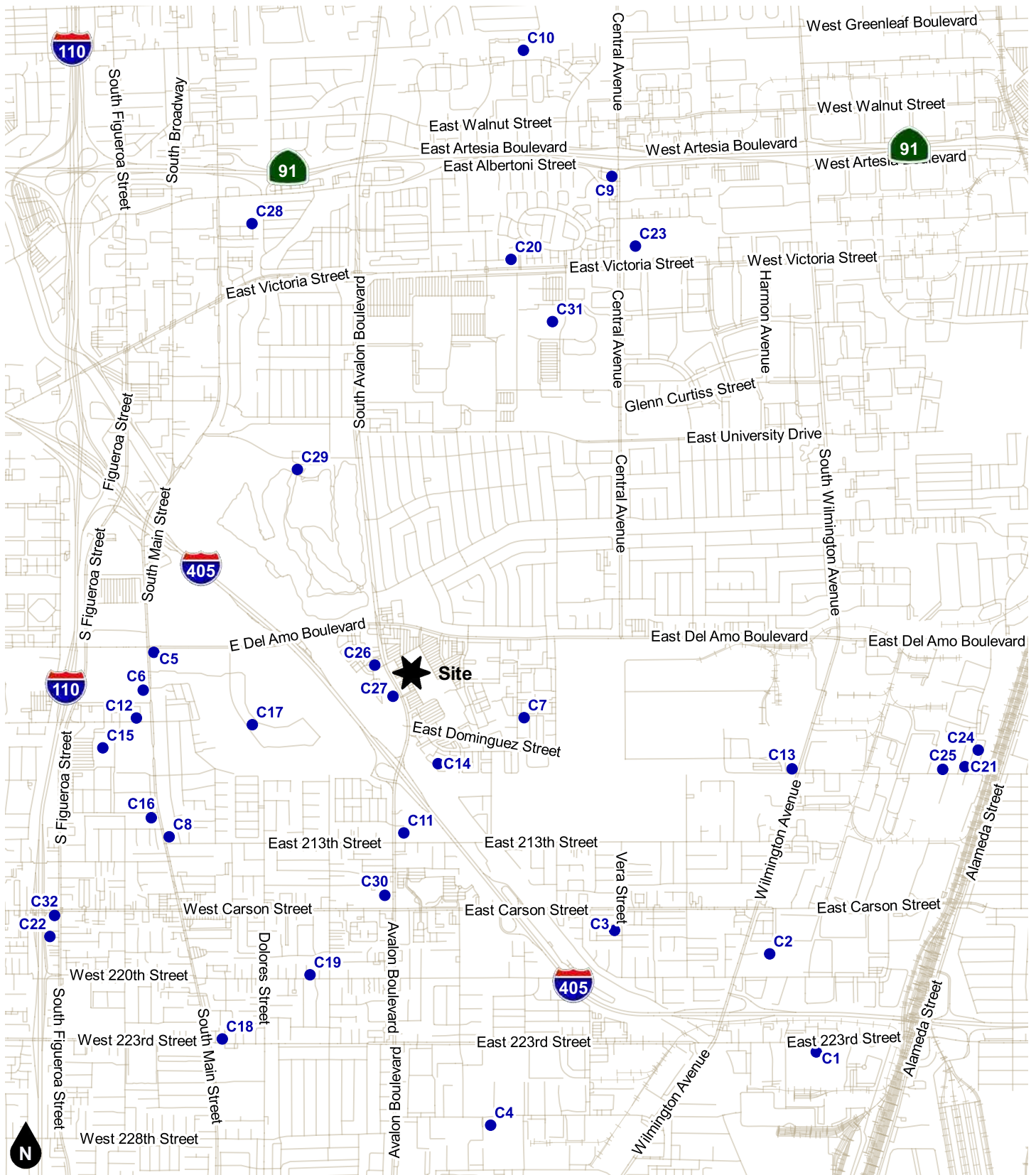


**Table 3 (3 of 3)**  
**Other Development Trip Generation**

ID	Other Development Project Name	Land Use	Quantity	Units <sup>1</sup>	Source <sup>2</sup>	Weekday						Saturday				
						Mid-Day Peak Hour			PM Peak Hour			Daily	Mid-day Peak Hour			Daily
						In	Out	Total	In	Out	Total		In	Out	Total	
C27	Raising Cane's Restaurant	Fast-Food Drive-Thru	3.234	TSF	ITE 934	66	64	130	55	51	106	1523	90	87	177	1993
		<i>Pass-by (49%MD; 50%PM;25%Daily/Sat)</i>			ITE 934	-32	-31	-64	-28	-26	-53	-381	-23	-22	-44	-498
		Subtotal	3.234	TSF	ITE 934	66	64	130	55	51	106	1523	90	87	177	1993
C28	California Pak	General Light Industrial	101.270	TSF	ITE 110	62	9	71	8	56	64	502	20	22	42	202
C29	Kimmelman Project	Mixed Use Recreational		-	[e]	105	83	188	244	192	436	3808	449	346	795	796
C30	Union South Bay - Mixed Use	Multi-family Housing	357	DU	ITE 220	38	126	164	126	74	200	2613	125	125	250	2906
		Supermarket	15.000	TSF	ITE 850	34	23	57	71	68	139	1602	79	76	155	2664
		Pharmacy/Drugstore	8.000	TSF	ITE 880	15	9	24	33	35	68	721	42	43	85	0
		Fast Casual Restaurant	5.0000	TSF	ITE 930	7	3	10	39	32	71	1576	94	76	170	1593
		<i>Pass-by (21.5%MD; 43%PM;21.5%Daily/Sat)</i>			ITE 942	-2	-1	-2	-17	-14	-31	-339	-20	-16	-37	-342
		Shopping Center	4.000	TSF	ITE 820	2	2	4	7	8	15	151	9	9	18	184
	<i>Pass-by (26%MD/Sat; 34%PM;26%Daily)</i>			ITE 820	-1	-1	-1	-2	-3	-5	-26	-2	-2	-5	-48	
	Subtotal			-		94	162	256	257	201	457	6298	326	310	637	6957
C31	CSU Dominguez Hills	University/College	107.600	TSF	ITE 550	90	27	117	40	86	126	2802	0	0	0	0
		Student Housing	2000	RSD	ITE 226	107	153	260	280	280	560	7300	350	350	700	8140
		Retail Estimated	15.000	TSF	ITE 820	9	5	14	27	30	57	566	35	33	68	692
		<i>Pass-by (17%MD/Sat; 34%PM;26%Daily)</i>			ITE 820	-2	-1	-2	-9	-10	-19	-96	-9	-9	-18	-180
		Business Park Est	70.000		ITE 770	17	11	28	14	15	29	871	3	3	6	179
	Subtotal					221	195	417	352	401	753	11443	379	377	756	8831
C32	Veterans Village Apt	Multi-family Housing	51	DU	ITE 220	5	18	23	18	11	29	373	18	18	36	415
<b>TOTAL OTHER DEVELOPMENT TRIPS</b>						<b>2,676</b>	<b>2,286</b>	<b>4,962</b>	<b>3,464</b>	<b>3,799</b>	<b>7,262</b>	<b>97,437</b>	<b>5,211</b>	<b>4,850</b>	<b>10,062</b>	<b>91,779</b>

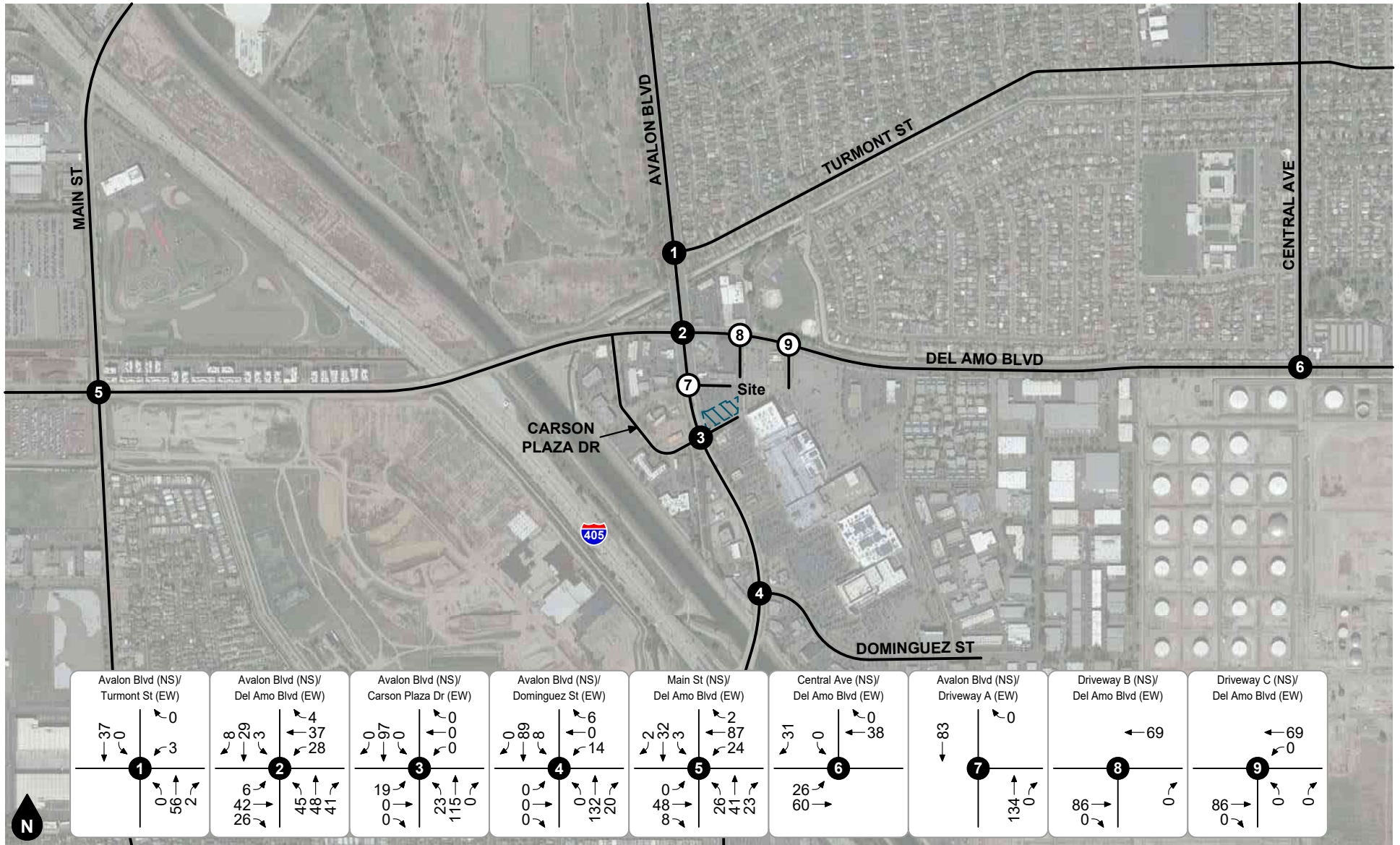
Notes:

- (1) DU = Dwelling Units; TSF = Thousand Square Feet; FP = Fuel Position.
- (2) Source: ITE = Institute of Transportation Engineers *Trip Generation Manual* (10th Edition, 2017); ### = Land Use Code
  - [a] = Panattoni Project Traffic Impact Analysis, (Ganddini Group, June 3, 2020).
  - [b] = AL2 Carson Warehouse Traffic Impact Analysis, (Urban Crossroads, July 22, 2016).
  - [c] = Traffic Impact Study Carson Truck Operations Project for Linear Properties (Kimley-Horn, June, 2018).
  - [d] = Highline Truck Yard Trip Generation Memorandum, (Dudek, August 13, 2019).
  - [e] = Carol Kimmelman Athletic and Academic Campus Project Draft EIR, (Dudek, May 2019).
- (3) Vera Lane, 18-unit condominium complex, construction complete. The number of dwelling units and trips are reduced to an estimated 75% occupancy.



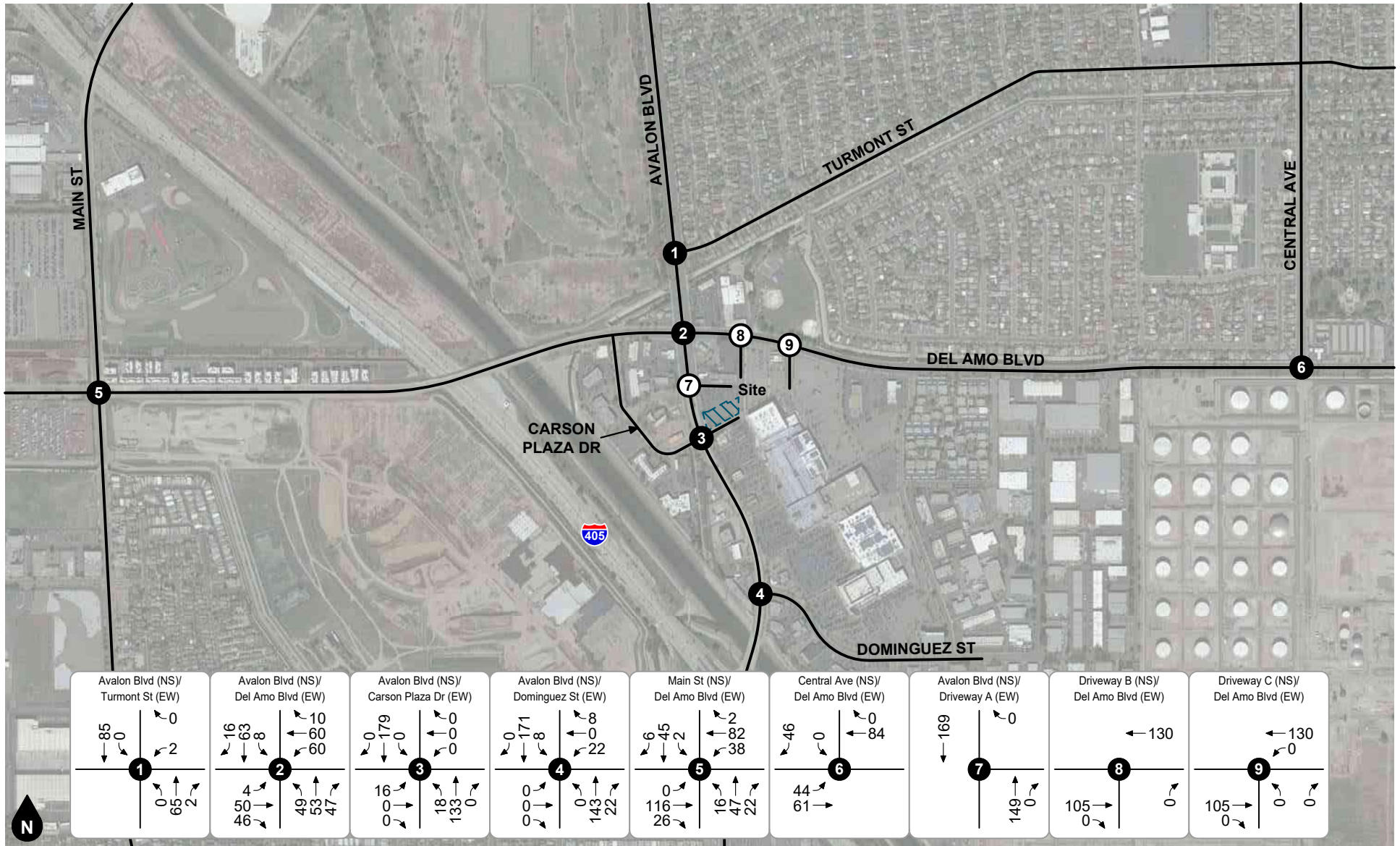
**Figure 18**  
**Other Development Location Map**





- Legend
- # Study Intersection
  - # Project Driveway

**Figure 19**  
**Other Development Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**

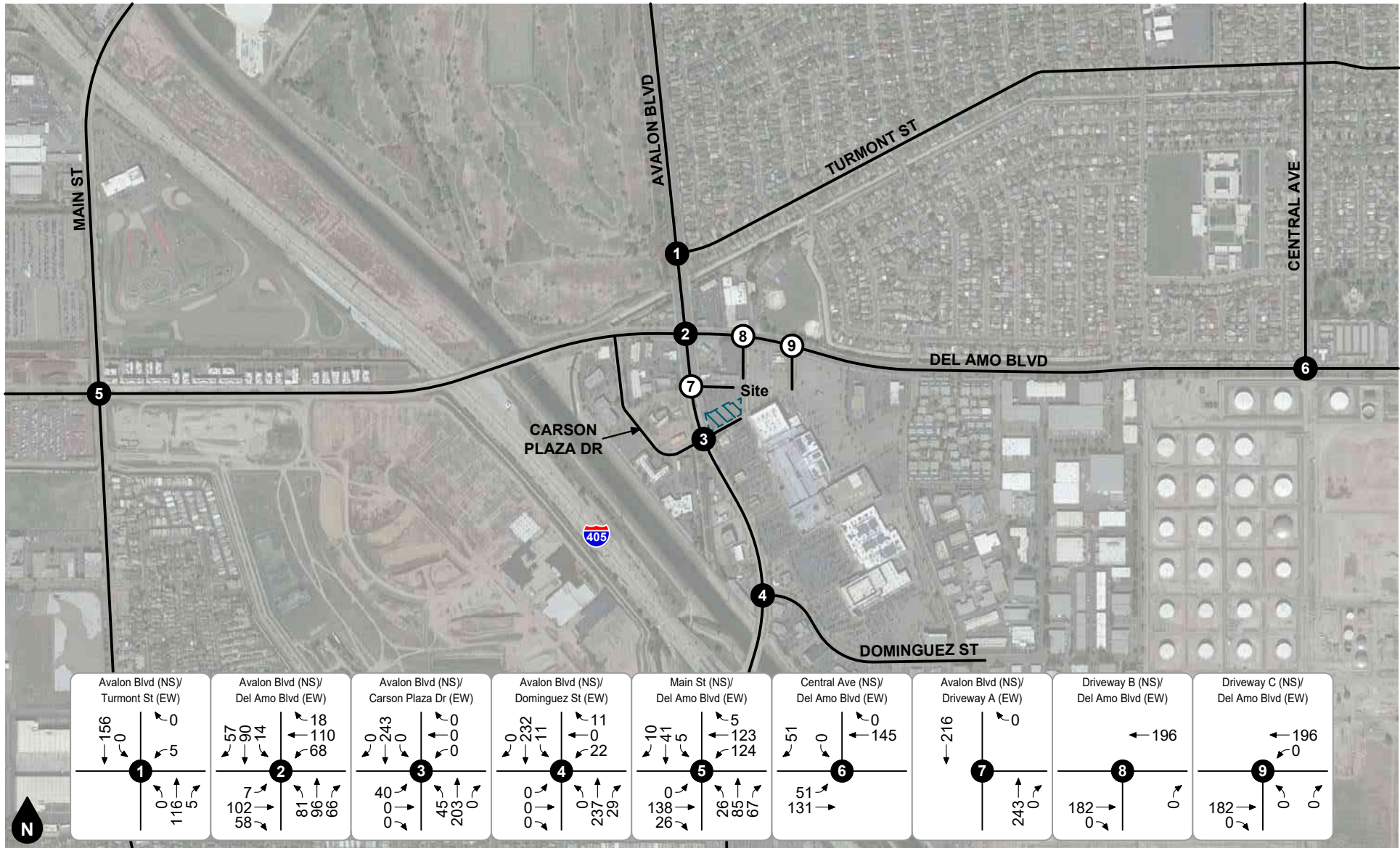


Legend

- # Study Intersection
- # Project Driveway

**Figure 20**  
**Other Development Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**

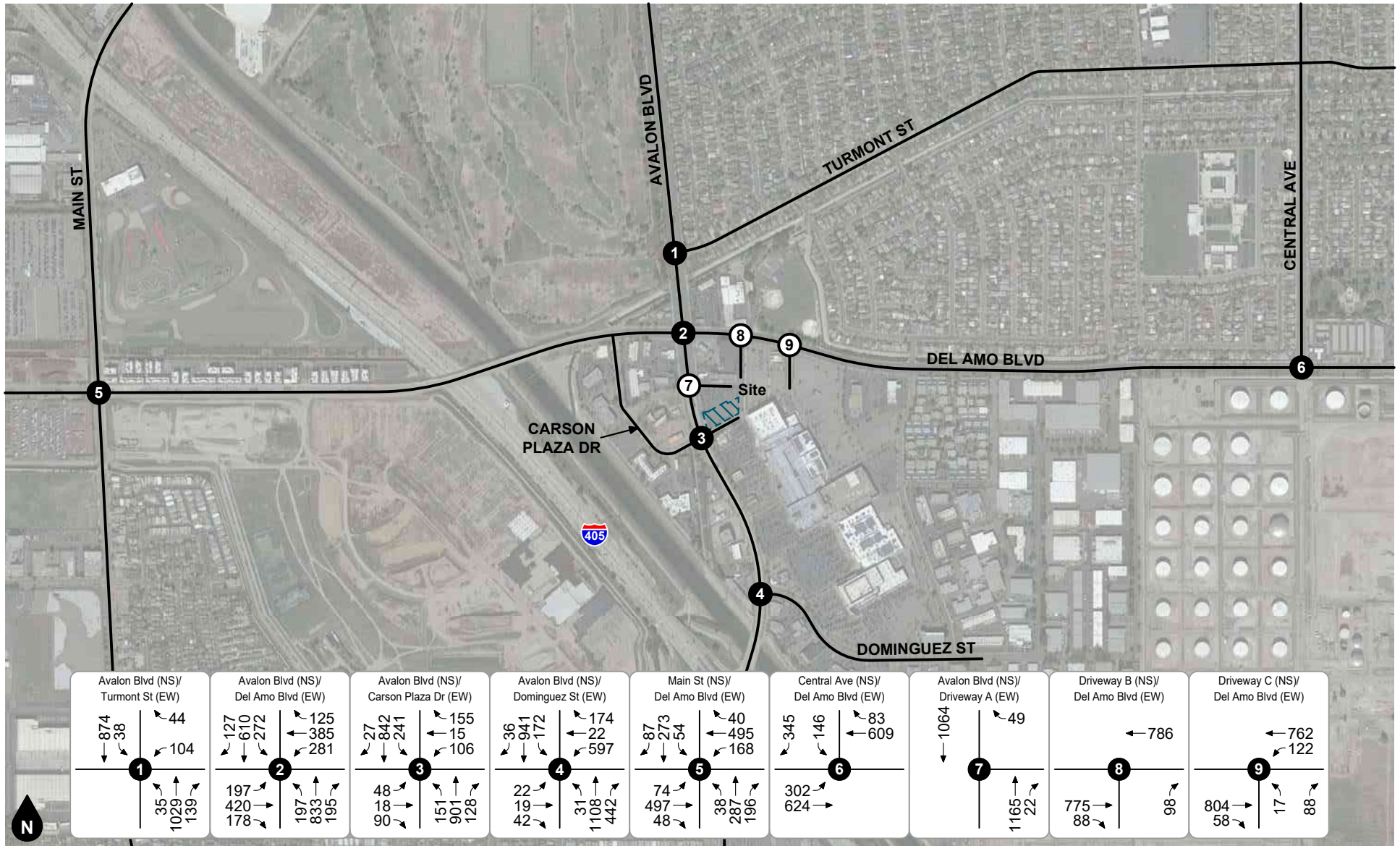




Legend

- # Study Intersection
- # Project Driveway

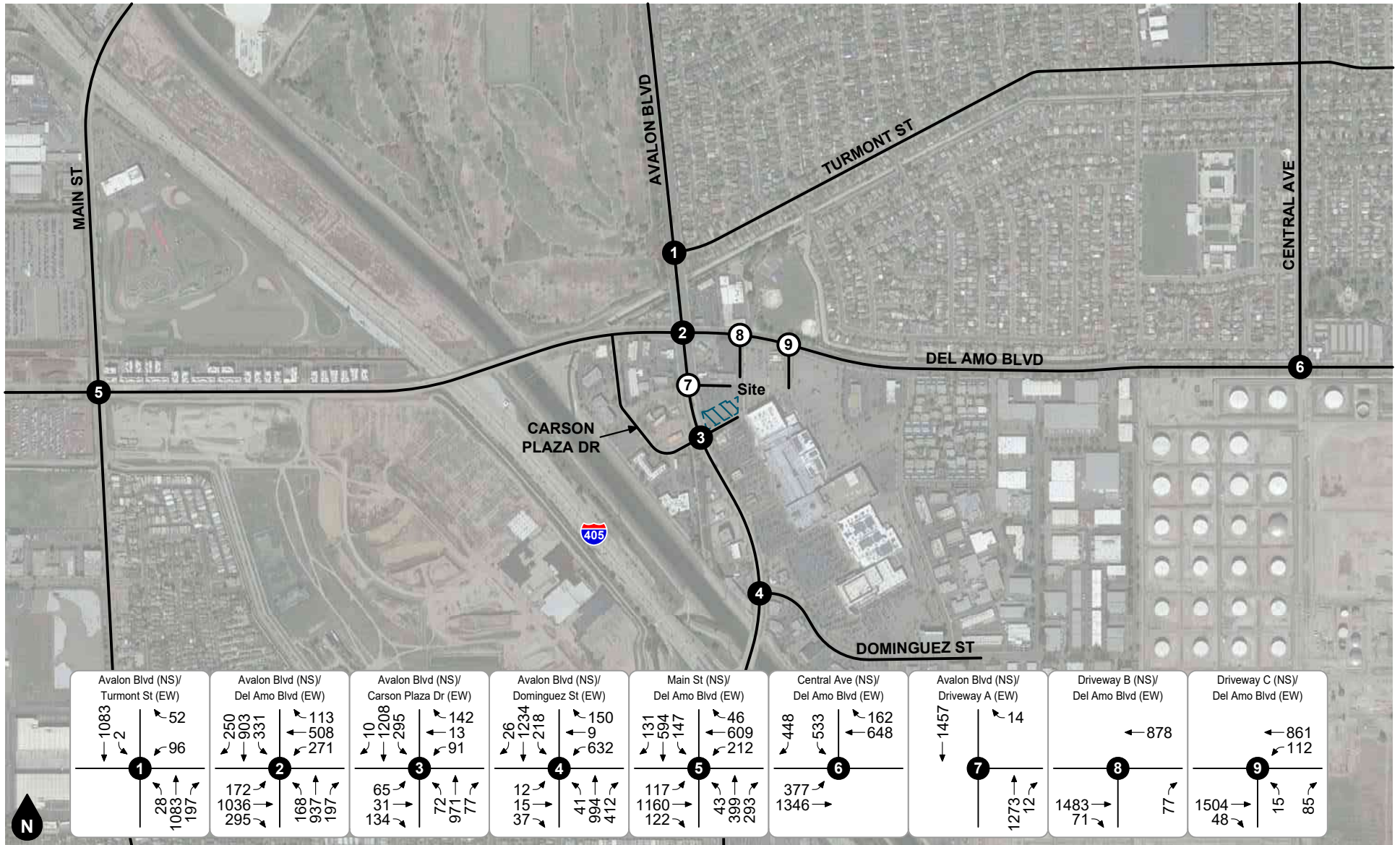
**Figure 21**  
**Other Development Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**



- Legend
- # Study Intersection
  - # Project Driveway

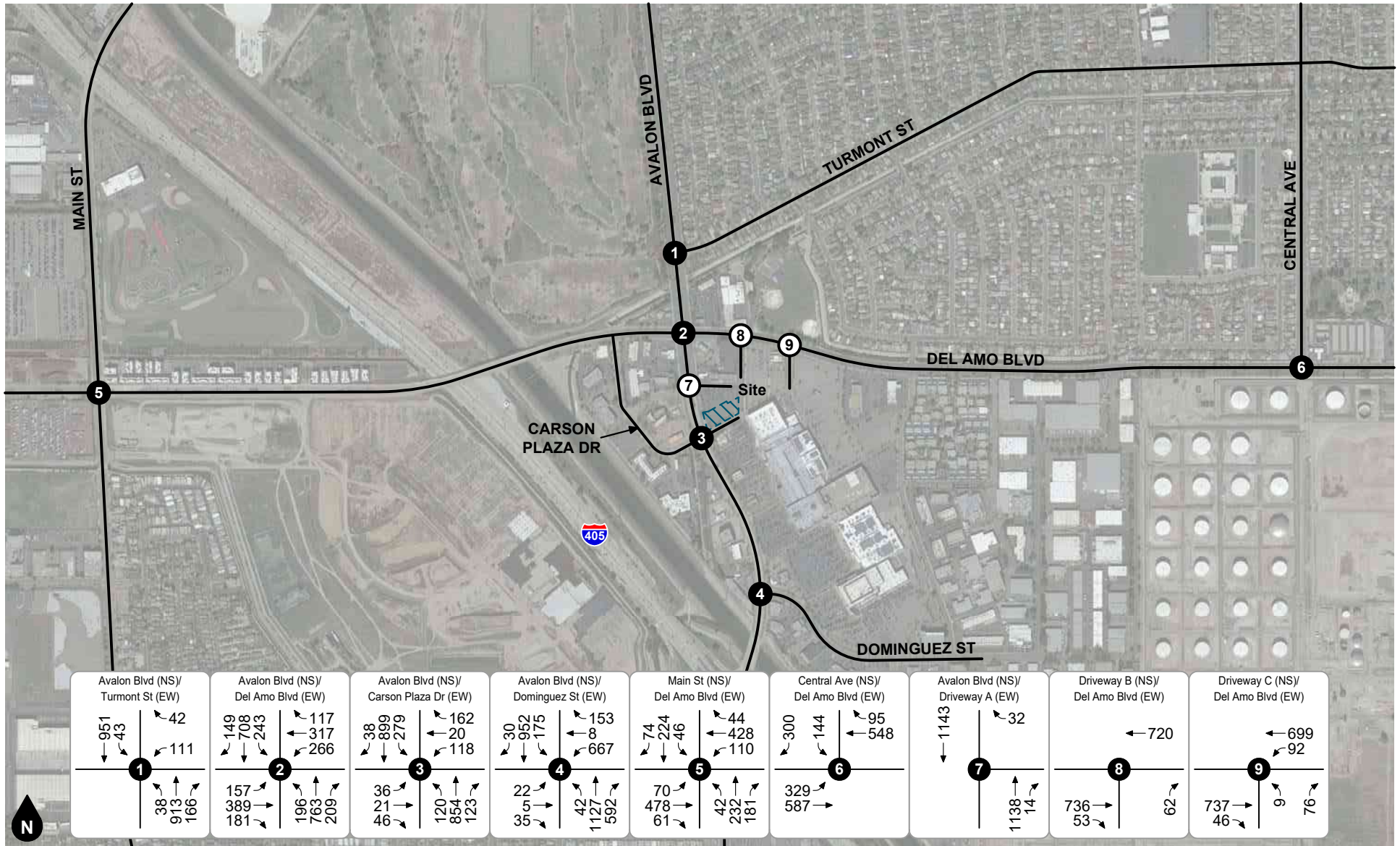
**Figure 22**  
**Opening Year (2024) Base Without Project Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**





Legend  
 # Study Intersection  
 # Project Driveway

**Figure 23**  
**Opening Year (2024) Base Without Project Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**

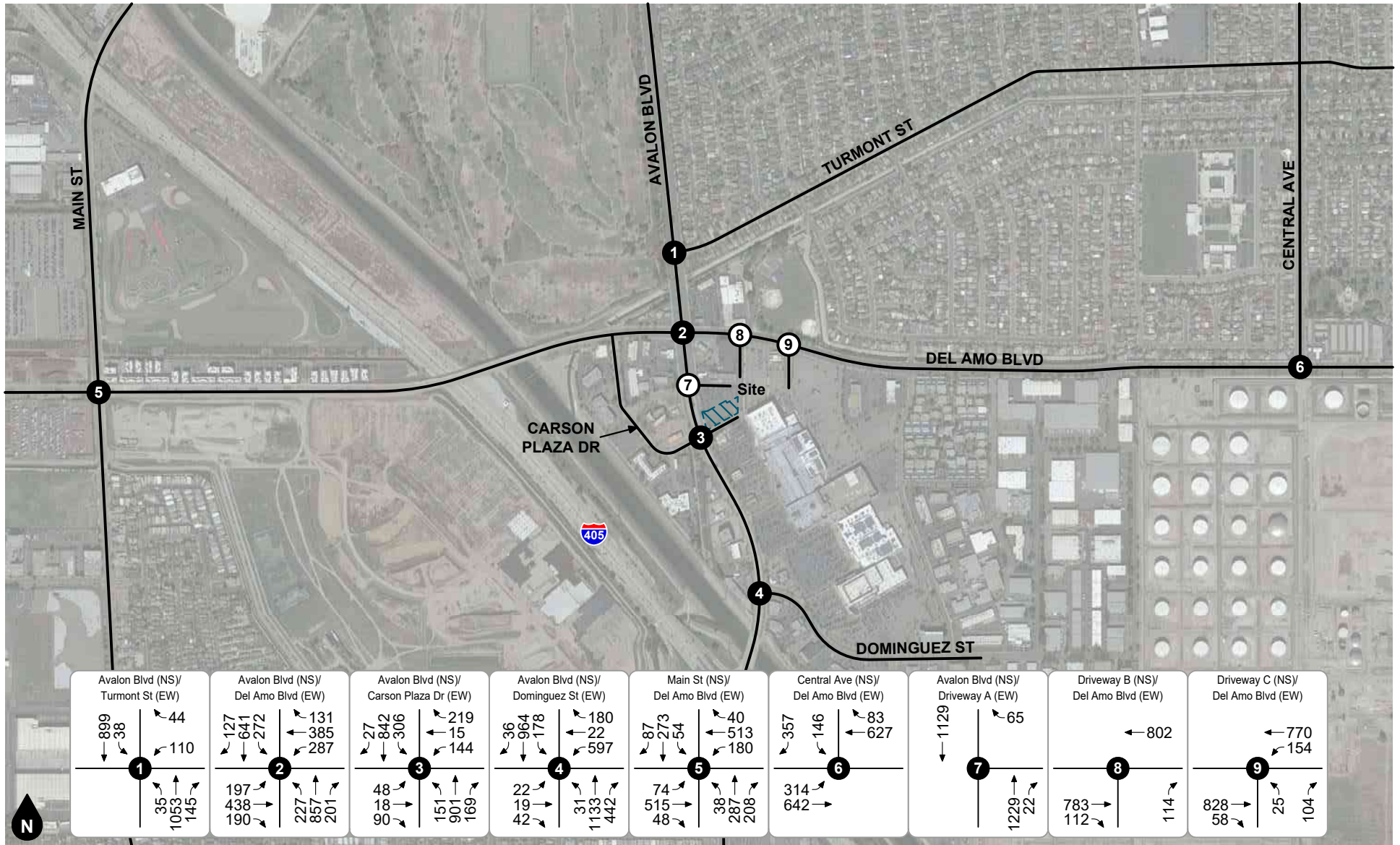


Legend

- # Study Intersection
- # Project Driveway

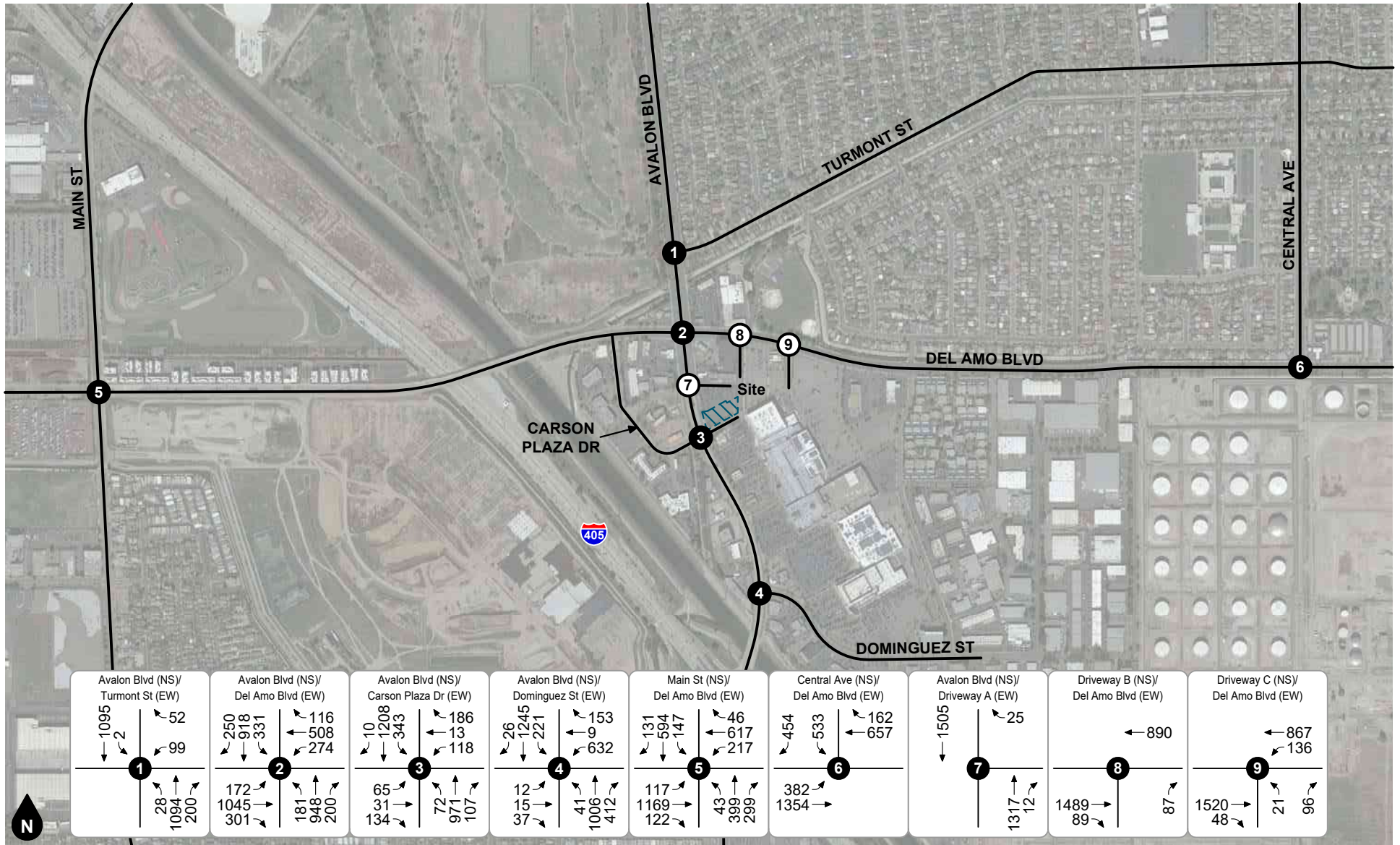
**Figure 24**  
**Opening Year (2024) Base Without Project Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**





- Legend
- # Study Intersection
  - # Project Driveway

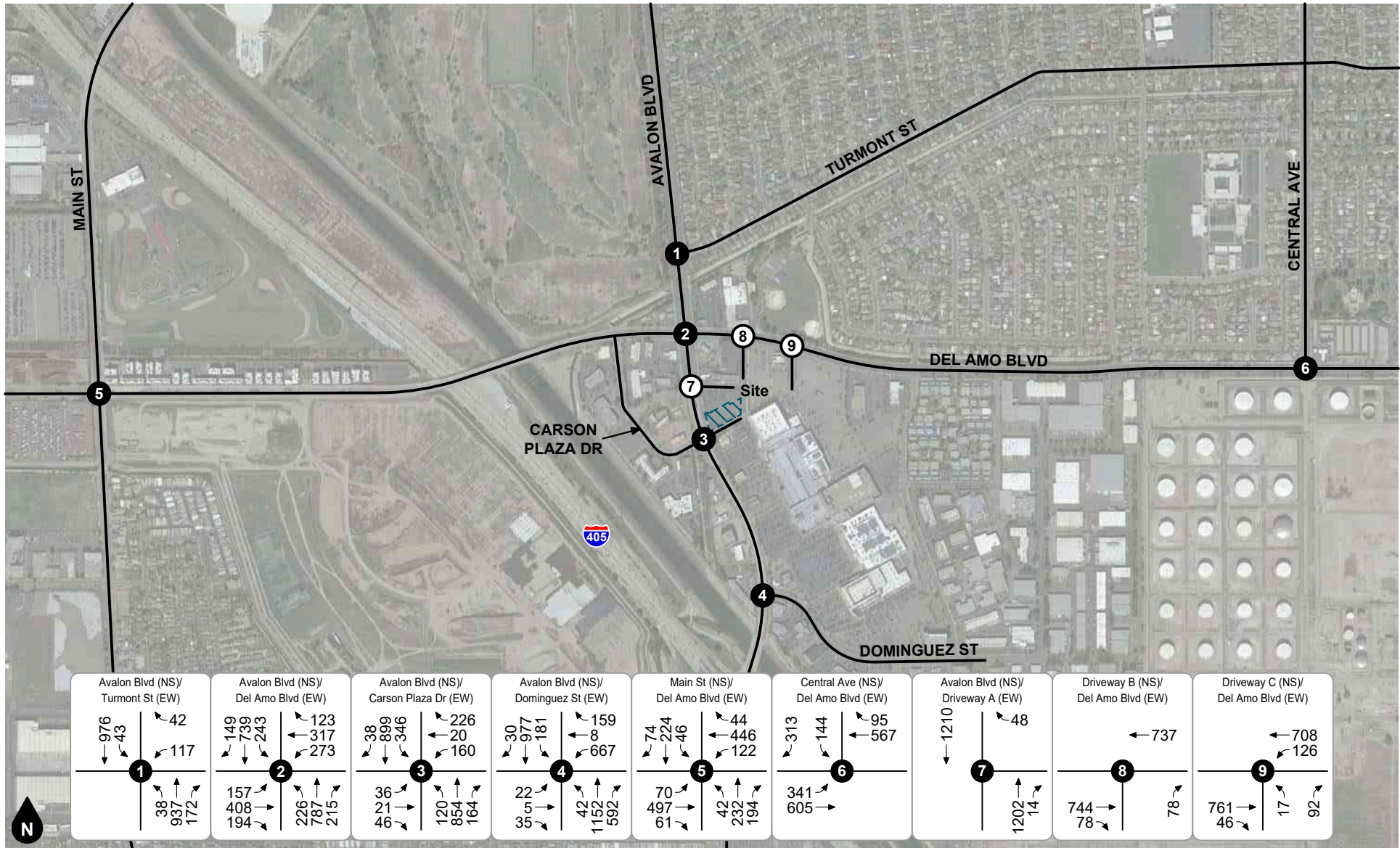
**Figure 25**  
**Opening Year (2024) Base With Project Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**



Legend  
 # Study Intersection  
 # Project Driveway

**Figure 26**  
**Opening Year (2024) Base With Project Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**

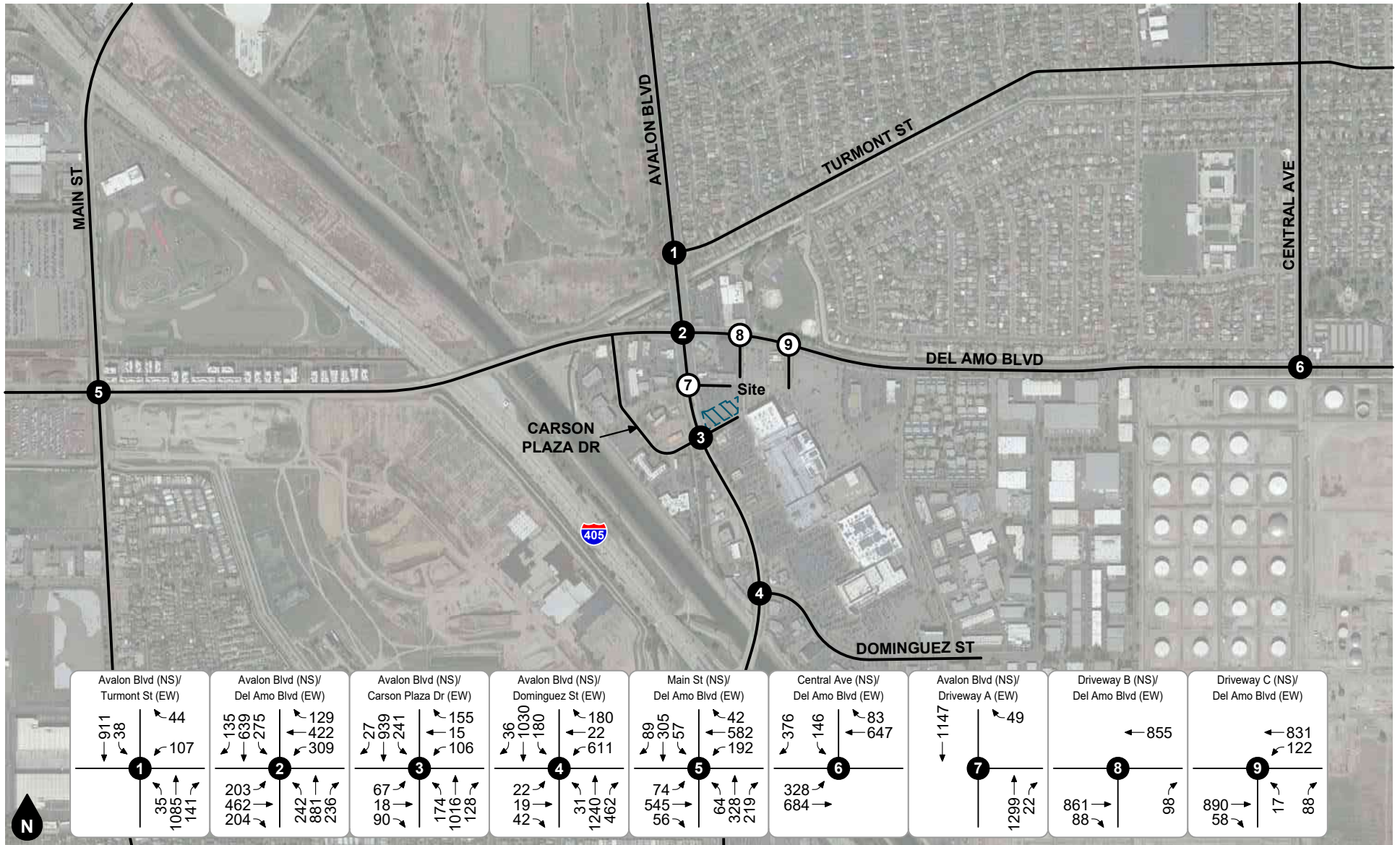




Legend

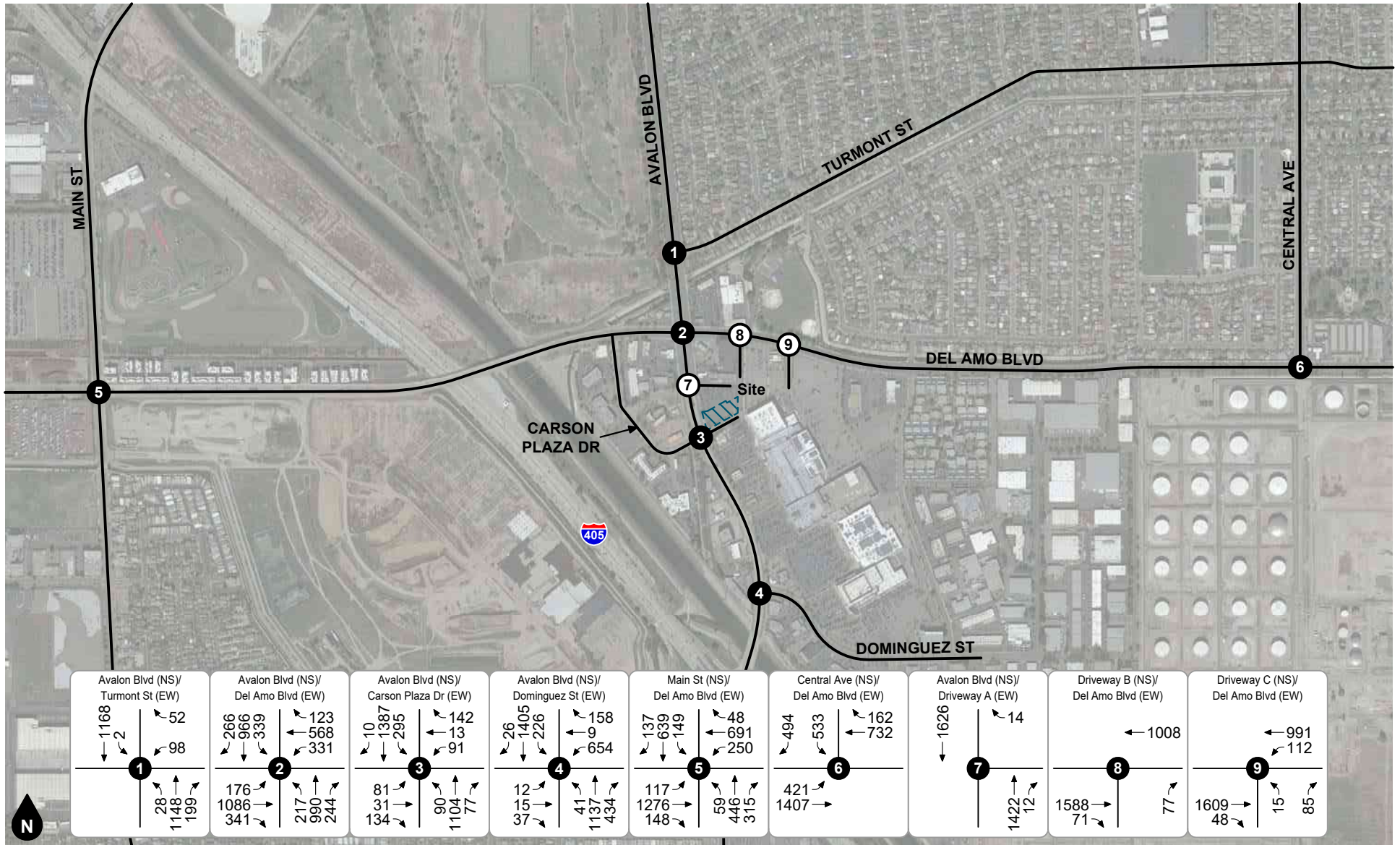
- # Study Intersection
- # Project Driveway

**Figure 27**  
**Opening Year (2024) Base With Project Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**



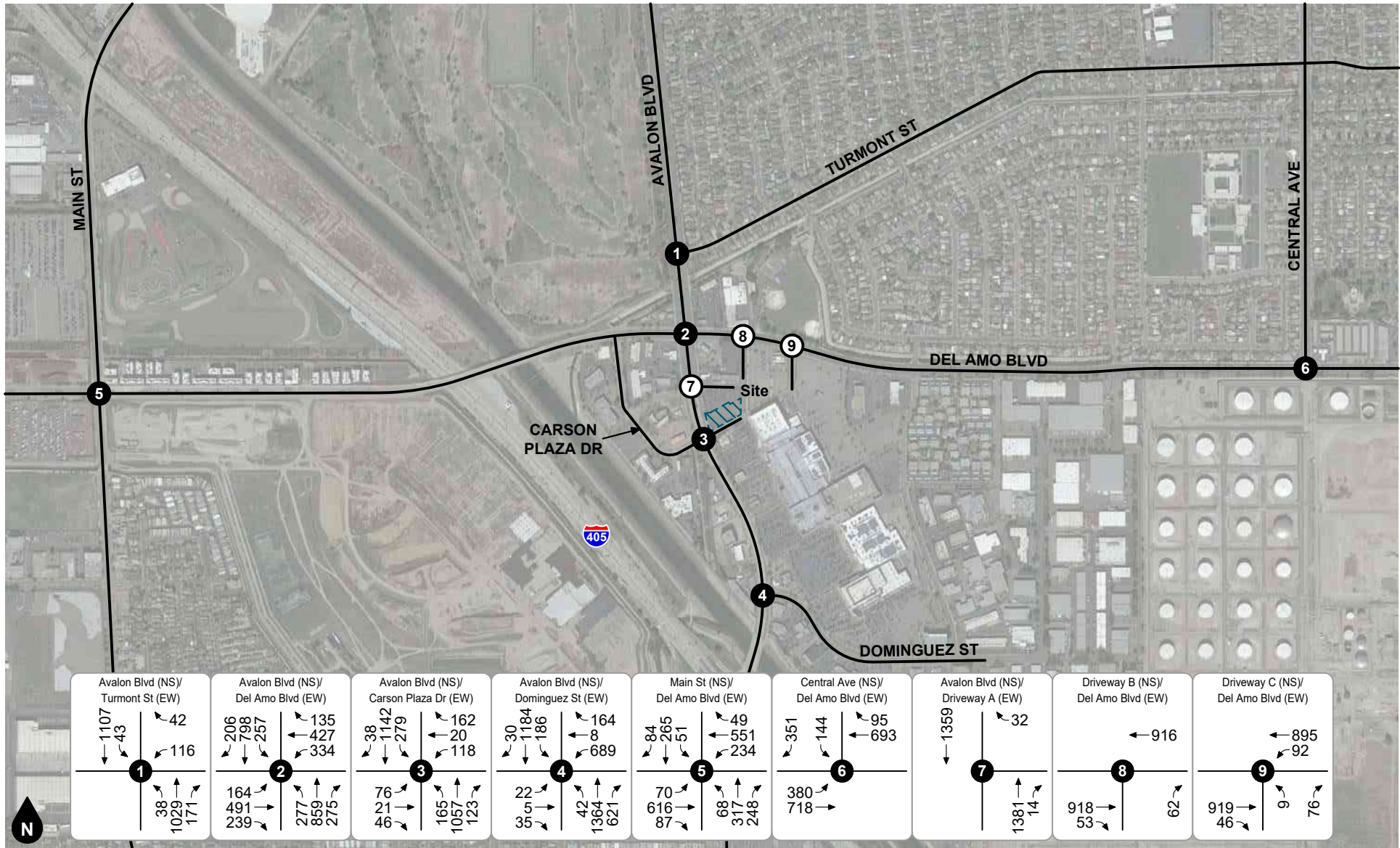
**Figure 28**  
**Opening Year (2024) Without Project Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**





- Legend
- # Study Intersection
  - # Project Driveway

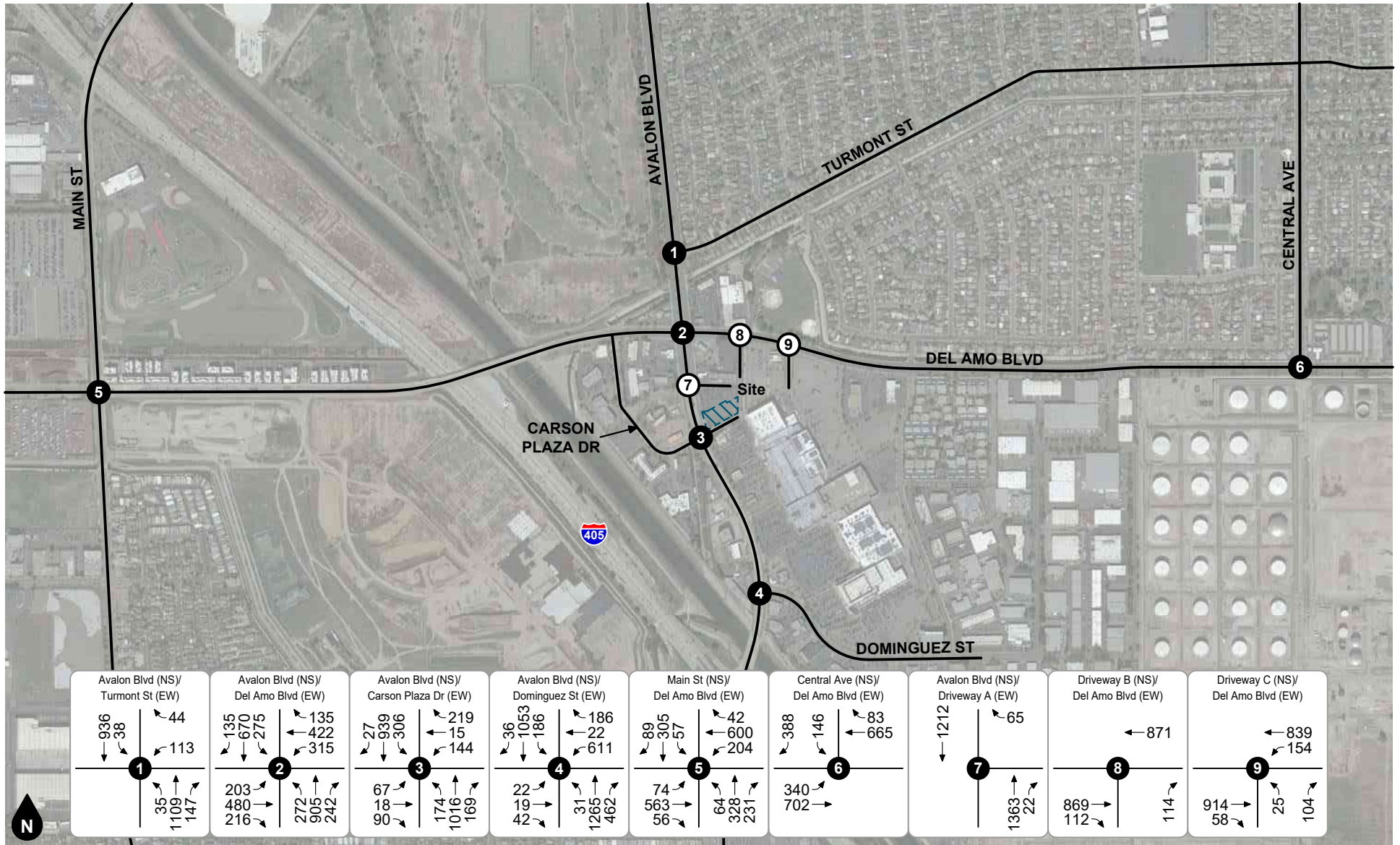
**Figure 29**  
**Opening Year (2024) Without Project Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**



- Legend**
- # Study Intersection
  - # Project Driveway

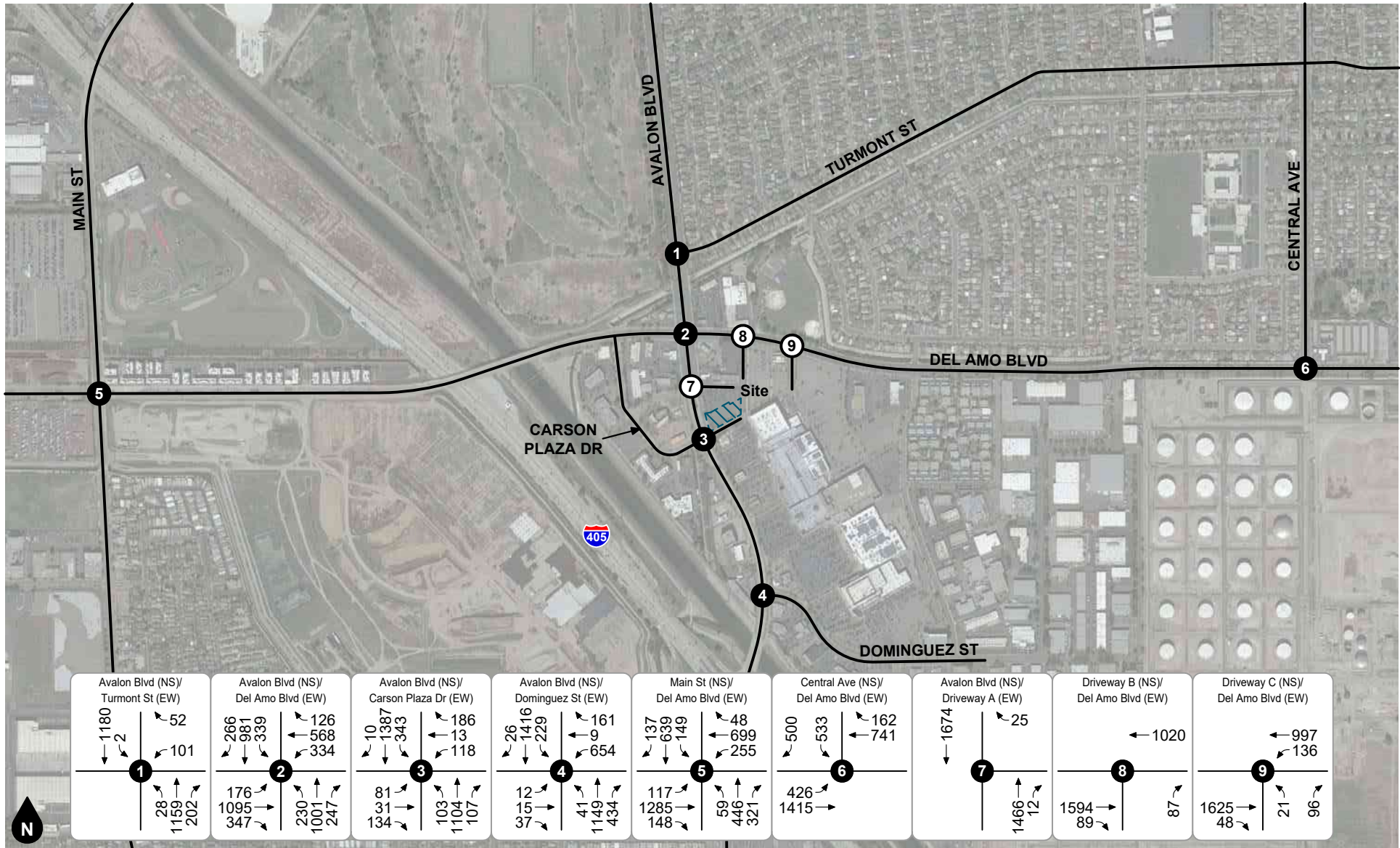
**Figure 30**  
**Opening Year (2024) Without Project Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**





- Legend**
- # Study Intersection
  - # Project Driveway

**Figure 31**  
**Opening Year (2024) With Project Weekday Midday**  
**Peak Hour Intersection Turning Movement Volumes**

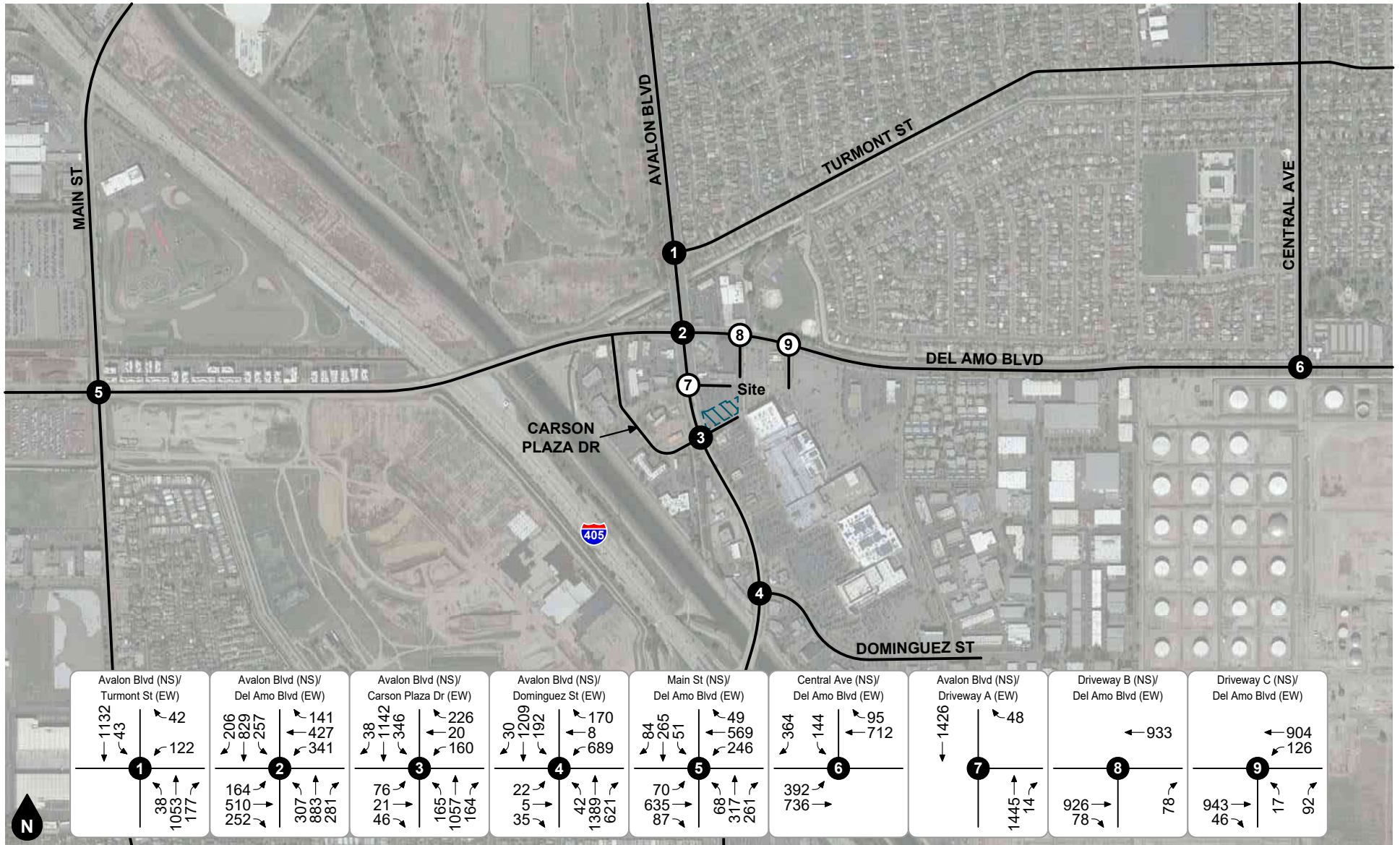


Legend

- # Study Intersection
- # Project Driveway

**Figure 32**  
**Opening Year (2024) With Project Weekday PM**  
**Peak Hour Intersection Turning Movement Volumes**





- Legend
- # Study Intersection
  - # Project Driveway

**Figure 33**  
**Opening Year (2024) With Project Saturday Midday**  
**Peak Hour Intersection Turning Movement Volumes**

## 6. FUTURE LEVELS OF SERVICE ANALYSIS

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Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix E.

### **OPENING YEAR (2024) BASE WITHOUT PROJECT (EA)**

The study intersection Levels of Service for Opening Year (2024) Base Without Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2024) Base Without Project conditions.

### **OPENING YEAR (2024) BASE WITH PROJECT (EAP)**

The study intersection Levels of Service for Opening Year (2024) Base With Project conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2024) Base With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for Opening Year (2024) Base With Project conditions.

### **OPENING YEAR (2024) WITHOUT PROJECT**

The study intersection Levels of Service for Opening Year (2024) Without Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2024) Without Project conditions.

### **OPENING YEAR (2024) WITH PROJECT**

The study intersection Levels of Service for Opening Year (2024) With Project conditions are shown in Table 7. As shown in Table 7, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2024) With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for Opening Year (2024) With Project conditions.



**Table 4  
Opening Year (2024) Base Intersection Levels of Service**

ID	Study Intersection	Traffic Control <sup>1</sup>	Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>
1.	Avalon Blvd at Turmont St	TS	6.0	A	4.4	A	6.3	A
2.	Avalon Blvd at Del Amo Blvd	TS	34.4	C	41.0	D	31.9	C
3.	Avalon Blvd at Carson Plaza Dr	TS	18.9	B	16.2	B	17.7	B
4.	Avalon Blvd at Dominguez St	TS	20.9	C	21.4	C	22.7	C
5.	Main St at Del Amo Blvd	TS	27.6	C	33.4	C	26.2	C
6.	Central Ave at Del Amo Blvd	TS	17.8	B	20.9	C	18.0	B
7.	Avalon Blvd at Driveway A	CSS	15.9	C	15.7	C	15.2	C
8.	Driveway B at Del Amo Blvd	CSS	12.4	B	18.6	C	11.6	B
9.	Driveway C at Del Amo Blvd	CSS	14.1	B	23.1	C	12.7	B

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. In accordance with the Highway Capacity Manual, overall average intersection delay-LOS are shown for intersections with traffic signal and worst minor street approach or major street left turn movement delay-LOS are shown for intersections with cross street stop control.
- (3) LOS = Level of Service
- (4) Base Year condition is the Existing Plus Ambient Growth for Opening Year without Project or without cumulative previously approved projects.

**Table 5**  
**Opening Year (2024) Base With Project Intersection Levels of Service Operations Assessment**

ID	Study Intersection	Traffic Control <sup>1</sup>	Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>
1.	Avalon Blvd at Turmont St	TS	6.0	A	4.4	A	6.3	A
2.	Avalon Blvd at Del Amo Blvd	TS	35.0	C	41.9	D	32.5	C
3.	Avalon Blvd at Carson Plaza Dr	TS	25.2	C	20.1	C	23.3	C
4.	Avalon Blvd at Dominguez St	TS	20.9	C	21.5	C	22.8	C
5.	Main St at Del Amo Blvd	TS	27.6	C	33.6	C	26.2	C
6.	Central Ave at Del Amo Blvd	TS	18.1	B	21.1	C	18.2	B
7.	Avalon Blvd at Driveway A	CSS	17.1	C	16.5	C	16.3	C
8.	Driveway B at Del Amo Blvd	CSS	12.7	B	19.2	C	11.9	B
9.	Driveway C at Del Amo Blvd	CSS	15.4	C	26.1	D	13.9	B

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. In accordance with the Highway Capacity Manual, overall average intersection delay-LOS are shown for intersections with traffic signal and worst minor street approach or major street left turn movement delay-LOS are shown for intersections with cross street stop control.
- (3) LOS = Level of Service
- (4) The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours; therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections.



**Table 6**  
**Opening Year (2024) Without Project Intersection Levels of Service**

ID	Study Intersection	Traffic Control <sup>1</sup>	Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>
1.	Avalon Blvd at Turmont St	TS	5.8	A	4.2	A	5.8	A
2.	Avalon Blvd at Del Amo Blvd	TS	36.3	D	53.0	D	36.9	D
3.	Avalon Blvd at Carson Plaza Dr	TS	17.8	B	15.8	B	16.7	B
4.	Avalon Blvd at Dominguez St	TS	20.7	C	21.4	C	22.6	C
5.	Main St at Del Amo Blvd	TS	28.1	C	34.2	C	27.2	C
6.	Central Ave at Del Amo Blvd	TS	19.2	B	23.0	C	19.1	B
7.	Avalon Blvd at Driveway A	CSS	17.2	C	17.0	C	17.6	C
8.	Driveway B at Del Amo Blvd	CSS	13.1	B	20.1	C	12.8	B
9.	Driveway C at Del Amo Blvd	CSS	15.0	B	25.7	D	14.3	B

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. In accordance with the Highway Capacity Manual, overall average intersection delay-LOS are shown for intersections with traffic signal and worst minor street approach or major street left turn movement delay-LOS are shown for intersections with cross street stop control.
- (3) LOS = Level of Service

**Table 7**  
**Opening Year (2024) With Project Intersection Levels of Service Operations Assessment**

ID	Study Intersection	Traffic Control <sup>1</sup>	Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
			Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>
1.	Avalon Blvd at Turmont St	TS	5.8	A	4.2	A	5.8	A
2.	Avalon Blvd at Del Amo Blvd	TS	37.6	D	54.9	D	38.5	D
3.	Avalon Blvd at Carson Plaza Dr	TS	23.2	C	19.1	B	21.3	C
4.	Avalon Blvd at Dominguez St	TS	20.8	C	21.5	C	22.9	C
5.	Main St at Del Amo Blvd	TS	28.2	C	34.6	C	27.4	C
6.	Central Ave at Del Amo Blvd	TS	19.5	B	23.2	C	19.6	B
7.	Avalon Blvd at Driveway A	CSS	18.8	C	18.0	C	19.2	C
8.	Driveway B at Del Amo Blvd	CSS	13.4	B	20.9	C	13.2	B
9.	Driveway C at Del Amo Blvd	CSS	16.5	C	29.7	D	16.1	C

Notes:

- (1) TS = Traffic Signal; CSS = Cross Street Stop
- (2) Delay is shown in seconds per vehicle. In accordance with the Highway Capacity Manual, overall average intersection delay-LOS are shown for intersections with traffic signal and worst minor street approach or major street left turn movement delay-LOS are shown for intersections with cross street stop control.
- (3) LOS = Level of Service
- (4) The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours; therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections.



## 7. SITE ACCESS & ON-SITE CIRCULATION

This section describes the project site access and on-site circulation. Vehicular access would be provided via existing driveways for the shopping center.

### SITE ACCESS QUEUING ANALYSIS

Table 8 summarizes the results of a queue analysis for key left turn movements providing project site access. The forecasted queue lengths shown in Table 8 are based on the Highway Capacity Manual 95th-percentile back-of-queue methodology as reported in the delay/Level of Service worksheets (see Appendix E). The 95th-percentile represents a probability that the queue length would only exceed this value 1 out of 20 signal cycles, or approximately once during the peak hour based on a 120 second cycle length.

As shown in Table 8, adequate storage length is forecast to be provided for the westbound left turn into the shopping center from Del Amo Boulevard (Driveway C); however, the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive is forecast to exceed the available storage length for Opening Year (2024) Without and With Project conditions.

The following improvement is recommended to address the queuing deficiency for Opening Year (2024) With Project conditions:

3. Avalon Boulevard (NS) at Carson Plaza Drive (EW)
  - Restripe the southbound approach to provide a second left turn lane.

As also shown in Table 8, the addition of project trips is forecast to increase the forecast queue lengths for the southbound left turn lane at Avalon Boulevard/Carson Plaza Drive during the peak hours by 56 to 83 feet based on the existing lane configurations. With the addition of project trips and implementation of the recommended improvements, the southbound left queue lengths are forecast to be reduced by 105 to 138 feet relative to the no project condition. Therefore, the proposed project is forecast to result in no project-related queuing deficiencies for Opening Year (2024) With Project conditions with implementation of the recommended improvements.

### DRIVE-THROUGH LANE QUEUE EVALUATION

To evaluate adequacy of the proposed drive-through lane, actual vehicular queues observed within the drive-through lanes at comparable In-N-Out Burger restaurants throughout Southern California were compiled from other studies. Queue survey data used for this analysis was obtained from the following In-N-Out locations:

Survey Location	Weekday Count Dates	Weekend Count Dates
Corona - 2305 Compton Avenue, Corona, CA 92881	12/4-8/2017	12/2-3/2017
Highland - 28009 Greenspot Road, Highland, CA 92346	12/4-8/2017	12/2-3/2017
Indio - 82043 Highway 111, Indio, CA 92201	6/27/2019	6/22/2019
La Quinta - 78611 Highway 111, La Quinta, CA 92253	6/27/2019	6/22/2019
Long Beach - 6391 E Pacific Coast Hwy, Long Beach, CA 90803	5/16/2012	5/19/2012
Los Angeles - 9149 S Sepulveda Blvd, Los Angeles, CA 90045	5/16/2012	5/19/2012
Thousand Palms - 72265 Varner Rd, Thousand Palms, CA 92276	6/27/2019	6/22/2019

Drive-through lane queues at the Corona and Highland locations were counted over multiple weekdays and weekend days from 10:30 AM to 1:00 AM. Weekday counts were conducted on Monday, December 4, 2017

through Friday, December 8, 2017. To provide a conservative assessment, the queue values used in this analysis are based on the greatest queue observed during the specified time period on any given weekday during which the counts were collected.

Table 9 and Table 10 summarize the drive-through lane queue survey results for weekdays and weekends. As shown in Table 9, the peak drive-through lane queue ranged from 15 to 24 vehicles on weekdays. The average peak queue observed on weekdays is equal to 20 vehicles. As shown in Table 10, the peak drive-through lane queue ranged from 16 to 25 vehicles on weekends. The average peak queue observed on weekends is equal to 22 vehicles.

Table 9 and Table 10 also show the 85th-percentile queues. In statistics, the 85th-percentile describes the value at which 85 percent of the samples are distributed at or below. In terms of this analysis, it means that 85 percent of the surveyed locations had a peak queue that did not exceed this value. Use of the maximum peak queue is not recommended for design applications because it would result in over-design for most sites. As shown in Table 9 and Table 10, 85th-percentile peak queue observed on weekdays is equal to 23 vehicles and the average peak queue observed on weekends is equal to 24 vehicles.

Based on the proposed storage capacity for 24 vehicles, the drive-through lane is forecast to provide sufficient stacking area to accommodate both the average maximum queue of 22 vehicles and 85th-percentile maximum queue of 24 vehicles during the peak lunch and dinner hours for In-N-Out restaurants.

#### **DRIVE-THROUGH LANE MANAGEMENT**

As a standard practice, In-N-Out Burger has typical drive-through lane management to ensure adequate on-site circulation to ensure that longer overflows do not lead to site access obstructions. During off-peak operations, the proposed drive-through lane is forecast to provide sufficient storage capacity.

The drive-through lane is monitored by typically three to four cameras with video feeds displayed at the manager's office, cooking grills, and both the pay and pick-up windows. During periods of peak demand, a wireless handheld ordering system is implemented once the drive-through lane queue extends beyond the menu board and ordering speaker generally located at the 9th vehicle position upstream of the pick-up window. This enables orders to be processed sooner and ensure that the order is ready by the time the vehicle reaches the pick-up window. The associate operating the handheld ordering system will also communicate with management inside the restaurant and can notify of the need for additional associates to assist in the parking area.

Compared to older In-N-Out locations, the proposed project will provide substantially more vehicular storage capacity in the drive-through lane and will have a larger, more efficient kitchen. Two grills are typically operated at all times and a third grill is used during periods of high volume. Activation of the third grill is typically done in response to drive-through demand and enables the restaurant to increase the speed at which drive-through orders are picked up. With implementation of handheld ordering, combined with the higher capacity kitchen, drive-through orders can be processed at an average of approximately one vehicle every 30-45 seconds during peak periods (order processing time may vary during non-peak periods).

#### **DELIVERY TRUCK CIRCULATION**

Truck deliveries are scheduled to occur after store closing and before opening, typically between 2:00 AM and 8:00 AM, so as not to interfere with on-site circulation and operations while the restaurant is open to the public. Truck loading/unloading would occur on-site in the drive aisle closest to the building entrance.



**Table 8**  
**Site Access Queuing Analysis**

ID	Intersection	Lane	Storage Length (feet/lane)	95th-Percentile Queue Length (Feet/Lane) <sup>1</sup>								
				Opening Year (2024) Without Project			Opening Year (2024) With Project			Project-Related Change		
				Wkdy MD	Wkdy PM	Sat MD	Wkdy MD	Wkdy PM	Sat MD	Wkdy MD	Wkdy PM	Sat MD
3.	Avalon Blvd at Carson Plaza Dr	SBL	185	305	348	333	388	404	411	83	56	77
		SBL (Dual)	185	-	-	-	200	210	210	-105	-138	-123

Notes:

(1) The forecast 95th-percentile queue lengths shown in the delay calculation worksheets have been rounded up to nearest 5-foot increment.

**Table 9**  
**Weekday Drive Through Queue Survey Summary**

Time	Peak Queue Observed within 15-Minute Increment								85th- %ile
	Corona	Highland	Indio	La Quinta	Long Beach	Los Angeles	Thousand Palms	Average	
LUNCH									
11:00 AM	17	14	5	8	3	6	15	10	15
11:15 AM	17	17	7	7	6	12	16	12	17
11:30 AM	16	16	12	12	7	16	18	14	16
11:45 AM	17	17	12	13	14	19	14	15	17
12:00 PM	23	19	12	21	15	20	17	18	21
12:15 PM	24	21	10	22	15	18	16	18	22
12:30 PM	23	21	9	19	13	21	16	17	21
12:45 PM	17	20	12	18	8	19	20	16	20
1:00 PM	16	19	16	18	12	22	10	16	19
1:15 PM	18	14	12	20	13	21	12	16	20
1:30 PM	17	16	10	18	8	20	13	15	18
1:45 PM	15	18	8	16	7	20	10	13	18
2:00 PM	16	17	7	14	8	21	19	15	19
DINNER									
4:00 PM	17	15	7	15	6	17	7	12	17
4:15 PM	16	19	4	21	5	15	10	13	19
4:30 PM	17	17	7	20	3	12	9	12	17
4:45 PM	16	18	7	20	6	10	11	13	18
5:00 PM	23	19	6	22	5	9	10	13	22
5:15 PM	23	19	12	18	7	14	14	15	19
5:30 PM	23	19	10	21	7	17	13	16	21
5:45 PM	18	21	9	19	5	19	9	14	19
6:00 PM	23	23	10	16	12	20	12	17	23
6:15 PM	24	22	8	22	7	19	16	17	22
6:30 PM	24	19	11	23	10	20	18	18	23
6:45 PM	24	18	10	21	12	18	18	17	21
7:00 PM	23	19	7	21	10	17	19	17	21
7:15 PM	18	21	10	16	11	18	20	16	20
7:30 PM	23	21	12	7	7	19	17	15	21
7:45 PM	24	19	7	17	6	20	16	16	20
8:00 PM	23	18	15	16	8	21	10	16	21
8:15 PM	17	17	12	17	6	19	17	15	17
8:30 PM	16	17	10	15	9	19	15	14	17
<b>PEAK</b>	<b>24</b>	<b>23</b>	<b>16</b>	<b>23</b>	<b>15</b>	<b>22</b>	<b>20</b>	<b>20</b>	<b>23</b>

Source: Queue observations at existing In-N-Out restaurants; see Appendix F.



**Table 10**  
**Weekend Drive Through Queue Survey Summary**

Time	Peak Queue Observed within 15-Minute Increment								85th- %ile
	Corona	Highland	Indio	La Quinta	Long Beach	Los Angeles	Thousand Palms	Average	
LUNCH									
11:00 AM	9	9	6	8	7	8	8	8	9
11:15 AM	13	14	4	11	8	11	8	10	13
11:30 AM	17	16	7	16	9	12	12	13	16
11:45 AM	19	18	8	11	16	18	14	15	18
12:00 PM	17	18	11	10	16	20	11	15	18
12:15 PM	18	20	8	14	14	16	12	15	18
12:30 PM	23	20	9	18	16	20	18	18	20
12:45 PM	24	21	11	16	10	20	16	17	21
1:00 PM	24	19	16	15	15	23	15	18	23
1:15 PM	23	20	7	14	16	22	15	17	22
1:30 PM	24	20	6	18	10	20	18	17	20
1:45 PM	23	22	8	15	9	20	18	16	22
2:00 PM	22	17	12	16	12	21	14	16	21
DINNER									
4:00 PM	20	14	10	14	8	10	12	13	15
4:15 PM	18	15	15	17	10	14	11	14	17
4:30 PM	17	16	15	17	8	18	12	15	17
4:45 PM	17	18	16	20	5	8	11	14	18
5:00 PM	23	19	20	21	9	8	12	16	21
5:15 PM	24	20	22	18	10	9	11	16	22
5:30 PM	24	22	22	19	10	20	6	18	22
5:45 PM	23	18	24	12	9	19	16	17	23
6:00 PM	24	23	21	11	13	20	19	19	23
6:15 PM	24	21	16	10	9	19	17	17	21
6:30 PM	25	20	10	17	10	20	15	17	21
6:45 PM	25	19	11	18	14	18	20	18	21
7:00 PM	24	21	8	10	12	19	19	16	21
7:15 PM	24	19	7	12	13	20	13	15	20
7:30 PM	23	18	6	11	9	21	12	14	21
7:45 PM	23	19	9	8	9	22	14	15	22
8:00 PM	15	20	12	15	10	21	13	15	20
8:15 PM	16	19	9	16	9	22	17	15	19
8:30 PM	17	21	8	16	11	18	17	15	18
<b>PEAK</b>	<b>25</b>	<b>23</b>	<b>24</b>	<b>21</b>	<b>16</b>	<b>23</b>	<b>20</b>	<b>22</b>	<b>24</b>

Source: Queue observations at existing In-N-Out restaurants; see Appendix F.

## 8. CONCLUSIONS

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This section summarizes the findings, operational improvements (if any), and recommendations identified and described in previous sections of this study. Figure 34 summarizes the recommended improvements.

### PROJECT TRIP GENERATION

The proposed is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour, 115 trips during the mid-day PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour.

### LEVEL OF SERVICE ANALYSIS

The study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Existing, Opening Year (2024) Base Without Project, and Opening Year (2024) Base With Project, and Opening Year (2024) With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for evaluated scenarios.

### SITE ACCESS QUEUING ANALYSIS

Adequate storage length is forecast to be provided for the westbound left turn into the shopping center from Del Amo Boulevard (Driveway C); however, the southbound left turn into the shopping center at Avalon Boulevard/Carson Plaza Drive is forecast to exceed the available storage length for Opening Year (2024) Without and With Project conditions.

The following improvement is recommended to address the queuing deficiency for Opening Year (2024) With Project conditions:

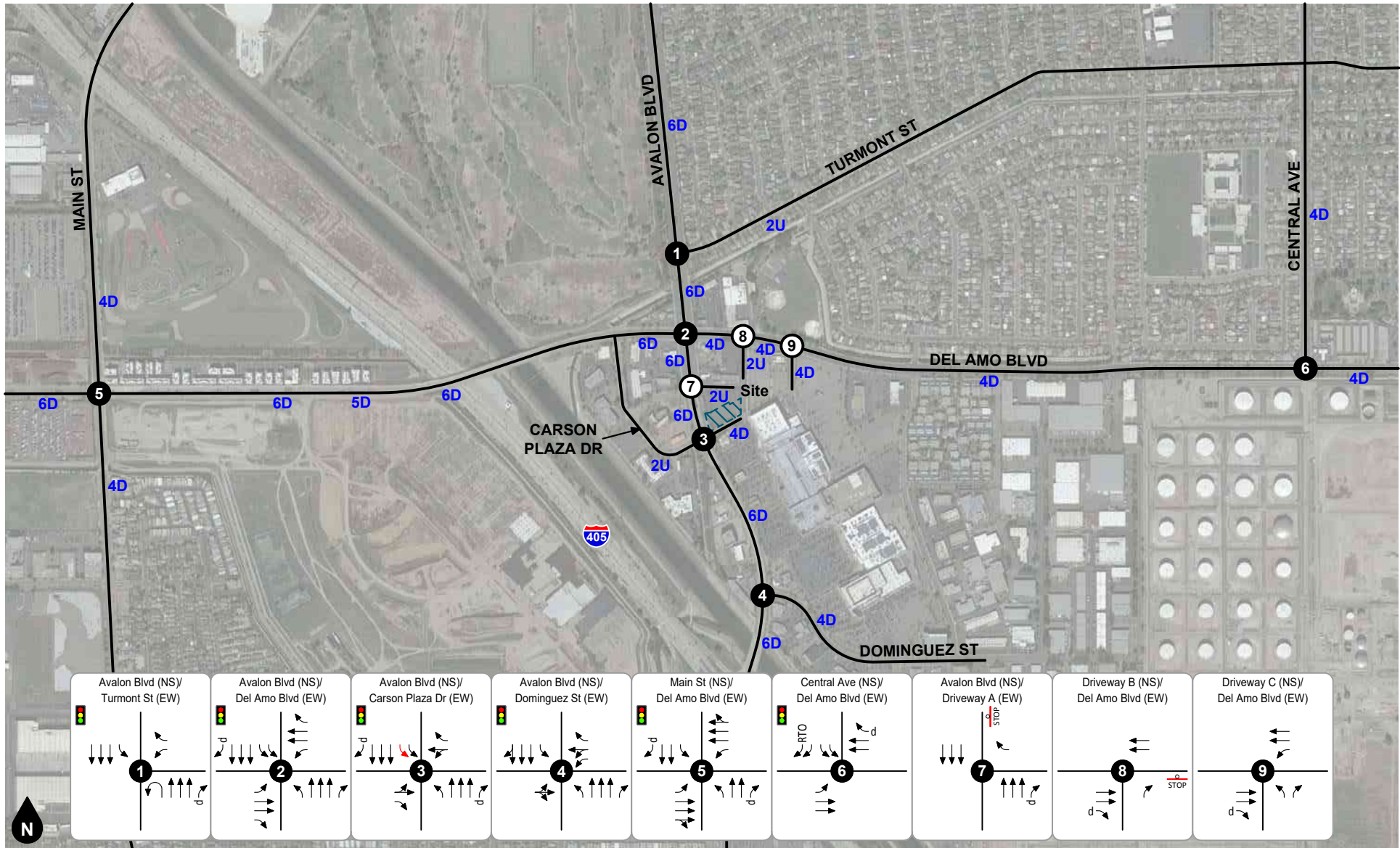
3. Avalon Boulevard (NS) at Carson Plaza Drive (EW)
  - Restripe the southbound approach to provide a second left turn lane.

With the addition of project trips and implementation of the recommended improvements, the southbound left queue lengths are forecast to be reduced by 105 to 138 feet relative to the no project condition. Therefore, the proposed project is forecast to result in no project-related queuing deficiencies for Opening Year (2024) With Project conditions with implementation of the recommended improvements.

### DRIVE THROUGH LANE QUEUING ANALYSIS

Based on the proposed storage capacity for 24 vehicles, the drive-through lane is forecast to provide sufficient stacking area to accommodate both the average maximum queue of 22 vehicles and 85th-percentile maximum queue of 24 vehicles during the peak lunch and dinner hours for In-N-Out restaurants.





- Legend**
- Traffic Signal
  - Stop Sign
  - #D #-Lane Divided Roadway
  - #U #-Lane Undivided Roadway
  - Existing Lane
  - RTO Right Turn Overlap
  - De Facto Right Turn Lane
  - Improvements

**Figure 34**  
**Recommended Lane Geometry and Intersection Traffic Controls**

# APPENDICES

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Appendix A Glossary

Appendix B Scoping Agreement

Appendix C Intersection Count Worksheets

Appendix D Existing Volume Adjustment Factor Calculations

Appendix E Intersection Level of Service Worksheets

Appendix F In-N-Out Burger Drive-Through Queue Data



## **APPENDIX A**

### **GLOSSARY**

## ACRONYMS

<b>AC</b>	Acres
<b>ADT</b>	Average Daily Traffic
<b>Caltrans</b>	California Department of Transportation
<b>DU</b>	Dwelling Unit
<b>ICU</b>	Intersection Capacity Utilization
<b>GFA</b>	Gross Floor Area
<b>LOS</b>	Level of Service
<b>PCE</b>	Passenger Car Equivalent
<b>SP</b>	Service Population
<b>TSF</b>	Thousand Square Feet
<b>V/C</b>	Volume/Capacity
<b>VMT</b>	Vehicle Miles Traveled

## TERMS

**ACTUATED SIGNAL CONTROL:** A type of traffic signal control in which display of each phase depends on whether the corresponding phase detector has registered a service call or the phase is on recall.

**ACTUATION:** Detection of a roadway user that is forwarded to the signal controller.

**AVERAGE DAILY TRAFFIC:** The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

**BANDWIDTH:** The number of seconds of green time available for through traffic in a signal progression.

**BOTTLENECK:** A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

**CALL:** An indication within a signal controller that a particular phase is waiting for service, either through actuation from a roadway user or phase recall.

**CAPACITY:** The maximum number of vehicles that can be reasonably expected to pass through a roadway facility during a specified period.

**CHANNELIZATION:** The separation of conflicting traffic movements by use of pavement markings, raised curbs, or other suitable means to facilitate free flow movement.

**CLEARANCE INTERVAL:** Equal to the yellow plus all-red time, if any, when a traffic signal changes between phases (i.e., the amount of time between the end of a green light from one movement to the beginning of a green light for the next).

**COORDINATED SIGNAL CONTROL:** A type of traffic signal control in which non-coordinated phases associated with minor movements are constrained such that the coordinated phases are served at a specific time during the signal cycle, thus maintaining the efficient progression of traffic flow along the major roadway.

**CONTROL DELAY:** The portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign). It includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay.

**CORDON:** An imaginary boundary line around or across a study area across which vehicles, persons, or other information can be collected for survey and analytical purposes.



**CORNER SIGHT DISTANCE:** The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic traveling at a given speed to radically alter their speed or trajectory.

**CYCLE:** A complete sequence of signal indications for all phases.

**CYCLE LENGTH:** The total time for a traffic signal to complete one full cycle.

**DAILY CAPACITY:** A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

**DELAY:** The total additional travel time experienced by a roadway user (driver, passenger, bicyclist, or pedestrian) beyond that required to travel at a desired speed.

**DENSITY:** The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

**DETECTOR:** A device used to count or determine the presence of a roadway user.

**DESIGN SPEED:** A speed used for purposes of designing horizontal and vertical alignments of a highway.

**DIRECTIONAL SPLIT:** The percent of two-way traffic traveling in a specified direction.

**DIVERSION:** The rerouting of traffic from a normal path of travel between two points, such as to avoid congestion or perform a secondary trip.

**FREE FLOW:** Traffic flow that is unaffected by a traffic control and/or or upstream or downstream conditions.

**GAP:** Time or distance between two vehicles measured from rear bumper of the front vehicle to front bumper of the second vehicle.

**GAP ACCEPTANCE:** The method by which a driver accepts an available gap in traffic to enter or cross the road.

**HEADWAY:** Time or distance between two successive vehicles measured from same point on both vehicles (i.e., front bumper to front bumper).

**LEVEL OF SERVICE:** A grading scale of quantitative performance measures representing the quality of service of a transportation facility or service from an average traveler's perspective.

**LOOP DETECTOR:** A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

**MULTI-MODAL:** More than one mode, such as automobile, transit, bicycle, and pedestrian.

**OFFSET:** The time interval between the beginning of a traffic signal cycle at one intersection and the beginning of signal cycle an adjacent intersection.

**PLATOON:** A set of vehicles traveling at similar speed and moving as a general group with clear separation between other vehicles ahead and behind.

**PASSENGER CAR EQUIVALENT:** A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

**PEDESTRIAN CLEARANCE INTERVAL:** Also known as the “Flashing Don’t Walk” interval, it signals the end of pedestrian entry into the crosswalk following the “Walk” indication and provides time for pedestrians who have already entered the crosswalk to finishing crossing.

**PEAK HOUR:** The hour within a day in which the maximum volume occurs.

**PEAK HOUR FACTOR:** The peak hour volume divided by the four times the peak 15-minute flow rate. This

**PHASE:** In traffic signals, the green, yellow, and red clearance intervals assigned to a specified traffic movement.

**PRETIMED SIGNAL:** A traffic signal operation in which the cycle length, phasing sequence, and phasing times are predetermined and fixed, regardless of actual demand for any given traffic movement. Also known as a fixed time signal.

**PROGRESSION:** The coordinated movement of vehicles through signalized intersections along a corridor.

**QUEUE:** The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

**QUEUE LENGTH:** The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

**RECALL:** A signal phasing operation in which a specified phase places a call to the signal controller each time a conflicting phase is served, thus ensuring the specified phase will be serviced again.

**SEMI-ACTUATED CONTROL:** A type of traffic signal control in which only the minor movements are provided detection.

**SIGHT DISTANCE:** The continuous length of roadway visible to a driver or roadway user.

**STACKING DISTANCE:** The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

**STOPPING SIGHT DISTANCE:** The minimum distance required by the driver of a vehicle traveling at a given speed to bring the vehicle to a stop after an object on the road becomes visible, including reaction and response time.

**TRIP OR TRIP END:** The one-directional movement of a person or vehicle. Every trip has an origin and a destination at its respective ends (i.e., trip ends). In terms of site trip generation, the same vehicle entering and exiting a site generates two trips: one inbound trip and one outbound trip.

**TRIP GENERATION RATE:** The rate at which a land use generates trips per the specified land use variable, such per dwelling unit or per thousand square feet.

**TRUCK:** A heavy motor vehicle generally used for transporting goods.

**VEHICLE MILES TRAVELED:** A measure of the amount and distance of automobile travel essentially calculated as the sum of each trip times the trip length.



**APPENDIX B**

**MEMORANDUM OF UNDERSTANDING**



## MEMORANDUM OF UNDERSTANDING

**TO:** Ryan Kim, City Traffic Engineer | CITY OF CARSON

**FROM:** Perrie Ilercil, PE (AZ) | GANDDINI GROUP, INC.

**DATE:** June 24, 2021

**SUBJECT:** In-N-Out Burger (20700 Avalon Boulevard) Traffic Study Assumptions  
19398

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The purpose of this scoping document is to outline the proposed focused traffic analysis parameters and assumptions for the In-N-Out Burger (20700 Avalon Boulevard) for review/concurrence by City of Carson staff.

### PROJECT DESCRIPTION

Figure 1 shows the regional vicinity of the project, and Figure 2 shows the project location map. The 0.84-acre project site is located at 20700 South Avalon Boulevard within the existing South Bay Pavilion shopping center in the City of Carson. The project site is currently developed with a paved parking area serving the overall shopping center. The proposed project involves construction of a new 3,885 square foot fast-food restaurant with drive-thru. Vehicular access would be provided via existing driveways for the shopping center. The site plan is illustrated on Figure 3.

### PROJECT TRIP GENERATION & DISTRIBUTION

Table 1 shows the proposed Project weekday and Saturday trip generation based upon trip generation rates obtained from the surveyed In-N-Out trip rates as well as Institute of Transportation Engineers (ITE) *Trip Generation Handbook* (3rd Edition, 2017) pass-by trip adjustments. As shown in Table 1, the proposed is forecast to generate approximately 2,254 weekday daily trips, including 242 trips during the weekday mid-day peak hour, 115 trips during the PM peak hour, and approximately 2,239 Saturday daily trips, including 247 trips during the Saturday mid-day peak hour.

#### In-N-Out Burger Trip Generation

The ITE *Trip Generation Manual* contains data for a fast-food restaurant with drive-thru window land use code (ITE 934). However, In-N-Out is generally understood to generate more trips than the average fast-food restaurant. To provide a conservative analysis, trip generation for the proposed In-N-Out is based on average trip generation rates derived from trip counts of existing In-N-Out restaurants throughout California. It should be noted that In-N-Out restaurants are not open during the AM peak hours. Trip count worksheets and trip generation calculations for In-N-Out are contained in Attachment A.

#### Pass-By Trip Adjustments

Land uses such as shopping centers, restaurants, gasoline stations, and convenience stores will often locate next to busy roadways to attract motorists already on the street. Since the trip generation rates contained in the ITE *Trip Generation Handbook* represent vehicles entering and exiting at the site driveway(s), it is



appropriate to reduce the initial trip generation forecast by the applicable pass-by trip rate when calculating the net new trips that will be added to the surrounding street system. The project trip generation forecasts shown in Table 1 apply pass-by trip adjustments based upon pass-by rates for a fast-food restaurant with drive-thru window land use code (ITE 934) from the ITE *Trip Generation Handbook*. For time periods with no pass-by data provided in ITE *Trip Generation Handbook*, pass-by rates are assumed as half of ITE peak hour rate.

### Project Trip Distributions

Figures 4 and 5 illustrate the forecast directional distribution patterns of the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

## STUDY AREA

As specified in the City of Carson application review letter, the study area shall consist of the following study intersection:

Study Intersections	Jurisdiction
1. Avalon Boulevard (NS) at Turmont Street (EW)	Carson
2. Avalon Boulevard (NS) at Del Amo Boulevard (EW)	Carson
3. Avalon Boulevard (NS) at Carson Plaza Drive (EW)	Carson
4. Avalon Boulevard (NS) at Dominguez Street (EW)	Carson
5. Main Street (NS) at Del Amo Boulevard (EW)	Carson
6. Central Avenue (NS) at Del Amo Boulevard (EW)	Carson
7. Avalon Boulevard (NS) at Driveway A (EW)	Carson
8. Driveway B (NS) at Del Amo Boulevard (EW)	Carson
9. Driveway C (NS) at Del Amo Boulevard (EW)	Carson

NS= north-south, EW = east-west

## TRAFFIC COUNTS

New intersection turning movement counts will be collected at the study intersections during the typical weekday mid-day and PM peak hour (11:00 AM – 2:00 PM and 4:00 - 6:00 PM) and typical Saturday mid-day peak hour (11:00 AM – 2:00 PM). A historical 2017 count at the intersection of Avalon Boulevard/Del Amo Boulevard will be increased by one percent per year to estimate non-pandemic year 2021 volumes and compared to the new counts. If necessary, new counts shall be adjusted as appropriate based on a factor derived from the difference between the adjusted historical count and new count volumes.

## INTERSECTION ANALYSIS METHODOLOGY

In accordance with the Los Angeles County *Transportation Impact Analysis Guidelines*, July 23, 2021; [County TIA Guidelines], intersections shall be analyzed using the intersection delay methodology based on procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). Default values not specifically identified in the City or County guidelines will be based *Highway Capacity Manual* recommended



values. Intersection analysis shall be performed using the Vistro software (Version 6.00-00).

## PERFORMANCE STANDARDS

Level of Service D is typically recognized as the minimum acceptable Level of Service for key intersections of the arterial system in the City of Carson.

## ANALYSIS SCENARIOS

The traffic study shall evaluate the following analysis scenarios for weekday mid-day and PM peak hour and Saturday mid-day peak hour:

- Existing
- Existing Plus Project
- Opening Year (2024) Without Project (Ambient Growth + Other Development)
- Opening Year (2024) With Project (Ambient Growth + Other Development + Project)

## OPENING YEAR (2024) FORECASTING METHODOLOGY

### Regional Ambient Growth

To account for ambient growth, existing roadway volumes shall be increased by a growth rate of one percent (1.0%) per year over a three-year period for Opening Year (2024) conditions. This equates to a growth factor of 1.03.

### Other Development

In addition, a list of pending and approved other development projects shall be requested from the City of Carson. Trip forecasts for other development projects within the project study area shall be determined from the other development traffic study or calculated based on the Institute of Transportation Engineers (ITE), *Trip Generation Manual* and will be manually assigned to the study intersections.

## ON-SITE CIRCULATION AND DRIVE-THRU QUEUING

A drive-thru lane queue evaluation will be performed to determine if adequate queuing capacity is provided in the drive-thru window lane. The drive-thru lane queue evaluation will be based on historical drive-thru queue surveys which include pre-covid, mid-day counts for the following representative In-N-Out restaurant locations:

- Corona: 2305 Compton Ave, Corona, CA 92881
- Highland: 28009 Greenspot Rd, Highland, CA 92346
- Indio: 82043 Highway 111, Indio, CA 92201
- La Quinta: 78611 Highway 111, La Quinta, CA 92253
- Long Beach: 6391 E Pacific Coast Hwy, Long Beach, CA 90803
- Los Angeles: 9149 S Sepulveda Blvd, Los Angeles, CA 90045
- Redondo Beach: 3801 Inglewood Ave, Redondo Beach, CA 90278
- Thousand Palms: 72265 Varner Rd, Thousand Palms, CA 92276



If necessary, drive-thru management measures will be recommended to ensure drive-thru lane overflow, if any, does not conflict with site access and circulation.

### **VEHICLE MILES TRAVELED (VMT) ASSESSMENT**

A VMT letter report supplemental to the traffic study shall be submitted to provide VMT screening analysis for CEQA compliance based on State-recommended screening criteria or those adopted by City of Carson at the time of preparation. Based on preliminary review, the proposed project is anticipated to satisfy the screening criteria for local-serving retail (less than 50,000 square feet); therefore, the project may be presumed to result in a less than significant VMT impact. The VMT letter report shall include a narrative of VMT requirements under CEQA and documentation of the project screening results based on the applicable criteria.

### **CONCLUSION**

We appreciate the opportunity to provide this memorandum of understanding for your review. Should you have any questions or comments regarding the proposed scope, please contact me.

**Table 1**  
**Project Trip Generation**

Trip Generation Rates													
Land Use	Source <sup>1</sup>	Unit <sup>2</sup>	Midday Peak Hour			PM Peak Hour			Weekday Daily	Saturday midday			Saturday Daily
			% In	% Out	Rate	% In	% Out	Rate		% In	% Out	Rate	
In-N-Out Burger Restaurant	[a]	TSF	51%	49%	82.92	52%	48%	59.24	773.38	51%	49%	84.66	768.35

Trips Generated													
Land Use	Quantity	Unit <sup>2</sup>	Midday Peak Hour			PM Peak Hour			Daily	Saturday midday			Saturday Daily
			In	Out	Total	In	Out	Total		% In	% Out	Rate	
In-N-Out Burger Restaurant	3,885	TSF	164	158	322	121	109	230	3,005	167	162	329	2,985
Pass-by: 25% MD/Daily 50% PM	[b]		-41	-39	-80	-60	-55	-115	-751	-41	-41	-82	-746
<b>NET INCREASE IN TRIPS</b>			<b>123</b>	<b>119</b>	<b>242</b>	<b>61</b>	<b>54</b>	<b>115</b>	<b>2,254</b>	<b>126</b>	<b>121</b>	<b>247</b>	<b>2,239</b>

Notes:

(1) Source:

[a] = In-N-Out Burger restaurant trip generation determined from trip counts surveys (see Attachment A). In-N-Out closed during AM peak hours.

[b] = ITE *Trip Generation Handbook* (3rd Edition, 2017), pass-by rates calculated in accordance with procedures in the handbook. ITE pass-by rate for land use code ITE 934 (fast-food with drive-thru) is 49% AM and 50% PM. For time periods with no pass-by data provided in ITE *Trip Generation Handbook*, the pass-by rates are assumed as half of ITE peak hour rate.

(2) TSF = Thousand Square Feet





**Figure 1**  
**Regional Location Map**



Legend

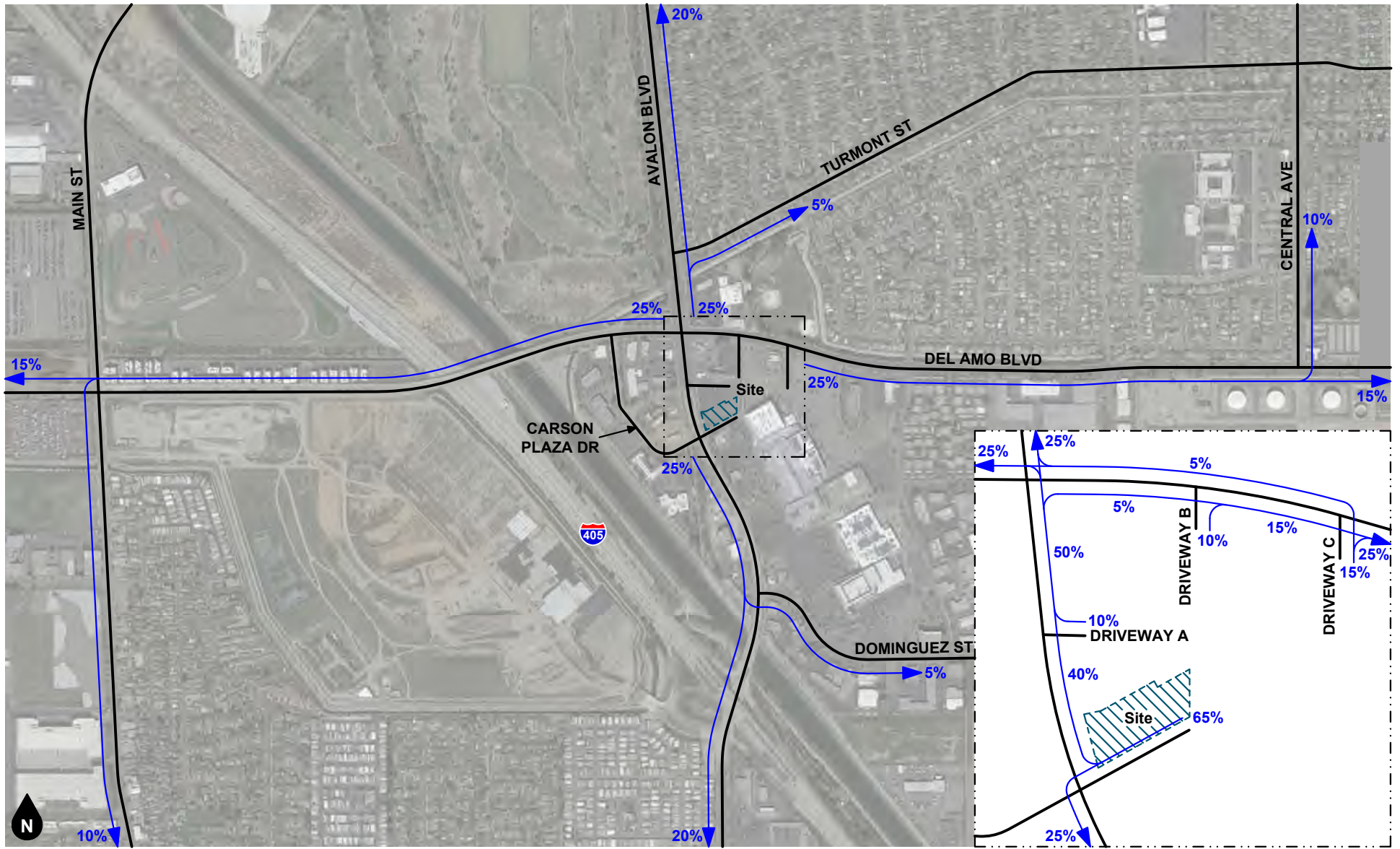
- # Study Intersection
- # Project Driveway

**Figure 2**  
**Project Location Map**





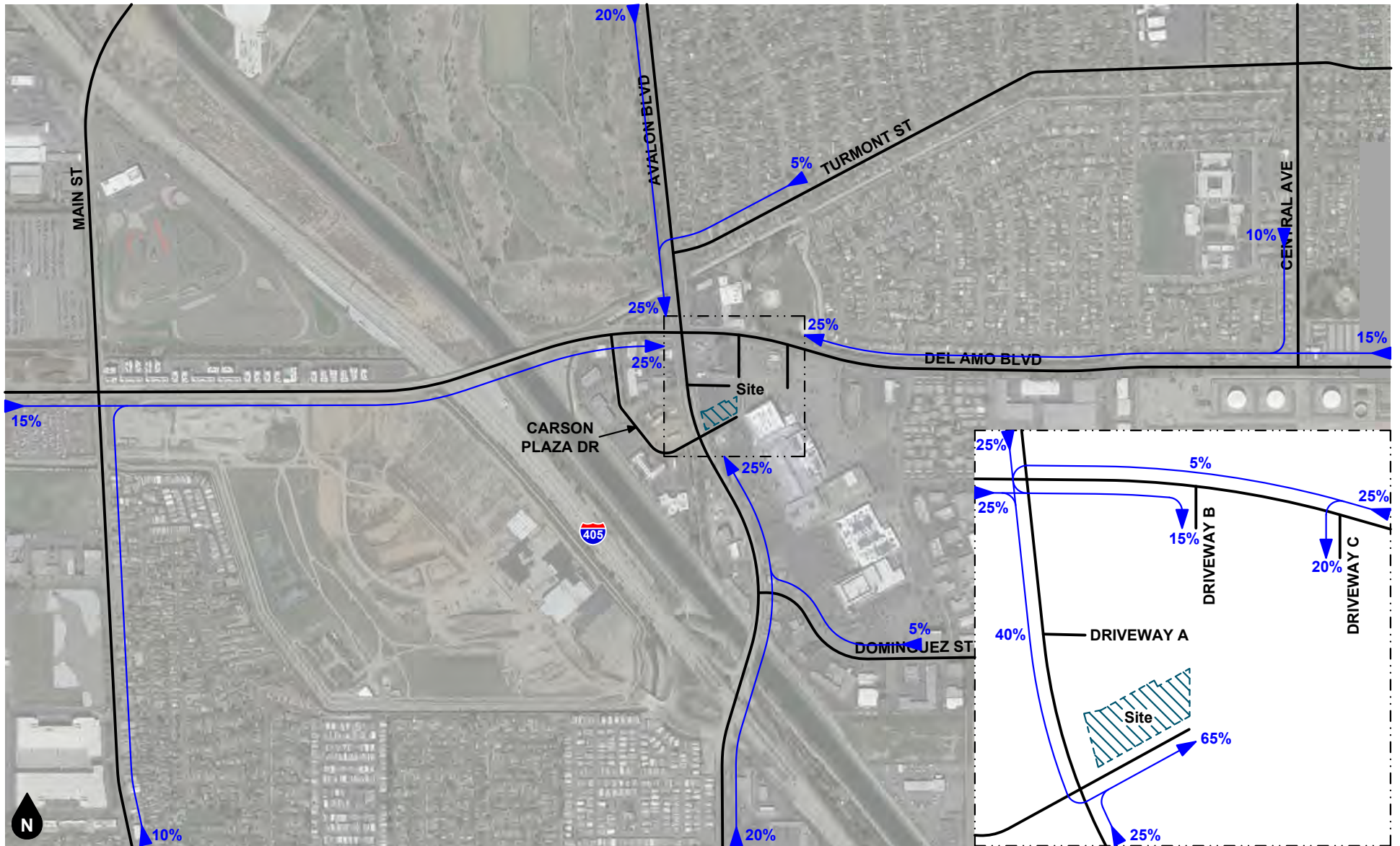
**Figure 3**  
**Site Plan**



Legend  
 ← 10% Percent From Project

**Figure 4**  
**Project Outbounded Trip Distribution**





Legend  
 ← 10% Percent To Project

**Figure 5**  
**Project Inbound Trip Distribution**

**ATTACHMENT A**  
**IN-N-OUT TRIP GENERATION DATA**



## In-N-Out Burger Restaurant (with Drive-Through Window)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday, peak hour of adjacent street traffic,  
One hour between 11 a.m. and 2 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 12

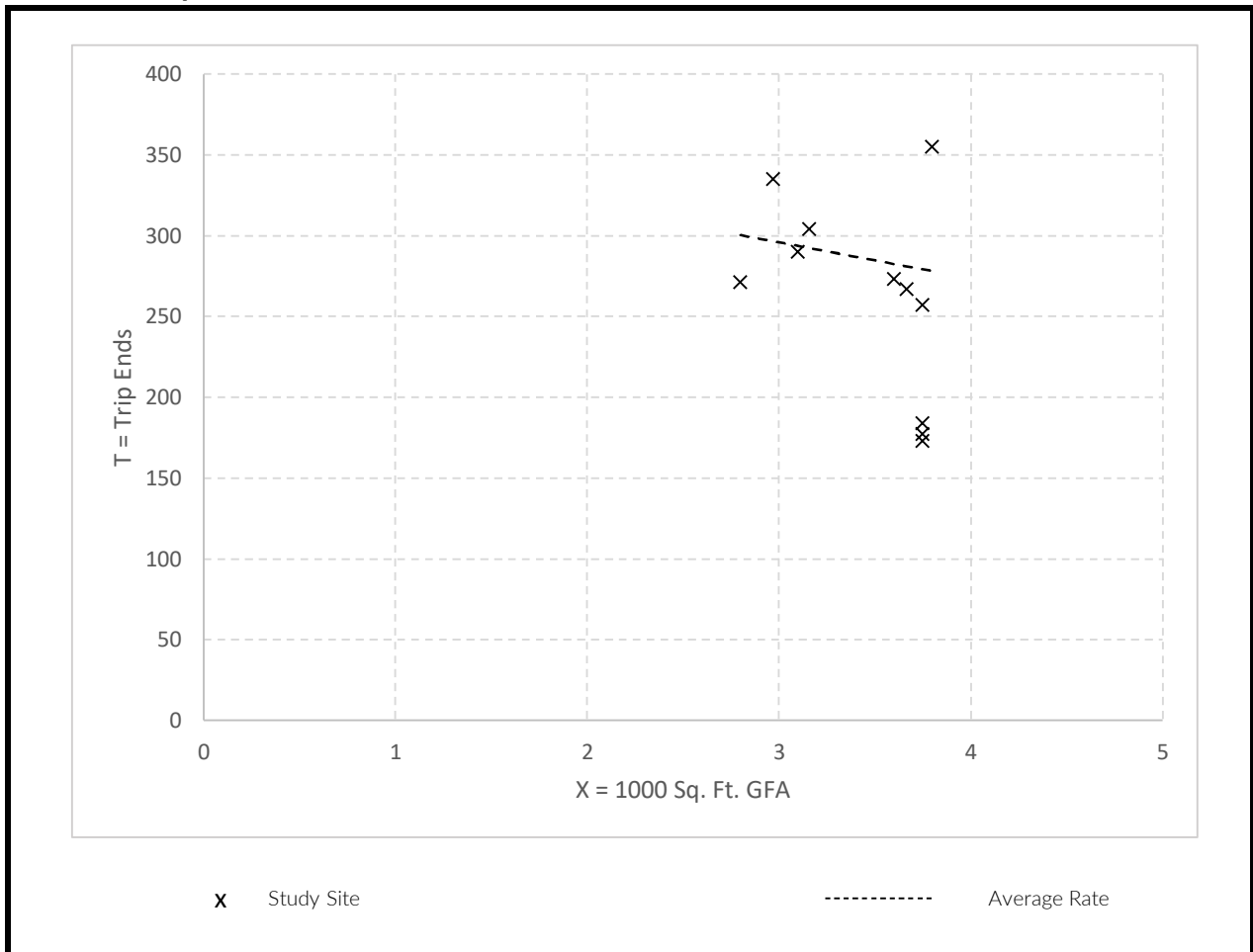
1000 Sq. Ft. GFA (Average): 3.487

Directional Distribution: 51% entering, 49% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
82.92	46.13 - 142.67	27.67

### Data Plot & Equation



Trip generation data for each site is provided on the attached count sheets.

Ganddini Group, Inc. (November 2020)

## In-N-Out Burger Restaurant (with Drive-Through Window)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday, peak hour of adjacent street traffic,  
One hour between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 12

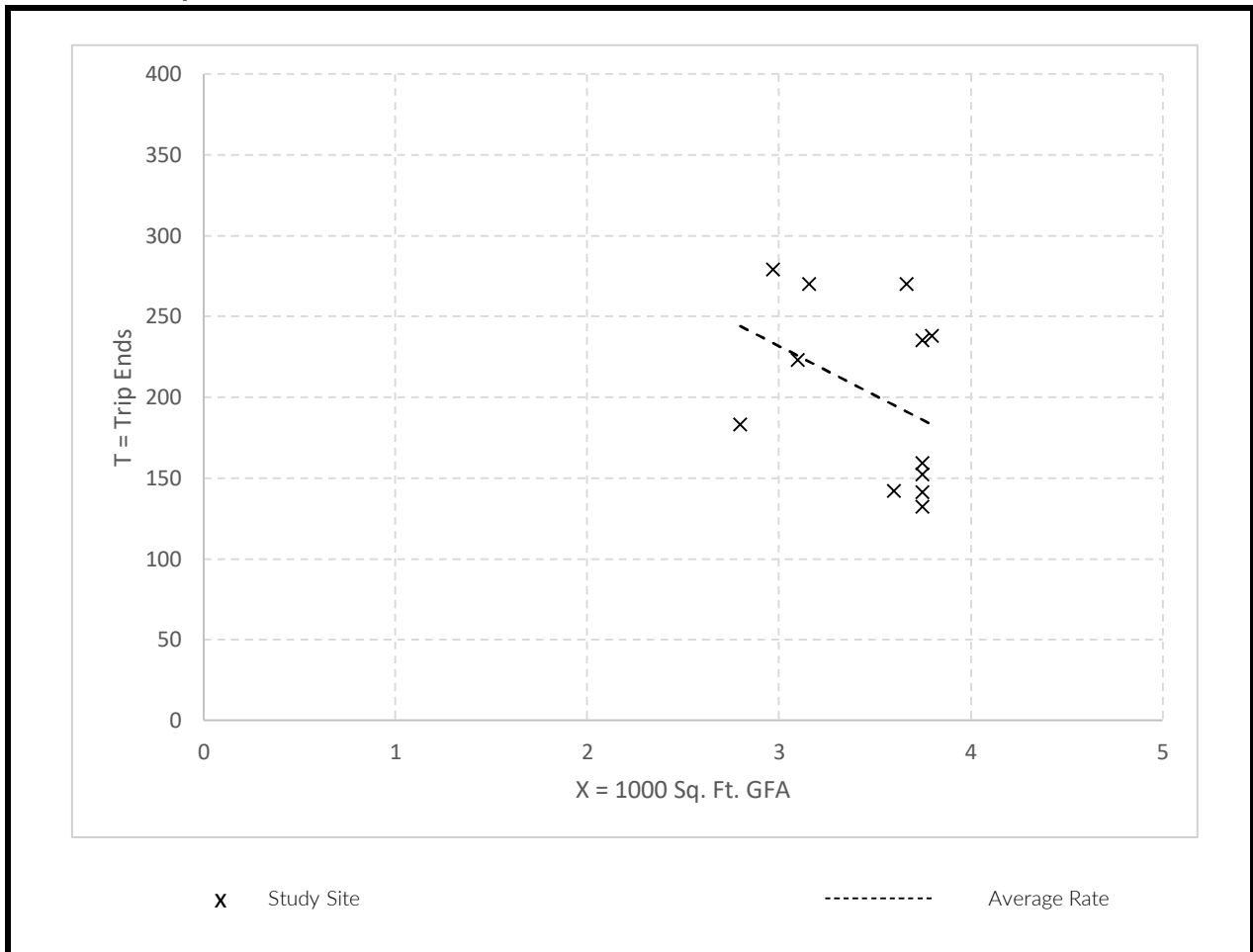
1000 Sq. Ft. GFA (Average): 3.487

Directional Distribution: 52% entering, 48% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
59.24	35.2 - 93.94	19.13

### Data Plot & Equation



Trip generation data for each site is provided on the attached count sheets.

Ganddini Group, Inc. (November 2020)



## In-N-Out Burger Restaurant (with Drive-Through Window)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 9

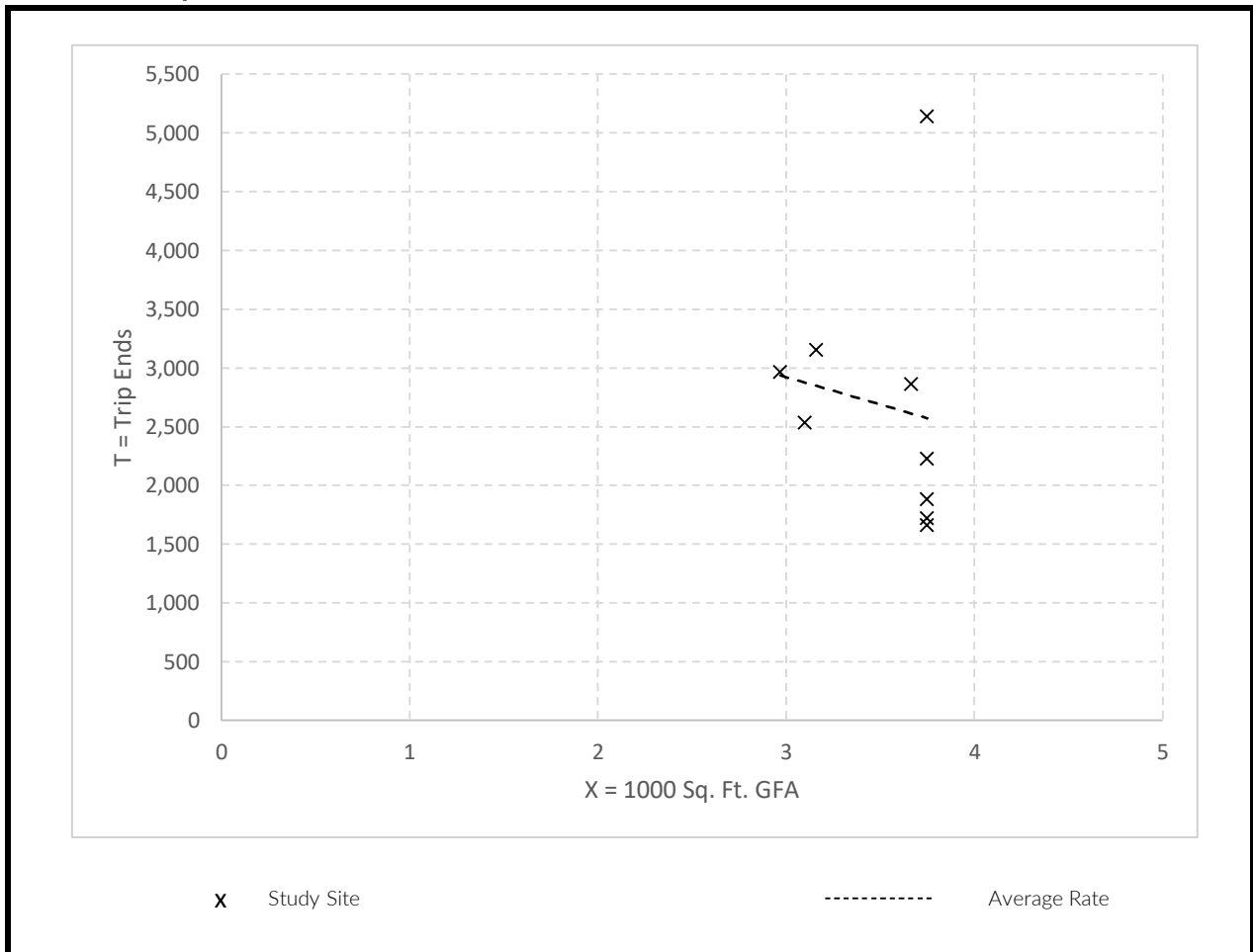
1000 Sq. Ft. GFA (Average): 3.516

Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
773.38	443.2 - 1369.87	462.54

### Data Plot & Equation



Trip generation data for each site is provided on the attached count sheets.

Ganddini Group, Inc. (November 2020)

## In-N-Out Burger Restaurant (with Drive-Through Window)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday

Setting/Location: General Urban/Suburban

Number of Studies: 6

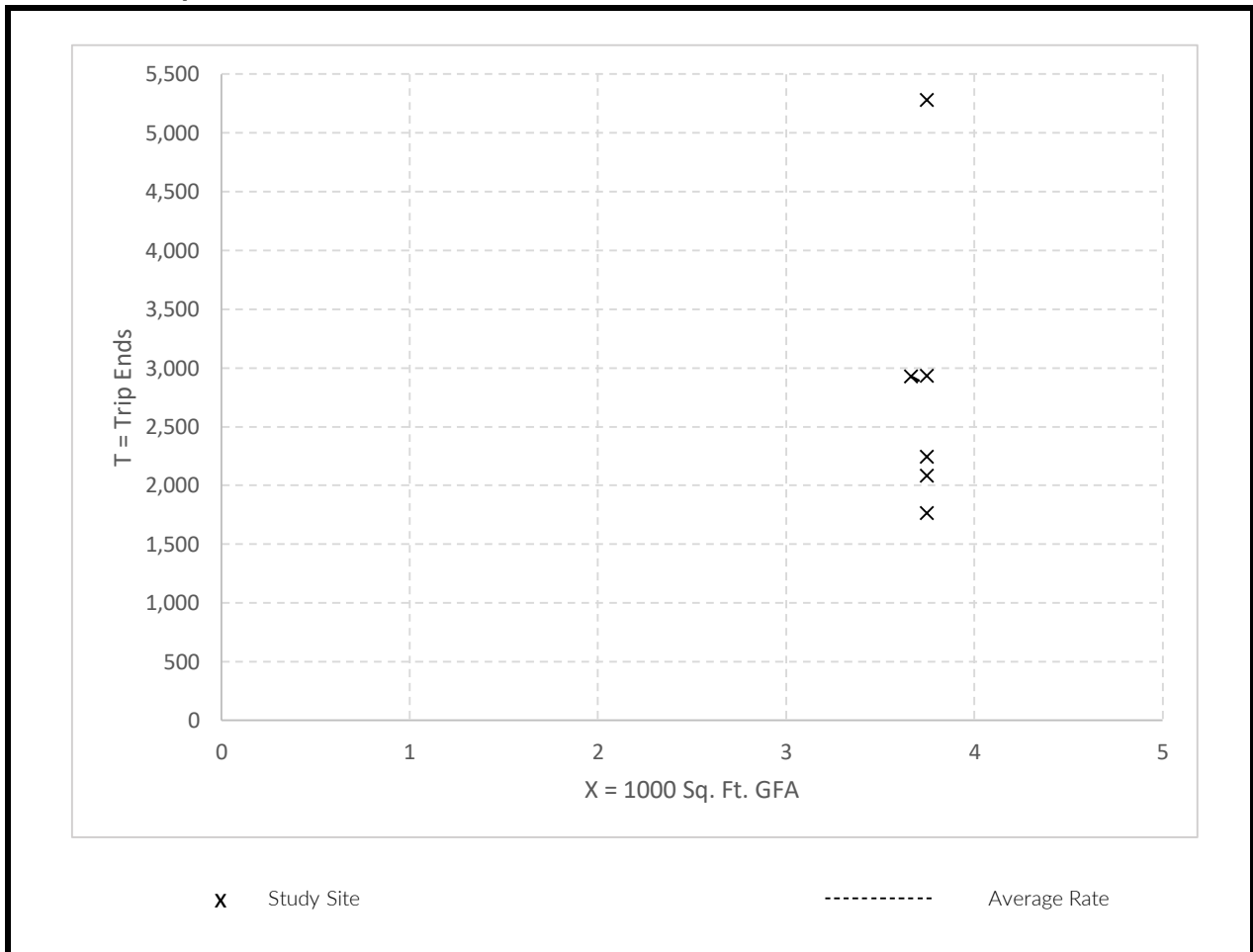
1000 Sq. Ft. GFA (Average): 3.736

Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
768.35	469.6 - 1408.27	585.69

### Data Plot & Equation



Trip generation data for each site is provided on the attached count sheets.

Ganddini Group, Inc. (November 2020)



### In-N-Out Site Survey and Average Trip Generation Rate Calculations

Surveyed Trip Count <sup>1</sup>														
Survey Site Location & Size				Mid-day Peak Hour			PM Peak Hour			Weekday Daily	Saturday Mid-Day			Saturday Daily
No.	City	Size	Unit <sup>2</sup>	In	Out	Rate	In	Out	Rate		In	Out	Rate	
1	Redwood City, CA	3,750	TSF	126	131	257	66	75	141	2,225	152	149	301	2,929
2	Rocklin, CA	3,750	TSF	90	83	173	84	75	159	1,720	88	96	184	1,761
3	Vacaville, CA	3,750	TSF	98	86	184	87	65	152	1,879	94	103	197	2,244
4	Fairfield, CA	3,750	TSF	96	81	177	75	57	132	1,662	105	103	208	2,081
5	Long Beach, CA	3,600	TSF	138	135	273	69	73	142	n/a	121	114	235	n/a
6	Los Angeles, CA	3,800	TSF	196	159	355	127	111	238	n/a	224	200	424	n/a
7	Redondo Beach, CA	2,800	TSF	136	135	271	94	89	183	n/a	164	146	310	n/a
8	Millbrae, CA	3,750	TSF	265	270	535	128	107	235	5,137	215	206	421	5,281
9	Mountain View	3,100	TSF	131	159	290	110	113	223	2,535	157	153	310	n/a
10	Mountain View	2,970	TSF	178	157	335	141	138	279	2,962	171	169	340	n/a
11	Union City	3,160	TSF	154	150	304	137	133	270	3,153	158	149	307	n/a
12	Rancho San Margarita	3,665	TSF	131	136	267	137	133	270	2,864	145	101	246	2,924
Average		3,487	TSF	145	140	285	105	97	202	2,682	150	140	290	2,870

Surveyed Trip Generation														
Survey Site Location & Size				Mid-day Peak Hour			PM Peak Hour			Weekday Daily	Saturday Mid-Day			Saturday Daily
No.	City	Size	Unit <sup>2</sup>	% In	% Out	Rate	% In	% Out	Rate		% In	% Out	Rate	
1	Redwood City, CA	3,750	TSF	49%	51%	68.53	47%	53%	37.60	593.33	50%	50%	80.27	781.07
2	Rocklin, CA	3,750	TSF	52%	48%	46.13	53%	47%	42.40	458.67	48%	52%	49.07	469.6
3	Vacaville, CA	3,750	TSF	53%	47%	49.07	57%	43%	40.53	501.07	48%	52%	52.53	598.4
4	Fairfield, CA	3,750	TSF	54%	46%	47.20	57%	43%	35.20	443.20	50%	50%	55.47	554.93
5	Long Beach, CA	3,600	TSF	51%	49%	75.83	49%	51%	39.44	n/a	51%	49%	65.28	n/a
6	Los Angeles, CA	3,800	TSF	55%	45%	93.42	53%	47%	62.63	n/a	53%	47%	111.58	n/a
7	Redondo Beach, CA	2,800	TSF	50%	50%	96.79	51%	49%	65.36	n/a	53%	47%	110.71	n/a
8	Millbrae, CA	3,750	TSF	50%	50%	142.67	54%	46%	62.67	1,369.87	51%	49%	112.27	1408.27
9	Mountain View	3,100	TSF	45%	55%	93.55	49%	51%	71.94	817.74	51%	49%	100.00	n/a
10	Mountain View	2,970	TSF	53%	47%	112.79	51%	49%	93.94	997.31	50%	50%	114.48	n/a
11	Union City	3,160	TSF	51%	49%	96.20	51%	49%	85.44	997.78	51%	49%	97.15	n/a
12	Rancho San Margarita	3,665	TSF	49%	51%	72.85	51%	49%	73.67	781.45	59%	41%	67.12	797.82
Average (per TSF)		3,487	TSF	51%	49%	82.92	52%	48%	59.24	773.38	51%	49%	84.66	768.35
Fast-Food Restaurant With Drive-Thru		ITE 934 <sup>4</sup>	TSF	-	-	-	52%	48%	32.67	470.95	51%	49%	54.86	616.12
Difference (Avg. Survey Rate - ITE Rate)				51%	49%	+82.92	-	-	+26.57	+302.43	0%	0%	+29.80	+152.23
Percent Difference				100%	100%	100%	0%	0%	+81.3%	+64.2%	-	-	+54.3%	+24.7%

**Notes:**

- (1) Historic survey conducted at various In-N-Out locations in California.
- (2) TSF = Thousand Square Feet
- (3) n/a = not applicable (counts not collected at this location for this time period).
- (4) Source: ITE = Institute of Transportation Engineers, Trip Generation Manual (10th Edition, 2017); ### = Land Use Code(s).

**REDWOOD CITY**

**(949 Veterans Blvd, Redwood City, CA 94063)**



Wednesday, May 27, 2015

CITY: Redwood City

PROJECT: SC0629

949 Veterans Blvd							Prepared by AimTD LLC tel. 951 249 3226				
AM Period	INI	OUT1	PM Period	INI	OUT1						
00:00	7	2	12:00	11	18						
00:15	0	1	12:15	14	22						
00:30	3	2	12:30	6	20						
00:45	1	11	0	5	16	12:45	4	35	14	74	109
01:00	0	1	13:00	2	16						
01:15	0	0	13:15	7	32						
01:30	0	0	13:30	12	16						
01:45	0	0	0	1	1	13:45	14	35	13	77	112
02:00	0	0	14:00	13	11						
02:15	0	0	14:15	17	12						
02:30	0	0	14:30	12	7						
02:45	0	0	0	0	14:45	9	51	13	43	94	
03:00	0	0	15:00	14	13						
03:15	0	0	15:15	6	15						
03:30	0	0	15:30	8	13						
03:45	0	0	0	0	15:45	7	35	11	52	87	
04:00	0	0	16:00	8	6						
04:15	1	0	16:15	11	8						
04:30	0	0	16:30	7	5						
04:45	0	1	0	0	16:45	7	33	9	28	61	
05:00	2	2	17:00	5	12						
05:15	0	0	17:15	7	8						
05:30	1	1	17:30	5	8						
05:45	1	4	1	4	8	17:45	11	28	3	31	59
06:00	1	0	18:00	4	5						
06:15	0	0	18:15	11	8						
06:30	1	0	18:30	16	9						
06:45	0	2	0	0	2	18:45	8	39	12	34	73
07:00	0	0	19:00	8	9						
07:15	1	0	19:15	8	9						
07:30	0	0	19:30	3	4						
07:45	0	1	0	0	1	19:45	9	28	7	29	57
08:00	0	0	20:00	5	8						
08:15	0	0	20:15	6	12						
08:30	0	0	20:30	7	4						
08:45	1	1	0	0	1	20:45	9	27	2	26	53
09:00	0	0	21:00	11	8						
09:15	0	0	21:15	13	7						
09:30	0	1	21:30	11	5						
09:45	0	0	0	1	1	21:45	5	40	9	29	69
10:00	2	1	22:00	10	9						
10:15	4	0	22:15	9	9						
10:30	1	6	22:30	5	7						
10:45	2	9	3	10	19	22:45	5	29	9	34	63
11:00	8	1	23:00	3	5						
11:15	5	5	23:15	2	6						
11:30	10	7	23:30	2	2						
11:45	14	37	11	24	61	23:45	1	8	0	13	21
<b>Total Vol.</b>	<b>66</b>	<b>45</b>	<b>111</b>	<b>388</b>	<b>470</b>	<b>858</b>	<b>Daily Totals</b>				
				<b>INI</b>	<b>OUT1</b>	<b>Combined</b>					
				454	515	969					
	<b>AM</b>		<b>PM</b>								
<b>Split %</b>	59.5%	40.5%	11.5%	45.2%	54.8%	88.5%					
<b>Peak Hour</b>	11:30	11:45	11:45	13:30	12:30	13:15					
<b>Volume</b>	49	71	116	56	82	118					
<b>P.H.F.</b>	0.88	0.81	0.81	0.93	0.64	0.81					

pacific@aimtd.com

Tell. 951 249 3226

Wednesday, May 27, 2015

CITY: Redwood City

PROJECT: SC0629

949 Veterans Blvd							Prepared by AimTD LLC tel. 951 249 3226				
AM Period	INI	OUT1	PM Period	INI	OUT1						
00:00	2	2	12:00	22	11						
00:15	9	8	12:15	21	21						
00:30	2	8	12:30	20	20						
00:45	4	17	4	22	39	12:45	17	80	12	64	144
01:00	0	4	13:00	19	19						
01:15	0	0	13:15	20	14						
01:30	0	0	13:30	14	19						
01:45	0	0	0	4	4	13:45	14	67	12	64	131
02:00	0	2	14:00	7	11						
02:15	0	0	14:15	11	6						
02:30	0	0	14:30	16	10						
02:45	0	0	0	2	2	14:45	15	49	13	40	89
03:00	0	0	15:00	15	12						
03:15	0	0	15:15	4	7						
03:30	0	0	15:30	5	9						
03:45	0	0	0	0	15:45	7	31	8	36	67	
04:00	0	0	16:00	12	8						
04:15	0	0	16:15	6	9						
04:30	0	0	16:30	6	4						
04:45	0	0	0	0	16:45	10	34	9	30	64	
05:00	0	0	17:00	11	8						
05:15	0	0	17:15	11	12						
05:30	1	0	17:30	10	9						
05:45	0	1	0	0	1	17:45	8	40	8	37	77
06:00	0	0	18:00	12	9						
06:15	0	1	18:15	16	9						
06:30	0	0	18:30	9	16						
06:45	0	0	0	1	1	18:45	7	44	10	44	88
07:00	0	0	19:00	14	22						
07:15	1	0	19:15	12	11						
07:30	0	0	19:30	13	8						
07:45	0	1	0	0	1	19:45	13	52	11	52	104
08:00	0	0	20:00	11	9						
08:15	0	0	20:15	10	7						
08:30	0	0	20:30	9	10						
08:45	0	0	1	1	1	20:45	4	34	9	35	69
09:00	2	1	21:00	19	11						
09:15	0	0	21:15	19	12						
09:30	2	1	21:30	14	12						
09:45	3	7	1	3	10	21:45	15	67	13	48	115
10:00	1	1	22:00	6	12						
10:15	3	1	22:15	10	12						
10:30	5	6	22:30	15	9						
10:45	4	13	2	10	23	22:45	8	39	12	45	84
11:00	20	5	23:00	10	10						
11:15	9	12	23:15	5	10						
11:30	11	10	23:30	2	5						
11:45	18	58	8	35	93	23:45	3	20	4	29	49
<b>Total Vol.</b>	<b>97</b>	<b>78</b>	<b>175</b>	<b>557</b>	<b>524</b>	<b>1081</b>	<b>Daily Totals</b>				
				<b>INI</b>	<b>OUT1</b>	<b>Combined</b>					
				654	602	1256					
	<b>AM</b>		<b>PM</b>								
<b>Split %</b>	55.4%	44.6%	13.9%	51.5%	48.5%	86.1%					
<b>Peak Hour</b>	11:45	11:45	11:45	12:00	12:15	12:15					
<b>Volume</b>	81	60	141	80	72	149					
<b>P.H.F.</b>	0.92	0.71	0.84	0.94	0.86	0.84					

pacific@aimtd.com

Tell. 951 249 3226

**ROCKLIN**

**(5490 Crossings Dr, Rocklin, CA 95677)**



**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

Thursday, February 04, 2016				CITY: Rocklin Dwy 1		PROJECT: sc0824	
Prepared by AimTD LLC tel. 714.253.7000							
AM Period	in	out	PM Period	in	out		
00:00	0	0	12:00	21	16		
00:15	0	0	12:15	16	23		
00:30	0	0	12:30	15	22		
00:45	0	0	12:45	17	69	17	78
147							
01:00	0	0	13:00	7	23		
01:15	0	0	13:15	13	16		
01:30	0	0	13:30	10	15		
01:45	0	0	13:45	20	50	10	64
114							
02:00	0	0	14:00	18	13		
02:15	0	0	14:15	16	14		
02:30	0	0	14:30	5	21		
02:45	0	0	14:45	20	59	9	57
116							
03:00	0	0	15:00	12	7		
03:15	0	0	15:15	19	13		
03:30	0	0	15:30	10	14		
03:45	0	0	15:45	8	49	15	49
98							
04:00	0	0	16:00	15	14		
04:15	0	0	16:15	10	19		
04:30	0	0	16:30	14	18		
04:45	0	0	16:45	13	52	12	63
115							
05:00	0	0	17:00	11	19		
05:15	0	0	17:15	17	18		
05:30	0	0	17:30	30	11		
05:45	0	0	17:45	11	69	17	65
134							
06:00	0	0	18:00	6	20		
06:15	0	0	18:15	11	18		
06:30	0	0	18:30	13	20		
06:45	0	0	18:45	18	48	18	76
124							
07:00	0	0	19:00	5	20		
07:15	0	0	19:15	17	21		
07:30	0	0	19:30	12	14		
07:45	0	0	19:45	14	48	14	69
117							
08:00	2	0	20:00	15	12		
08:15	0	1	20:15	17	11		
08:30	3	0	20:30	15	10		
08:45	2	7	20:45	5	52	15	48
100							
09:00	4	3	21:00	7	13		
09:15	4	1	21:15	8	13		
09:30	2	2	21:30	4	12		
09:45	1	11	21:45	6	25	14	52
77							
10:00	4	3	22:00	8	6		
10:15	10	2	22:15	1	12		
10:30	12	7	22:30	1	1		
10:45	22	48	22:45	3	13	1	20
33							
11:00	24	19	23:00	4	6		
11:15	31	15	23:15	1	5		
11:30	12	23	23:30	0	4		
11:45	16	83	23:45	0	5	1	16
21							
<b>Total Vol.</b>	<b>149</b>	<b>107</b>	<b>256</b>	<b>539</b>	<b>657</b>	<b>1196</b>	
				<b>Daily Totals</b>			
				in	out	<b>Combined</b>	
				688	764	<b>1452</b>	
<b>AM</b>				<b>PM</b>			
<b>Split %</b>	58.2%	41.8%	<b>17.6%</b>	45.1%	54.9%	<b>82.4%</b>	
<b>Peak Hour</b>	10:30	11:30	<b>11:00</b>	16:45	12:15	<b>12:00</b>	
<b>Volume</b>	89	79	<b>157</b>	71	85	<b>147</b>	
<b>P.H.F.</b>	0.72	0.86	<b>0.85</b>	0.85	0.92	<b>0.85</b>	

Thursday, February 04, 2016				CITY: Rocklin Dwy 2		PROJECT: sc0824	
Prepared by AimTD LLC tel. 714.253.7000							
AM Period	in	out	PM Period	in	out		
00:00	0	0	12:00	2	4		
00:15	0	0	12:15	1	2		
00:30	0	0	12:30	4	4		
00:45	0	0	12:45	1	8	4	14
22							
01:00	0	0	13:00	6	7		
01:15	0	0	13:15	2	2		
01:30	0	0	13:30	6	2		
01:45	0	0	13:45	2	16	2	13
29							
02:00	0	0	14:00	2	4		
02:15	0	0	14:15	2	2		
02:30	0	0	14:30	3	2		
02:45	0	0	14:45	2	9	0	8
17							
03:00	0	0	15:00	7	3		
03:15	0	0	15:15	1	3		
03:30	0	0	15:30	3	2		
03:45	0	0	15:45	7	18	0	8
26							
04:00	0	0	16:00	4	2		
04:15	0	0	16:15	4	2		
04:30	0	0	16:30	4	1		
04:45	0	0	16:45	7	19	2	7
26							
05:00	0	0	17:00	2	3		
05:15	0	0	17:15	4	3		
05:30	0	0	17:30	3	1		
05:45	0	0	17:45	6	15	3	10
25							
06:00	0	0	18:00	8	2		
06:15	0	0	18:15	6	1		
06:30	0	0	18:30	6	0		
06:45	0	0	18:45	3	23	1	4
27							
07:00	0	0	19:00	5	1		
07:15	0	0	19:15	1	0		
07:30	0	0	19:30	5	0		
07:45	0	0	19:45	2	13	1	2
15							
08:00	0	0	20:00	6	4		
08:15	0	0	20:15	0	1		
08:30	0	0	20:30	7	2		
08:45	1	1	20:45	5	18	1	8
26							
09:00	0	1	21:00	3	4		
09:15	0	1	21:15	2	2		
09:30	0	1	21:30	2	1		
09:45	1	1	21:45	2	9	0	7
16							
10:00	0	0	22:00	5	1		
10:15	2	0	22:15	1	0		
10:30	0	0	22:30	1	0		
10:45	1	3	22:45	1	8	0	1
9							
11:00	1	4	23:00	1	1		
11:15	4	0	23:15	0	0		
11:30	1	1	23:30	0	0		
11:45	1	7	23:45	2	3	0	1
4							
<b>Total Vol.</b>	<b>12</b>	<b>14</b>	<b>26</b>	<b>159</b>	<b>83</b>	<b>242</b>	
				<b>Daily Totals</b>			
				in	out	<b>Combined</b>	
				171	97	<b>268</b>	
<b>AM</b>				<b>PM</b>			
<b>Split %</b>	46.2%	53.8%	<b>9.7%</b>	65.7%	34.3%	<b>90.3%</b>	
<b>Peak Hour</b>	11:15	11:45	<b>11:45</b>	17:45	12:15	<b>17:45</b>	
<b>Volume</b>	8	14	<b>22</b>	26	17	<b>32</b>	
<b>P.H.F.</b>	0.50	0.88	<b>0.69</b>	0.81	0.61	<b>0.69</b>	

**VACAVILLE**

**(170 Nut Tree Pkwy, Vacaville, CA 95687)**





**FAIRFIELD**

**(1364 Holiday Ln, Fairfield, CA 94534)**

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

Thursday, February 04, 2016									
CITY: Fairfield					PROJECT: sc0824				
Prepared by AimTD LLC tel. 714.253.7000									
AM Period	in	out	PM Period	in	out				
00:00	0	0	12:00	21	17				
00:15	0	0	12:15	21	20				
00:30	0	0	12:30	27	18				
00:45	0	0	12:45	27	96	24	79	175	
01:00	0	0	13:00	21	19				
01:15	0	0	13:15	16	19				
01:30	0	0	13:30	9	23				
01:45	0	0	13:45	20	66	19	80	146	
02:00	0	0	14:00	22	19				
02:15	0	0	14:15	20	25				
02:30	0	0	14:30	17	18				
02:45	0	0	14:45	16	75	17	79	154	
03:00	0	0	15:00	12	17				
03:15	0	0	15:15	19	20				
03:30	0	0	15:30	20	18				
03:45	0	0	15:45	28	79	23	78	157	
04:00	0	0	16:00	17	16				
04:15	0	0	16:15	24	18				
04:30	0	0	16:30	20	13				
04:45	0	0	16:45	14	75	10	57	132	
05:00	0	0	17:00	11	14				
05:15	0	0	17:15	12	14				
05:30	0	0	17:30	16	17				
05:45	0	0	17:45	9	48	17	62	110	
06:00	0	0	18:00	14	14				
06:15	0	0	18:15	21	15				
06:30	0	0	18:30	14	17				
06:45	0	0	18:45	10	59	15	61	120	
07:00	0	0	19:00	17	12				
07:15	0	0	19:15	19	18				
07:30	0	0	19:30	11	19				
07:45	0	0	19:45	17	64	15	64	128	
08:00	2	3	20:00	12	13				
08:15	2	3	20:15	10	14				
08:30	4	2	20:30	12	11				
08:45	5	13	20:45	3	37	8	46	83	
09:00	6	5	21:00	12	5				
09:15	2	5	21:15	3	8				
09:30	9	7	21:30	9	18				
09:45	11	28	21:45	6	30	7	38	68	
10:00	8	6	22:00	6	6				
10:15	12	5	22:15	6	3				
10:30	15	9	22:30	8	10				
10:45	14	49	22:45	6	26	9	28	54	
11:00	17	12	23:00	6	11				
11:15	14	17	23:15	5	6				
11:30	12	18	23:30	2	2				
11:45	25	68	23:45	5	18	5	24	42	
<b>Total Vol.</b>	158	135	<b>293</b>	673	696	<b>1369</b>			
<b>Daily Totals</b>									
in out <b>Combined</b>									
831 831 <b>1662</b>									
<b>AM</b>									
<b>Split %</b>	53.9%	46.1%	<b>17.6%</b>	49.2%	50.8%	<b>82.4%</b>			
<b>Peak Hour</b>	11:45	11:30	<b>11:45</b>	12:00	13:30	<b>12:15</b>			
<b>Volume</b>	94	73	<b>167</b>	96	86	<b>177</b>			
<b>P.H.F.</b>	0.87	0.91	<b>0.93</b>	0.89	0.86	<b>0.93</b>			

Saturday, February 06, 2016									
CITY: Fairfield					PROJECT: sc0824				
Prepared by AimTD LLC tel. 714.253.7000									
AM Period	in	out	PM Period	in	out				
00:00	0	0	12:00	34	22				
00:15	0	0	12:15	24	30				
00:30	0	0	12:30	22	28				
00:45	0	0	12:45	25	105	23	103	208	
01:00	0	0	13:00	24	20				
01:15	0	0	13:15	20	13				
01:30	0	0	13:30	18	20				
01:45	0	0	13:45	27	89	21	74	163	
02:00	0	0	14:00	12	28				
02:15	0	0	14:15	23	20				
02:30	0	0	14:30	19	18				
02:45	0	0	14:45	17	71	18	84	155	
03:00	0	0	15:00	18	13				
03:15	0	0	15:15	18	27				
03:30	0	0	15:30	18	18				
03:45	0	0	15:45	25	79	24	82	161	
04:00	0	0	16:00	16	21				
04:15	0	0	16:15	26	15				
04:30	0	0	16:30	30	18				
04:45	0	0	16:45	26	98	26	80	178	
05:00	0	0	17:00	28	32				
05:15	0	0	17:15	25	22				
05:30	0	0	17:30	27	20				
05:45	0	0	17:45	32	112	17	91	203	
06:00	0	0	18:00	22	15				
06:15	0	0	18:15	25	22				
06:30	0	0	18:30	30	24				
06:45	0	0	18:45	21	98	20	81	179	
07:00	0	0	19:00	20	22				
07:15	0	0	19:15	9	12				
07:30	0	0	19:30	19	18				
07:45	0	0	19:45	21	69	23	75	144	
08:00	0	0	20:00	19	18				
08:15	1	0	20:15	14	20				
08:30	3	2	20:30	9	14				
08:45	3	7	20:45	5	47	18	70	117	
09:00	5	0	21:00	14	14				
09:15	2	2	21:15	14	11				
09:30	5	2	21:30	20	20				
09:45	5	17	21:45	11	59	16	61	120	
10:00	6	4	22:00	11	10				
10:15	7	5	22:15	9	14				
10:30	8	8	22:30	9	12				
10:45	15	36	22:45	33	62	15	51	113	
11:00	17	13	23:00	6	13				
11:15	13	14	23:15	5	19				
11:30	19	18	23:30	4	19				
11:45	23	72	23:45	4	19	29	80	99	
<b>Total Vol.</b>	132	109	<b>241</b>	908	932	<b>1840</b>			
<b>Daily Totals</b>									
in out <b>Combined</b>									
1040 1041 <b>2081</b>									
<b>AM</b>									
<b>Split %</b>	54.8%	45.2%	<b>11.6%</b>	49.3%	50.7%	<b>88.4%</b>			
<b>Peak Hour</b>	11:45	11:45	<b>11:45</b>	17:00	12:00	<b>12:00</b>			
<b>Volume</b>	103	103	<b>206</b>	112	103	<b>208</b>			
<b>P.H.F.</b>	0.76	0.86	<b>0.92</b>	0.96	0.86	<b>0.92</b>			

**LONG BEACH**

**(6391 E Pacific Coast Highway, Long Beach, CA 90803)**



AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	31	25	15		
00:15				12:15	30	15	15		
00:30				12:30	52	50	13		
00:45				12:45	25	138	29	119	8
01:00				13:00	29	29	12		
01:15				13:15	32	27	13		
01:30				13:30	18	23	8		
01:45				13:45	X	79	X	79	7
02:00				14:00			8		
02:15				14:15			7		
02:30				14:30			8		
02:45				14:45			6		
03:00				15:00			6		
03:15				15:15			5		
03:30				15:30			4		
03:45				15:45			5		
04:00				16:00	16	19	6		
04:15				16:15	12	17	5		
04:30				16:30	14	14	3		
04:45				16:45	16	58	10	60	6
05:00				17:00	19	14	5		
05:15				17:15	20	19	7		
05:30				17:30	19	19	7		
05:45				17:45	11	69	21	73	5
06:00				18:00	17	20	12		
06:15				18:15	X	X	7		
06:30				18:30	X	X	10		
06:45				18:45	X	17	X	20	12
07:00				19:00			10		
07:15				19:15			11		
07:30				19:30			7		
07:45				19:45			6		
08:00				20:00			8		
08:15				20:15			6		
08:30				20:30			9		
08:45				20:45			10		
09:00				21:00			12		
09:15				21:15			16		
09:30				21:30			14		
09:45				21:45			15		
10:00				22:00			14		
10:15			5	22:15			13		
10:30			8	22:30			12		
10:45			7	22:45			12		
11:00			3	23:00			11		
11:15			6	23:15			13		
11:30	19	25	7	23:30			9		
11:45	21	40	27	52	14	23:45	8		
<b>Total Vol.</b>	<b>40</b>	<b>52</b>				<b>361</b>	<b>351</b>		

Daily Total
IN 401
OUT 361

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**LOS ANGELES**

**(9149 S SEPULVEDA BLVD, LOS ANGELES, CA 90045)**

05.16.2012

Wednesday, May 16th, 2012

CITY: Los Angeles

PROJECT: In-N-Out Burger

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE
00:00				12:00	39	35	20
00:15				12:15	48	36	18
00:30				12:30	52	37	21
00:45				12:45	57	41	19
					196	149	
01:00				13:00	39	45	22
01:15				13:15	36	46	21
01:30				13:30	35	41	20
01:45				13:45	X	X	20
					110	132	
02:00				14:00			21
02:15				14:15			21
02:30				14:30			22
02:45				14:45			21
03:00				15:00			18
03:15				15:15			17
03:30				15:30			16
03:45				15:45			18
04:00				16:00	31	24	17
04:15				16:15	18	18	15
04:30				16:30	27	28	12
04:45				16:45	33	22	10
					109	92	
05:00				17:00	34	30	9
05:15				17:15	25	33	14
05:30				17:30	36	23	17
05:45				17:45	32	25	19
					127	111	
06:00				18:00	30	36	20
06:15				18:15			19
06:30				18:30			20
06:45				18:45			18
07:00				19:00			17
07:15				19:15			18
07:30				19:30			19
07:45				19:45			20
08:00				20:00			21
08:15				20:15			19
08:30				20:30			19
08:45				20:45			20
09:00				21:00			18
09:15				21:15			19
09:30				21:30			20
09:45				21:45			19
10:00			0	22:00			21
10:15			2	22:15			17
10:30			5	22:30			16
10:45			6	22:45			14
11:00			6	23:00			16
11:15			12	23:15			17
11:30	28	32	16	23:30			15
11:45	31	59	29	23:45	61	120	19
							23:45
<b>Total Vol.</b>	59	61				542	484

Daily Totals		
IN		OUT
601		545

PACIFIC TRAFFIC & TRANSIT DATA SERVICES



**REDONDO BEACH**

**(3801 Inglewood Ave, Redondo Beach, CA 90278)**

Prepared by

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	32	24	23		
00:15				12:15	42	42	26		
00:30				12:30	36	29	11		
00:45				12:45	27	137	38	133	11
01:00				13:00	31	26	17		
01:15				13:15	28	23	16		
01:30				13:30	32	31	11		
01:45				13:45	X	91	X	80	9
02:00				14:00			10		
02:15				14:15			8		
02:30				14:30			15		
02:45				14:45			13		
03:00				15:00			10		
03:15				15:15			12		
03:30				15:30			14		
03:45				15:45			13		
04:00				16:00	17	16	16		
04:15				16:15	18	19	19		
04:30				16:30	29	24	17		
04:45				16:45	18	82	23	82	18
05:00				17:00	28	23	22		
05:15				17:15	19	19	24		
05:30				17:30	24	21	23		
05:45				17:45	28	99	21	84	16
06:00				18:00	13	26	18		
06:15				18:15	X	X	23		
06:30				18:30	X	X	25		
06:45				18:45	X	13	X	26	26
07:00				19:00			23		
07:15				19:15			27		
07:30				19:30			19		
07:45				19:45			21		
08:00				20:00			23		
08:15				20:15			22		
08:30				20:30			18		
08:45				20:45			28		
09:00				21:00			27		
09:15				21:15			16		
09:30				21:30			17		
09:45				21:45			16		
10:00			4	22:00			15		
10:15			8	22:15			18		
10:30			6	22:30			19		
10:45			6	22:45			16		
11:00			11	23:00			15		
11:15			21	23:15			13		
11:30	24	34	23	23:30			12		
11:45	25	49	37	23:45			71	11	

**Total Vol.**      49      71

422      405

Daily Total	
IN	<b>471</b>
OUT	<b>476</b>

**MILLBRAE**

**(11 Rollins Rd, Millbrae, CA 94030)**



Wednesday, May 27, 2015

CITY: Millbrae

PROJECT: SC0629

Prepared by AimTD LLC tel. 951 249 3226

11 Rollings Rd			PM Period			IN1			OUT1			
AM Period	IN1	OUT1	PM Period	IN1	OUT1	PM Period	IN1	OUT1	PM Period	IN1	OUT1	
00:00	20	10	12:00	49	53							
00:15	27	34	12:15	60	74							
00:30	8	15	12:30	47	63							
00:45	2	57	14	73	130	12:45	55	211	57	247	458	
01:00	1	5	13:00	40	51							
01:15	0	3	13:15	52	56							
01:30	1	1	13:30	35	51							
01:45	1	3	1	10	13	13:45	48	175	40	198	373	
02:00	2	5	14:00	31	42							
02:15	0	0	14:15	30	29							
02:30	0	0	14:30	39	31							
02:45	0	2	1	6	8	14:45	33	133	30	132	265	
03:00	0	1	15:00	38	26							
03:15	1	0	15:15	28	34							
03:30	2	0	15:30	40	29							
03:45	2	5	0	1	6	15:45	31	137	30	119	256	
04:00	0	0	16:00	34	37							
04:15	3	3	16:15	28	28							
04:30	2	2	16:30	25	18							
04:45	1	6	0	5	11	16:45	8	93	19	102	195	
05:00	1	0	17:00	35	11							
05:15	1	0	17:15	32	25							
05:30	3	1	17:30	29	24							
05:45	8	13	2	3	16	17:45	24	120	30	90	210	
06:00	7	7	18:00	32	43							
06:15	15	5	18:15	39	38							
06:30	14	3	18:30	42	39							
06:45	7	43	7	22	65	18:45	44	157	43	163	320	
07:00	9	5	19:00	30	46							
07:15	9	5	19:15	35	47							
07:30	11	6	19:30	47	41							
07:45	10	39	6	22	61	19:45	51	163	48	183	346	
08:00	17	8	20:00	49	50							
08:15	12	3	20:15	44	53							
08:30	11	10	20:30	45	33							
08:45	11	51	12	33	84	20:45	45	183	42	178	361	
09:00	11	15	21:00	31	40							
09:15	16	12	21:15	23	40							
09:30	17	18	21:30	24	39							
09:45	20	64	10	55	119	21:45	26	104	38	157	261	
10:00	34	10	22:00	21	32							
10:15	31	22	22:15	27	29							
10:30	39	19	22:30	33	38							
10:45	37	141	36	87	228	22:45	34	115	36	135	250	
11:00	48	36	23:00	21	26							
11:15	41	38	23:15	27	27							
11:30	58	59	23:30	31	30							
11:45	54	201	52	185	386	23:45	19	98	25	108	206	
<b>Total Vol.</b>	<b>625</b>	<b>502</b>	<b>1127</b>	<b>1689</b>	<b>1812</b>	<b>3501</b>	<b>Daily Totals</b>			<b>3501</b>		
				<b>IN1</b>	<b>OUT1</b>	<b>Combined</b>						
				2314	2314	4628						
				<b>PM</b>								
<b>Split %</b>	55.5%	44.5%	<b>24.4%</b>	48.2%	51.8%	<b>75.6%</b>						
<b>Peak Hour</b>	11:30	11:45	<b>11:30</b>	12:00	12:00	<b>12:00</b>						
<b>Volume</b>	221	242	<b>459</b>	211	247	<b>458</b>						
<b>P.H.F.</b>	0.92	0.82	<b>0.86</b>	0.85	0.83	<b>0.86</b>						

pacific@aimtd.com

Tel. 951 249 3226

Wednesday, May 27, 2015

CITY: Millbrae

PROJECT: SC0629

Prepared by AimTD LLC tel. 951 249 3226

11 Rollings Rd			PM Period			IN1			OUT1			
AM Period	IN1	OUT1	PM Period	IN1	OUT1	PM Period	IN1	OUT1	PM Period	IN1	OUT1	
00:00	0	0	12:00	3	12							
00:15	0	0	12:15	20	3							
00:30	1	0	12:30	15	4							
00:45	1	2	2	2	4	12:45	16	54	4	23	77	
01:00	0	0	13:00	15	6							
01:15	0	0	13:15	16	4							
01:30	0	0	13:30	15	3							
01:45	0	0	0	0	0	13:45	3	51	2	15	66	
02:00	0	0	14:00	4	3							
02:15	0	0	14:15	1	3							
02:30	0	0	14:30	0	4							
02:45	0	0	2	2	2	14:45	1	6	7	17	23	
03:00	0	0	15:00	2	5							
03:15	1	0	15:15	3	1							
03:30	0	0	15:30	2	3							
03:45	0	1	0	0	1	15:45	2	9	3	12	21	
04:00	0	0	16:00	4	5							
04:15	0	0	16:15	2	5							
04:30	0	1	16:30	0	4							
04:45	0	0	0	1	1	16:45	3	9	2	16	25	
05:00	0	0	17:00	1	5							
05:15	0	0	17:15	1	5							
05:30	0	0	17:30	3	3							
05:45	2	2	1	1	3	17:45	3	8	4	17	25	
06:00	0	1	18:00	6	1							
06:15	6	0	18:15	0	5							
06:30	5	2	18:30	1	4							
06:45	4	15	2	5	20	18:45	2	9	4	14	23	
07:00	1	5	19:00	3	2							
07:15	1	4	19:15	3	4							
07:30	3	0	19:30	4	3							
07:45	4	9	1	10	19	19:45	5	15	2	11	26	
08:00	3	2	20:00	1	4							
08:15	2	3	20:15	2	5							
08:30	5	8	20:30	4	7							
08:45	2	12	4	17	29	20:45	0	7	2	18	25	
09:00	3	4	21:00	0	1							
09:15	2	8	21:15	1	1							
09:30	1	2	21:30	0	2							
09:45	5	11	6	20	31	21:45	1	2	1	5	7	
10:00	3	3	22:00	0	1							
10:15	2	2	22:15	0	1							
10:30	9	5	22:30	0	0							
10:45	4	18	5	15	33	22:45	1	1	0	2	3	
11:00	1	8	23:00	1	1							
11:15	5	6	23:15	3	0							
11:30	4	6	23:30	0	1							
11:45	7	17	2	22	39	23:45	0	4	0	2	6	
<b>Total Vol.</b>	<b>87</b>	<b>95</b>	<b>182</b>	<b>175</b>	<b>152</b>	<b>327</b>	<b>Daily Totals</b>			<b>327</b>		
				<b>IN1</b>	<b>OUT1</b>	<b>Combined</b>						
				262	247	509						
				<b>PM</b>								
<b>Split %</b>	47.8%	52.2%	<b>35.8%</b>	53.5%	46.5%	<b>64.2%</b>						
<b>Peak Hour</b>	11:45	11:15	<b>11:45</b>	12:15	12:00	<b>12:15</b>						
<b>Volume</b>	45	26	<b>66</b>	66	23	<b>83</b>						
<b>P.H.F.</b>	0.56	0.54	<b>0.72</b>	0.84	0.48	<b>0.72</b>						

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Tel. 951 249 3226

**MOUNTAIN VIEW & UNION CITY**

**(1159 N Rengstorff Ave, Mountain View, CA 94043)  
(53 W El Camino Real, Mountain View, CA 94040)  
(32060 Union Landing Blvd, Union City, CA 94587)**

### In-N-Out Parking & Queues

Locations: 17-7657  
City: Mountain View & Union City, CA

Day: Thursday  
Date: 9/14/2017

Parking Study											
Time	1. 1159 N Rengstorff, Mountain View			2. 53 El Camino Real, Mountain View				3. 32060 Union Landing, Union City			Grand Total
	Reg	HC	Sub Total	Reg	HC	Reserved	Sub Total	Reg	HC	Sub Total	
Spaces	63	4	67	44	4	4	52	40	2	42	161
4:00 PM	21	1	22	26	1	2	29	34	0	34	85
4:30 PM	23	2	25	22	1	3	26	32	2	34	85
5:00 PM	22	2	24	26	0	1	27	23	1	24	75
5:30 PM	24	1	25	28	0	1	29	29	0	29	83
6:00 PM	28	1	29	36	0	2	38	25	1	26	93

Queue Study			
Time	1. 1159 N Rengstorff, Mountain View Drive-Thru Max Queue	2. 53 El Camino Real, Mountain View Drive-Thru Max Queue	3. 32060 Union Landing, Union City Drive-Thru Max Queue
4:00 PM	7	6	17
4:15 PM	4	3	17
4:30 PM	8	9	13
4:45 PM	9	11	2
5:00 PM	7	7	14
5:15 PM	10	11	12
5:30 PM	13	17	12
5:45 PM	12	16	12
6:00 PM	6	17	6

**NOTES:**  
2. 53 El Camino Real, Mountain View  
 • At 5:30pm an In-N-Out employee came out to the drive-thru to manually take orders - didn't appear to have an impact on the queue wait time or shrinking the line at drive-thru.  
 • The drive-thru can hold 12-13 cars in queue before extending to the street.

Driveway In & Outs							
	Site	1		2		3	
	Time	IN	OUT	IN	OUT	IN	OUT
15 Minute Intervals Peak	4:00 PM	13	15	21	28	27	25
	4:15 PM	19	12	19	20	25	32
	4:30 PM	19	24	23	15	11	22
	4:45 PM	19	19	22	23	23	23
	5:00 PM	14	13	26	19	29	28
	5:15 PM	24	15	28	22	27	21
	5:30 PM	24	21	27	24	23	24
	5:45 PM	23	24	32	24	27	24
	<b>Sum</b>	<b>155</b>	<b>143</b>	<b>198</b>	<b>175</b>	<b>192</b>	<b>199</b>
	1 Hour Intervals	10:30 AM	68	35	78	60	77
11:30 AM		154	123	178	157	136	108
12:30 PM		131	159	164	170	154	150
1:30 PM		116	119	113	114	131	132
2:30 PM		67	77	99	112	82	102
3:30 PM		65	67	75	83	118	100
4:30 PM		76	71	99	79	90	94
5:30 PM		109	96	117	114	116	105
6:30 PM		110	113	141	138	137	133
7:30 PM		107	100	108	111	131	130
8:30 PM		76	90	113	125	133	136
9:30 PM		83	81	102	100	110	123
10:30 PM		52	67	59	66	90	102
11:30 PM	35	50	29	35	61	67	
12:30 AM	17	21	11	12	11	26	
<b>Sum</b>	<b>1266</b>	<b>1269</b>	<b>1486</b>	<b>1476</b>	<b>1577</b>	<b>1576</b>	



**RANCHO SAN MARGARITA**

**(30121 Santa Margarita Pkwy, Rancho Santa Margarita, Ca 92688)**

Thursday, May 09, 2019

CITY: Rancho Santa Margarita

PROJECT: SC

**ADT1 Driveway 1 north of Santa Margarita.**

Prepared by AimTD LLC tel. 714 253 7888

AM Period	IN	OUT	EB	WB	PM Period	IN	OUT	EB	WB
0:00	1	2	0	0	12:00	21	24	0	0
0:15	2	4	0	0	12:15	15	18	0	0
0:30	4	6	0	0	12:30	20	33	0	0
0:45	1 8	4 16	0 0	0 0	12:45	24 80	22 97	0 0	0 0
1:00	0	1	0	0	13:00	20	25	0	0
1:15	0	0	0	0	13:15	20	29	0	0
1:30	0	1	0	0	13:30	7	21	0	0
1:45	0 0	2 4	0 0	0 0	13:45	17 64	26 101	0 0	0 0
2:00	0	0	0	0	14:00	15	15	0	0
2:15	0	0	0	0	14:15	11	20	0	0
2:30	0	0	0	0	14:30	17	21	0	0
2:45	0 0	0 0	0 0	0 0	14:45	12 55	20 76	0 0	0 0
3:00	0	0	0	0	15:00	10	18	0	0
3:15	0	0	0	0	15:15	14	16	0	0
3:30	0	0	0	0	15:30	13	30	0	0
3:45	0 0	0 0	0 0	0 0	15:45	11 48	23 87	0 0	0 0
4:00	0	0	0	0	16:00	24	16	0	0
4:15	0	0	0	0	16:15	18	14	0	0
4:30	0	0	0	0	16:30	21	11	0	0
4:45	3 3	0 0	0 0	0 0	16:45	14 77	28 69	0 0	0 0
5:00	0	0	0	0	17:00	15	33	0	0
5:15	0	0	0	0	17:15	25	15	0	0
5:30	0	0	0	0	17:30	23	34	0	0
5:45	0 0	0 0	0 0	0 0	17:45	23 86	32 114	0 0	0 0
6:00	0	0	0	0	18:00	25	29	0	0
6:15	1	0	0	0	18:15	33	31	0	0
6:30	0	0	0	0	18:30	19	26	0	0
6:45	1 2	2 2	0 0	0 0	18:45	21 98	30 116	0 0	0 0
7:00	0	0	0	0	19:00	23	24	0	0
7:15	0	0	0	0	19:15	19	28	0	0
7:30	2	2	0	0	19:30	21	25	0	0
7:45	0 2	1 3	0 0	0 0	19:45	15 78	14 91	0 0	0 0
8:00	0	0	0	0	20:00	18	25	0	0
8:15	0	0	0	0	20:15	12	23	0	0
8:30	2	0	0	0	20:30	9	18	0	0
8:45	1 3	0 0	0 0	0 0	20:45	9 48	34 100	0 0	0 0
9:00	0	0	0	0	21:00	15	21	0	0
9:15	1	0	0	0	21:15	12	14	0	0
9:30	0	0	0	0	21:30	11	23	0	0
9:45	2 3	0 0	0 0	0 0	21:45	8 46	18 76	0 0	0 0
10:00	5	1	0	0	22:00	4	14	0	0
10:15	3	9	0	0	22:15	9	14	0	0
10:30	9	4	0	0	22:30	10	11	0	0
10:45	12 29	7 21	0 0	0 0	22:45	6 29	15 54	0 0	0 0
11:00	18	12	0	0	23:00	4	12	0	0
11:15	12	20	0	0	23:15	4	11	0	0
11:30	24	27	0	0	23:30	1	6	0	0
11:45	23 77	25 84	0 0	0 0	23:45	5 14	10 39	0 0	0 0
<b>Total Vol.</b>	127	130			257	723	1020		1743

Daily Totals		EB	WB	Combined
NB	SB			
850	1150			2000

Split %	AM			PM		
	49.4%	50.6%	12.9%	41.5%	58.5%	87.2%
<b>Peak Hour</b>	11:30	11:45	11:45	17:30	17:30	17:30
<b>Volume</b>	83	100	179	104	126	230
<b>P.H.F.</b>	0.86	0.76	0.84	0.96	0.93	0.90

cs@aimtd.com

Tell. 714 253 7888

Thursday, May 09, 2019

CITY: Rancho Santa Margarita

PROJECT: SC

**ADT2 Driveway 2 north of Santa Margarita.**

Prepared by AimTD LLC tel. 714 253 7888

AM Period	IN	OUT	EB	WB	PM Period	IN	OUT	EB	WB
0:00	7	4	0	0	12:00	16	2	0	0
0:15	5	2	0	0	12:15	15	7	0	0
0:30	1	2	0	0	12:30	8	5	0	0
0:45	1 14	4 12	0 0	0 0	12:45	20 59	10 24	0 0	0 0
1:00	0	0	0	0	13:00	12	7	0	0
1:15	0	1	0	0	13:15	7	5	0	0
1:30	0	0	0	0	13:30	9	6	0	0
1:45	0 0	0 1	0 0	0 0	13:45	7 35	2 20	0 0	0 0
2:00	0	0	0	0	14:00	8	8	0	0
2:15	0	0	0	0	14:15	12	4	0	0
2:30	0	0	0	0	14:30	9	9	0	0
2:45	0 0	0 0	0 0	0 0	14:45	7 36	6 27	0 0	0 0
3:00	0	0	0	0	15:00	23	4	0	0
3:15	0	0	0	0	15:15	18	7	0	0
3:30	0	0	0	0	15:30	12	7	0	0
3:45	0 0	0 0	0 0	0 0	15:45	4 57	5 23	0 0	0 0
4:00	0	0	0	0	16:00	13	4	0	0
4:15	0	0	0	0	16:15	8	4	0	0
4:30	0	0	0	0	16:30	16	5	0	0
4:45	0 0	0 0	0 0	0 0	16:45	13 50	4 17	0 0	0 0
5:00	0	0	0	0	17:00	20	7	0	0
5:15	0	0	0	0	17:15	7	6	0	0
5:30	0	0	0	0	17:30	11	5	0	0
5:45	0 0	0 0	0 0	0 0	17:45	13 51	1 19	0 0	0 0
6:00	0	0	0	0	18:00	12	9	0	0
6:15	0	0	0	0	18:15	15	3	0	0
6:30	0	1	0	0	18:30	5	4	0	0
6:45	0 0	0 1	0 0	0 0	18:45	15 47	6 21	0 0	0 0
7:00	0	0	0	0	19:00	14	7	0	0
7:15	0	0	0	0	19:15	7	1	0	0
7:30	0	0	0	0	19:30	6	3	0	0
7:45	1 1	0 0	0 0	0 0	19:45	7 34	9 20	0 0	0 0
8:00	0	0	0	0	20:00	17	5	0	0
8:15	0	0	0	0	20:15	11	3	0	0
8:30	0	0	0	0	20:30	7	7	0	0
8:45	0 0	0 0	0 0	0 0	20:45	13 48	4 19	0 0	0 0
9:00	0	0	0	0	21:00	36	6	0	0
9:15	0	0	0	0	21:15	10	5	0	0
9:30	0	0	0	0	21:30	4	4	0	0
9:45	1 1	0 0	0 0	0 0	21:45	11 61	11 26	0 0	0 0
10:00	4	1	0	0	22:00	3	4	0	0
10:15	3	1	0	0	22:15	6	9	0	0
10:30	2	2	0	0	22:30	4	3	0	0
10:45	6 15	3 7	0 0	0 0	22:45	4 17	0 16	0 0	0 0
11:00	6	3	0	0	23:00	10	5	0	0
11:15	12	2	0	0	23:15	5	5	0	0
11:30	8	3	0	0	23:30	1	1	0	0
11:45	14 40	6 14	0 0	0 0	23:45	1 17	3 14	0 0	0 0
<b>Total Vol.</b>	71	35			106	512	246		758

Daily Totals		EB	WB	Combined
NB	SB			
583	281			864

Split %	AM			PM		
	67.0%	33.0%	12.3%	67.5%	32.5%	87.7%
<b>Peak Hour</b>	11:30	11:45	11:45	20:15	12:15	20:30
<b>Volume</b>	53	20	73	67	29	88
<b>P.H.F.</b>	0.83	0.71	0.83	0.85	0.73	0.52

cs@aimtd.com

Tell. 714 253 7888

**REDWOOD CITY**

**(949 Veterans Blvd, Redwood City, CA 94063)**



949 Veterans Blvd Prepared by AimTD LLC tel. 951 249 3226

AM Period	IN1	OUT1	PM Period	IN1	OUT1	
00:00	8	10	12:00	10	18	
00:15	8	11	12:15	20	15	
00:30	7	5	12:30	9	19	
00:45	8 29 4 30		12:45	11 50 18 70		120
01:00	2	1	13:00	18	21	
01:15	8	8	13:15	19	14	
01:30	1	4	13:30	18	18	
01:45	1 10 3 16		13:45	11 64 18 71		135
02:00	0	0	14:00	8	10	
02:15	1	1	14:15	16	15	
02:30	0	0	14:30	12	20	
02:45	0 1 0 1		14:45	10 46 16 61		107
03:00	0	0	15:00	17	20	
03:15	0	6	15:15	10	7	
03:30	0	0	15:30	10	14	
03:45	0 0 0 6		15:45	7 44 7 48		92
04:00	0	0	16:00	6	15	
04:15	0	0	16:15	8	7	
04:30	0	0	16:30	8	5	
04:45	0 0 0 0		16:45	8 28 11 38		66
05:00	0	1	17:00	7	10	
05:15	0	0	17:15	9	7	
05:30	0	0	17:30	1	5	
05:45	0 0 0 1		17:45	10 27 12 34		61
06:00	0	0	18:00	10	12	
06:15	0	0	18:15	8	15	
06:30	0	0	18:30	9	13	
06:45	1 1 0 0		18:45	10 37 6 46		83
07:00	0	0	19:00	8	11	
07:15	1	0	19:15	13	10	
07:30	0	0	19:30	7	13	
07:45	1 2 0 0		19:45	14 42 10 44		86
08:00	1	2	20:00	12	12	
08:15	5	0	20:15	13	11	
08:30	3	1	20:30	11	12	
08:45	0 9 0 3		20:45	8 44 7 42		86
09:00	0	0	21:00	12	9	
09:15	2	1	21:15	10	7	
09:30	0	4	21:30	8	9	
09:45	1 3 8 13		21:45	11 41 12 37		78
10:00	3	4	22:00	9	11	
10:15	1	4	22:15	7	11	
10:30	8	2	22:30	12	6	
10:45	4 14 6 16		22:45	9 33 8 36		69
11:00	6	5	23:00	8	6	
11:15	2	5	23:15	4	16	
11:30	7	2	23:30	8	10	
11:45	11 26 9 21		23:45	3 23 3 35		58
<b>Total Vol.</b>	<b>95</b>	<b>107</b>	<b>202</b>	<b>479</b>	<b>562</b>	<b>1041</b>
<b>Daily Totals</b>						
				IN1	OUT1	Combined
				574	669	1243
<b>AM</b>						
<b>Split %</b>	47.0%	53.0%	<b>16.3%</b>	46.0%	54.0%	<b>83.7%</b>
<b>Peak Hour</b>	11:45	11:45	<b>11:45</b>	12:45	12:15	<b>12:45</b>
<b>Volume</b>	50	61	<b>111</b>	64	73	<b>135</b>
<b>P.H.F.</b>	0.63	0.80	<b>0.79</b>	0.86	0.87	<b>0.79</b>

pacific@aimtd.com

Tel. 951 249 3226

949 Veterans Blvd Prepared by AimTD LLC tel. 951 249 3226

AM Period	IN1	OUT1	PM Period	IN1	OUT1	
00:00	16	26	12:00	20	25	
00:15	15	12	12:15	22	19	
00:30	10	11	12:30	35	22	
00:45	5 48 8 57		12:45	18 95 15 81		176
01:00	9	6	13:00	21	20	
01:15	6	8	13:15	19	24	
01:30	3	12	13:30	17	11	
01:45	0 18 3 29		13:45	17 74 16 71		145
02:00	0	0	14:00	13	13	
02:15	0	0	14:15	21	13	
02:30	2	1	14:30	19	12	
02:45	0 2 0 1		14:45	18 71 13 51		122
03:00	0	0	15:00	13	10	
03:15	0	0	15:15	13	11	
03:30	0	0	15:30	10	20	
03:45	0 0 0 0		15:45	12 48 14 55		103
04:00	0	1	16:00	15	8	
04:15	0	0	16:15	12	8	
04:30	0	0	16:30	15	12	
04:45	0 0 0 1		16:45	12 54 9 37		91
05:00	0	0	17:00	13	6	
05:15	1	0	17:15	15	4	
05:30	0	0	17:30	13	10	
05:45	1 2 0 0		17:45	22 63 18 38		101
06:00	0	0	18:00	15	10	
06:15	0	0	18:15	16	8	
06:30	0	1	18:30	14	11	
06:45	0 0 0 1		18:45	17 62 11 40		102
07:00	0	0	19:00	18	10	
07:15	0	0	19:15	12	17	
07:30	1	0	19:30	13	12	
07:45	0 1 0 0		19:45	15 58 11 50		108
08:00	0	2	20:00	16	13	
08:15	6	0	20:15	12	16	
08:30	4	0	20:30	19	18	
08:45	0 10 0 2		20:45	14 61 13 60		121
09:00	1	1	21:00	23	15	
09:15	0	0	21:15	18	16	
09:30	1	2	21:30	12	21	
09:45	6 8 1 4		21:45	14 67 9 61		128
10:00	2	3	22:00	12	12	
10:15	7	0	22:15	15	10	
10:30	6	2	22:30	11	17	
10:45	2 17 4 9		22:45	12 50 12 51		101
11:00	10	5	23:00	12	9	
11:15	6	9	23:15	11	13	
11:30	10	9	23:30	11	18	
11:45	16 42 19 42		23:45	9 43 11 51		94
<b>Total Vol.</b>	<b>148</b>	<b>146</b>	<b>294</b>	<b>746</b>	<b>646</b>	<b>1392</b>
<b>Daily Totals</b>						
				IN1	OUT1	Combined
				894	792	1686
<b>AM</b>						
<b>Split %</b>	50.3%	49.7%	<b>17.4%</b>	53.6%	46.4%	<b>82.6%</b>
<b>Peak Hour</b>	11:45	11:45	<b>11:45</b>	12:15	12:00	<b>12:00</b>
<b>Volume</b>	93	85	<b>178</b>	96	81	<b>176</b>
<b>P.H.F.</b>	0.66	0.85	<b>0.78</b>	0.66	0.81	<b>0.78</b>

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**ROCKLIN**

**(5490 Crossings Dr, Rocklin, CA 95677)**

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

Saturday, February 06, 2016			CITY: Rocklin			PROJECT: sc0824		
Prepared by AimTD LLC tel. 714.253.7000								
AM Period	in	out	PM Period	in	out			
00:00	0	0	12:00	9	23			
00:15	0	0	12:15	12	10			
00:30	0	0	12:30	14	27			
00:45	0	0	12:45	14	49	26	86	135
01:00	0	0	13:00	19	14			
01:15	0	0	13:15	15	21			
01:30	0	0	13:30	13	16			
01:45	0	0	13:45	9	56	20	71	127
02:00	0	0	14:00	20	21			
02:15	0	0	14:15	19	7			
02:30	0	0	14:30	21	16			
02:45	0	0	14:45	13	73	18	62	135
03:00	0	0	15:00	18	12			
03:15	0	0	15:15	13	12			
03:30	0	0	15:30	18	23			
03:45	0	0	15:45	12	61	11	58	119
04:00	0	0	16:00	10	13			
04:15	0	0	16:15	16	9			
04:30	0	0	16:30	9	13			
04:45	0	0	16:45	21	56	8	43	99
05:00	0	0	17:00	22	10			
05:15	0	0	17:15	13	22			
05:30	0	0	17:30	13	25			
05:45	0	0	17:45	14	62	18	75	137
06:00	0	0	18:00	21	12			
06:15	0	0	18:15	13	26			
06:30	0	0	18:30	12	15			
06:45	0	0	18:45	9	55	20	73	128
07:00	0	0	19:00	12	12			
07:15	0	0	19:15	18	12			
07:30	0	0	19:30	19	9			
07:45	0	0	19:45	7	56	11	44	100
08:00	4	1	20:00	16	8			
08:15	1	1	20:15	6	11			
08:30	1	0	20:30	9	13			
08:45	4	10	20:45	9	40	8	40	80
09:00	2	0	21:00	2	11			
09:15	3	1	21:15	3	8			
09:30	3	3	21:30	3	11			
09:45	6	14	21:45	7	15	11	41	56
10:00	5	5	22:00	4	8			
10:15	8	3	22:15	3	10			
10:30	13	7	22:30	1	4			
10:45	10	36	22:45	4	12	9	31	43
11:00	7	10	23:00	3	5			
11:15	13	15	23:15	2	6			
11:30	15	14	23:30	3	13			
11:45	15	50	23:45	4	12	5	29	41
<b>Total Vol.</b>	<b>110</b>	<b>91</b>	<b>201</b>	<b>547</b>	<b>653</b>	<b>1200</b>		
				<b>Daily Totals</b>		<b>Combined</b>		
				in	out			
				657	744	<b>1401</b>		
		<b>AM</b>		<b>PM</b>				
<b>Split %</b>	54.7%	45.3%	<b>14.3%</b>	45.6%	54.4%	<b>85.7%</b>		
<b>Peak Hour</b>	11:15	11:45	<b>11:45</b>	14:00	12:30	<b>12:30</b>		
<b>Volume</b>	52	74	<b>124</b>	73	88	<b>150</b>		
<b>P.H.F.</b>	0.87	0.69	<b>0.76</b>	0.96	0.81	<b>0.76</b>		

Saturday, February 06, 2016			CITY: Rocklin Dwy 2			PROJECT: sc0824		
Prepared by AimTD LLC tel. 714.253.7000								
AM Period	in	out	PM Period	in	out			
00:00	0	0	12:00	9	0			
00:15	0	0	12:15	7	3			
00:30	0	0	12:30	5	1			
00:45	0	0	12:45	5	26	2	6	32
01:00	0	0	13:00	8	3			
01:15	0	0	13:15	8	2			
01:30	0	0	13:30	9	2			
01:45	0	0	13:45	3	28	4	11	39
02:00	0	0	14:00	6	0			
02:15	0	0	14:15	5	8			
02:30	0	0	14:30	4	9			
02:45	0	0	14:45	6	21	6	23	44
03:00	0	0	15:00	4	4			
03:15	0	0	15:15	4	2			
03:30	0	0	15:30	5	0			
03:45	0	0	15:45	7	20	1	7	27
04:00	0	0	16:00	3	2			
04:15	0	0	16:15	3	2			
04:30	0	0	16:30	5	2			
04:45	0	0	16:45	2	13	3	9	22
05:00	0	0	17:00	4	4			
05:15	0	0	17:15	4	1			
05:30	0	0	17:30	2	1			
05:45	0	0	17:45	4	14	1	7	21
06:00	0	0	18:00	3	4			
06:15	0	0	18:15	6	4			
06:30	0	0	18:30	3	0			
06:45	0	0	18:45	4	16	3	11	27
07:00	0	0	19:00	5	3			
07:15	0	0	19:15	5	2			
07:30	0	0	19:30	5	4			
07:45	0	0	19:45	4	19	0	9	28
08:00	0	0	20:00	3	6			
08:15	1	4	20:15	5	8			
08:30	1	0	20:30	4	7			
08:45	1	3	20:45	4	16	4	23	39
09:00	0	1	21:00	1	4			
09:15	0	0	21:15	4	4			
09:30	2	0	21:30	3	3			
09:45	1	3	21:45	5	13	0	11	24
10:00	1	1	22:00	1	0			
10:15	0	0	22:15	1	1			
10:30	1	0	22:30	4	0			
10:45	2	4	22:45	2	8	0	1	9
11:00	1	2	23:00	3	1			
11:15	2	4	23:15	1	1			
11:30	4	0	23:30	1	0			
11:45	7	14	23:45	0	5	0	2	7
<b>Total Vol.</b>	<b>24</b>	<b>17</b>	<b>41</b>	<b>199</b>	<b>120</b>	<b>319</b>		
				<b>Daily Totals</b>		<b>Combined</b>		
				in	out			
				223	137	<b>360</b>		
		<b>AM</b>		<b>PM</b>				
<b>Split %</b>	58.5%	41.5%	<b>11.4%</b>	62.4%	37.6%	<b>88.6%</b>		
<b>Peak Hour</b>	11:45	11:00	<b>11:45</b>	12:45	14:15	<b>14:15</b>		
<b>Volume</b>	28	8	<b>34</b>	30	27	<b>46</b>		
<b>P.H.F.</b>	0.78	0.50	<b>0.85</b>	0.91	0.75	<b>0.85</b>		



**VACAVILLE**

**(170 Nut Tree Pkwy, Vacaville, CA 95687)**



**FAIRFIELD**

**(1364 Holiday Ln, Fairfield, CA 94534)**



**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

Thursday, February 04, 2016		CITY: Fairfield		PROJECT: sc0824				
Prepared by AimTD LLC tel. 714.253.7888								
AM Period	in	out	PM Period	in	out			
00:00	0	0	12:00	21	17			
00:15	0	0	12:15	21	20			
00:30	0	0	12:30	27	18			
00:45	0	0	12:45	27	96	24	79	175
01:00	0	0	13:00	21	19			
01:15	0	0	13:15	16	19			
01:30	0	0	13:30	9	23			
01:45	0	0	13:45	20	66	19	80	146
02:00	0	0	14:00	22	19			
02:15	0	0	14:15	20	25			
02:30	0	0	14:30	17	18			
02:45	0	0	14:45	16	75	17	79	154
03:00	0	0	15:00	12	17			
03:15	0	0	15:15	19	20			
03:30	0	0	15:30	20	18			
03:45	0	0	15:45	28	79	23	78	157
04:00	0	0	16:00	17	16			
04:15	0	0	16:15	24	18			
04:30	0	0	16:30	20	13			
04:45	0	0	16:45	14	75	10	57	132
05:00	0	0	17:00	11	14			
05:15	0	0	17:15	12	14			
05:30	0	0	17:30	16	17			
05:45	0	0	17:45	9	48	17	62	110
06:00	0	0	18:00	14	14			
06:15	0	0	18:15	21	15			
06:30	0	0	18:30	14	17			
06:45	0	0	18:45	10	59	15	61	120
07:00	0	0	19:00	17	12			
07:15	0	0	19:15	19	18			
07:30	0	0	19:30	11	19			
07:45	0	0	19:45	17	64	15	64	128
08:00	2	3	20:00	12	13			
08:15	2	3	20:15	10	14			
08:30	4	2	20:30	12	11			
08:45	5	13	20:45	3	37	8	46	83
09:00	6	5	21:00	12	5			
09:15	2	5	21:15	3	8			
09:30	9	7	21:30	9	18			
09:45	11	28	21:45	6	30	7	38	68
10:00	8	6	22:00	6	6			
10:15	12	5	22:15	6	3			
10:30	15	9	22:30	8	10			
10:45	14	49	22:45	6	26	9	28	54
11:00	17	12	23:00	6	11			
11:15	14	17	23:15	5	6			
11:30	12	18	23:30	2	2			
11:45	25	68	23:45	5	18	5	24	42
<b>Total Vol.</b>	158	135	<b>293</b>	673	696	<b>Daily Totals</b>		<b>1369</b>
				in	out	<b>Daily Totals</b>		<b>Combined</b>
				831	831			<b>1662</b>
<b>Split %</b>	53.9%	46.1%	<b>17.6%</b>	49.2%	50.8%	<b>PM</b>		<b>82.4%</b>
<b>Peak Hour</b>	11:45	11:30	<b>11:45</b>	12:00	13:30			<b>12:15</b>
<b>Volume</b>	94	73	<b>167</b>	96	86			<b>177</b>
<b>P.H.F.</b>	0.87	0.91	<b>0.93</b>	0.89	0.86			<b>0.93</b>

Saturday, February 06, 2016		CITY: Fairfield		PROJECT: sc0824				
Prepared by AimTD LLC tel. 714.253.7888								
AM Period	in	out	PM Period	in	out			
00:00	0	0	12:00	34	22			
00:15	0	0	12:15	24	30			
00:30	0	0	12:30	22	28			
00:45	0	0	12:45	25	105	23	103	208
01:00	0	0	13:00	24	20			
01:15	0	0	13:15	20	13			
01:30	0	0	13:30	18	20			
01:45	0	0	13:45	27	89	21	74	163
02:00	0	0	14:00	12	28			
02:15	0	0	14:15	23	20			
02:30	0	0	14:30	19	18			
02:45	0	0	14:45	17	71	18	84	155
03:00	0	0	15:00	18	13			
03:15	0	0	15:15	18	27			
03:30	0	0	15:30	18	18			
03:45	0	0	15:45	25	79	24	82	161
04:00	0	0	16:00	16	21			
04:15	0	0	16:15	26	15			
04:30	0	0	16:30	30	18			
04:45	0	0	16:45	26	98	26	80	178
05:00	0	0	17:00	28	32			
05:15	0	0	17:15	25	22			
05:30	0	0	17:30	27	20			
05:45	0	0	17:45	32	112	17	91	203
06:00	0	0	18:00	22	15			
06:15	0	0	18:15	25	22			
06:30	0	0	18:30	30	24			
06:45	0	0	18:45	21	98	20	81	179
07:00	0	0	19:00	20	22			
07:15	0	0	19:15	9	12			
07:30	0	0	19:30	19	18			
07:45	0	0	19:45	21	69	23	75	144
08:00	0	0	20:00	19	18			
08:15	1	0	20:15	14	20			
08:30	3	2	20:30	9	14			
08:45	3	7	20:45	5	47	18	70	117
09:00	5	0	21:00	14	14			
09:15	2	2	21:15	14	11			
09:30	5	2	21:30	20	20			
09:45	5	17	21:45	11	59	16	61	120
10:00	6	4	22:00	11	10			
10:15	7	5	22:15	9	14			
10:30	8	8	22:30	9	12			
10:45	15	36	22:45	33	62	15	51	113
11:00	17	13	23:00	6	13			
11:15	13	14	23:15	5	19			
11:30	19	18	23:30	4	19			
11:45	23	72	23:45	4	19	29	80	99
<b>Total Vol.</b>	132	109	<b>241</b>	908	932	<b>Daily Totals</b>		<b>1840</b>
				in	out	<b>Daily Totals</b>		<b>Combined</b>
				1040	1041			<b>2081</b>
<b>Split %</b>	54.8%	45.2%	<b>11.6%</b>	49.3%	50.7%	<b>PM</b>		<b>88.4%</b>
<b>Peak Hour</b>	11:45	11:45	<b>11:45</b>	17:00	12:00			<b>12:00</b>
<b>Volume</b>	103	103	<b>206</b>	112	103			<b>208</b>
<b>P.H.F.</b>	0.76	0.86	<b>0.92</b>	0.96	0.86			<b>0.92</b>

**LONG BEACH**

**(6391 E Pacific Coast Highway, Long Beach, CA 90803)**

Saturday, May 19, 2012

CITY: Long Beach

PROJECT: In N Out Burger

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	17	17	16		
00:15				12:15	34	20	14		
00:30				12:30	22	30	16		
00:45				12:45	32	105	37	104	10
01:00				13:00	33	27	15		
01:15				13:15	29	23	16		
01:30				13:30	29	33	10		
01:45				13:45	X	91	X	83	9
02:00				14:00			12		
02:15				14:15			13		
02:30				14:30			9		
02:45				14:45			8		
03:00				15:00			9		
03:15				15:15			9		
03:30				15:30			6		
03:45				15:45			9		
04:00				16:00	21	25	8		
04:15				16:15	22	16	10		
04:30				16:30	21	25	8		
04:45				16:45	24	88	24	90	5
05:00				17:00	19	19	9		
05:15				17:15	19	21	10		
05:30				17:30	28	25	10		
05:45				17:45	18	84	19	84	9
06:00				18:00	23	18	13		
06:15				18:15			9		
06:30				18:30			10		
06:45				18:45	X	23	X	18	14
07:00				19:00			12		
07:15				19:15			13		
07:30				19:30			9		
07:45				19:45			9		
08:00				20:00			10		
08:15				20:15			9		
08:30				20:30			11		
08:45				20:45			12		
09:00				21:00			13		
09:15				21:15			17		
09:30				21:30			15		
09:45				21:45			10		
10:00				22:00			12		
10:15			4	22:15			14		
10:30			7	22:30			13		
10:45			9	22:45			11		
11:00			7	23:00			9		
11:15			8	23:15			10		
11:30	25	16	9	23:30			8		
11:45	27	52	18	23:45	34		6		
<b>Total Vol.</b>	<b>52</b>	<b>34</b>				<b>391</b>	<b>379</b>		

Daily Total	
IN	443
OUT	391

PACIFIC TRAFFIC & TRANSIT DATA SERVICES



**LOS ANGELES**

**(9149 S SEPULVEDA BLVD, LOS ANGELES, CA 90045)**

05/19/12		CITY: Los Angeles				PROJECT: In-N-Out Burger			
AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	49	38			20
00:15				12:15	49	41			16
00:30				12:30	51	43			20
00:45				12:45	66	215	57	179	20
01:00				13:00	53	49			23
01:15				13:15	54	51			22
01:30				13:30	49	54			20
01:45				13:45	X	156	X	154	20
02:00				14:00					21
02:15				14:15					26
02:30				14:30					22
02:45				14:45					21
03:00				15:00					18
03:15				15:15					17
03:30				15:30					17
03:45				15:45					9
04:00				16:00	28	24			10
04:15				16:15	37	20			14
04:30				16:30	38	25			18
04:45				16:45	25	128	34	103	8
05:00				17:00	15	26			8
05:15				17:15	28	30			9
05:30				17:30	43	24			20
05:45				17:45	33	119	33	113	19
06:00				18:00	35	38			20
06:15				18:15	X	X			19
06:30				18:30	X	X			20
06:45				18:45	X	35	X	38	18
07:00				19:00					19
07:15				19:15					20
07:30				19:30					21
07:45				19:45					22
08:00				20:00					21
08:15				20:15					22
08:30				20:30					18
08:45				20:45					17
09:00				21:00					16
09:15				21:15					19
09:30				21:30					18
09:45				21:45					20
10:00				22:00					19
10:15			3	22:15					18
10:30			4	22:30					19
10:45			6	22:45					18
11:00			8	23:00					21
11:15			11	23:15					17
11:30	31	46	12	23:30					16
11:45	42	73	35	23:45	81				14
<b>Total Vol.</b>	<b>73</b>	<b>81</b>				<b>653</b>	<b>587</b>		

Daily Totals	
IN	OUT
<b>726</b>	<b>668</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**REDONDO BEACH**

**(3801 Inglewood Ave, Redondo Beach, CA 90278)**



May 19 th, 2012

Saturday, May 19th,2012

CITY: Redondo Beach

PROJECT: IN N OUT

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	26	28	16		
00:15				12:15	36	34	20		
00:30				12:30	29	25	31		
00:45				12:45	49	140	40	127	33
01:00				13:00	48	42		35	
01:15				13:15	38	39		36	
01:30				13:30	40	58		31	
01:45				13:45	X	126	X	139	28
02:00				14:00				26	
02:15				14:15				23	
02:30				14:30				21	
02:45				14:45				18	
03:00				15:00				12	
03:15				15:15				14	
03:30				15:30				8	
03:45				15:45				19	
04:00				16:00	46	40		22	
04:15				16:15	45	38		26	
04:30				16:30	31	31		24	
04:45				16:45	19	141	40	149	18
05:00				17:00	33	25		14	
05:15				17:15	24	27		13	
05:30				17:30	28	27		20	
05:45				17:45	23	108	34	113	19
06:00				18:00	35	26		25	
06:15				18:15	X	X		18	
06:30				18:30	X	X		22	
06:45				18:45	X	35	X	26	19
07:00				19:00				23	
07:15				19:15				22	
07:30				19:30				24	
07:45				19:45				25	
08:00				20:00				22	
08:15				20:15				23	
08:30				20:30				19	
08:45				20:45				18	
09:00				21:00				12	
09:15				21:15				13	
09:30				21:30				9	
09:45				21:45				14	
10:00			0	22:00				20	
10:15			7	22:15				23	
10:30			8	22:30				26	
10:45			5	22:45				22	
11:00			8	23:00				21	
11:15			10	23:15				23	
11:30	24	34	15	23:30				19	
11:45	25	49	37	23:45				71	12

Total Vol. 49 71

550 554

<b>Daily Total</b>	
<b>IN</b>	<b>599</b>
<b>OUT</b>	<b>625</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**MILLBRAE**

**(11 Rollins Rd, Millbrae, CA 94030)**

Saturday, May 30, 2015 CITY: Millbrae PROJECT: SC0629

11 Rollings Rd Prepared by AimTD LLC tel. 951 249 3226

AM Period	INI	OUT1	PM Period	INI	OUT1	
00:00	27	34	12:00	25	36	
00:15	28	35	12:15	32	48	
00:30	25	28	12:30	27	41	
00:45	22	102	28	123	225	12:45 24 108 51 176 284
01:00	17	23	13:00	35	47	
01:15	8	29	13:15	37	51	
01:30	1	3	13:30	41	43	
01:45	1	27	2	57	84	13:45 46 158 48 189 347
02:00	1	0	14:00	27	39	
02:15	2	5	14:15	36	54	
02:30	3	3	14:30	38	41	
02:45	0	6	3	11	17	14:45 33 134 51 185 319
03:00	0	2	15:00	29	28	
03:15	1	1	15:15	25	22	
03:30	0	1	15:30	43	33	
03:45	1	2	3	7	9	15:45 28 123 30 113 236
04:00	1	1	16:00	30	27	
04:15	2	0	16:15	41	28	
04:30	3	1	16:30	35	20	
04:45	2	8	0	2	10	16:45 33 139 33 106 245
05:00	2	0	17:00	35	39	
05:15	1	0	17:15	49	37	
05:30	5	0	17:30	34	33	
05:45	1	9	0	0	9	17:45 32 150 51 160 310
06:00	3	3	18:00	39	37	
06:15	8	6	18:15	44	45	
06:30	4	4	18:30	48	51	
06:45	8	19	4	17	36	18:45 27 158 31 164 322
07:00	8	4	19:00	38	53	
07:15	10	6	19:15	48	48	
07:30	9	4	19:30	49	45	
07:45	20	45	5	19	64	19:45 48 184 38 185 369
08:00	19	5	20:00	41	61	
08:15	10	8	20:15	45	38	
08:30	18	9	20:30	42	47	
08:45	7	52	12	34	86	20:45 31 159 46 192 351
09:00	14	18	21:00	35	45	
09:15	12	20	21:15	36	36	
09:30	20	20	21:30	24	46	
09:45	17	63	13	71	134	21:45 25 120 26 153 273
10:00	32	11	22:00	25	35	
10:15	29	21	22:15	38	44	
10:30	81	49	22:30	35	28	
10:45	39	161	24	105	266	22:45 25 121 34 139 260
11:00	54	47	23:00	28	32	
11:15	29	37	23:15	28	37	
11:30	31	49	23:30	16	25	
11:45	18	130	20	153	283	23:45 12 82 22 116 198
<b>Total Vol.</b>	<b>624</b>	<b>599</b>	<b>1223</b>	<b>1636</b>	<b>1878</b>	<b>3514</b>
<b>Daily Totals</b>						
			INI	OUT1		Combined
			2260	2477		4737
<b>AM</b>						
<b>Split %</b>	51.0%	49.0%	<b>25.8%</b>	46.6%	53.4%	<b>74.2%</b>
<b>Peak Hour</b>	10:15	10:30	<b>10:30</b>	19:15	19:15	<b>19:15</b>
<b>Volume</b>	183	157	<b>340</b>	187	193	<b>380</b>
<b>P.H.F.</b>	0.75	0.80	<b>0.77</b>	0.99	0.79	<b>0.77</b>

pacific@aimtd.com

Tel. 951 249 3226

Saturday, May 30, 2015 CITY: Millbrae PROJECT: SC0629

11 Rollings Rd Prepared by AimTD LLC tel. 951 249 3226

AM Period	INI	OUT1	PM Period	INI	OUT1	
00:00	4	1	12:00	11	2	
00:15	7	1	12:15	18	4	
00:30	10	0	12:30	22	3	
00:45	8	29	1	3	32	12:45 32 83 4 13 96
01:00	2	2	13:00	21	2	
01:15	2	2	13:15	19	3	
01:30	1	1	13:30	6	5	
01:45	1	6	0	5	11	13:45 10 56 2 12 68
02:00	0	0	14:00	11	2	
02:15	0	1	14:15	6	1	
02:30	0	0	14:30	7	0	
02:45	0	0	0	1	1	14:45 10 34 0 3 37
03:00	0	0	15:00	4	2	
03:15	0	0	15:15	3	3	
03:30	0	0	15:30	3	2	
03:45	0	0	0	0	0	15:45 4 14 1 8 22
04:00	1	0	16:00	2	4	
04:15	0	0	16:15	1	7	
04:30	0	0	16:30	1	7	
04:45	0	1	0	0	1	16:45 1 5 4 22 27
05:00	0	0	17:00	3	7	
05:15	0	2	17:15	2	1	
05:30	1	0	17:30	2	4	
05:45	0	1	1	3	4	17:45 2 9 4 16 25
06:00	2	1	18:00	4	0	
06:15	0	0	18:15	1	4	
06:30	1	2	18:30	3	2	
06:45	2	5	5	8	13	18:45 1 9 3 9 18
07:00	2	1	19:00	3	4	
07:15	1	3	19:15	3	2	
07:30	2	2	19:30	1	2	
07:45	2	7	1	7	14	19:45 4 11 1 9 20
08:00	4	3	20:00	1	0	
08:15	3	1	20:15	5	0	
08:30	4	3	20:30	0	1	
08:45	0	11	5	12	23	20:45 1 7 0 1 8
09:00	1	7	21:00	3	4	
09:15	6	3	21:15	1	1	
09:30	5	4	21:30	1	0	
09:45	3	15	4	18	33	21:45 0 5 0 5 10
10:00	8	6	22:00	0	0	
10:15	0	3	22:15	4	0	
10:30	2	1	22:30	1	0	
10:45	3	13	3	13	26	22:45 1 6 0 0 6
11:00	5	2	23:00	2	0	
11:15	5	3	23:15	0	0	
11:30	8	1	23:30	0	0	
11:45	16	33	7	13	46	23:45 1 3 0 0 3
<b>Total Vol.</b>	<b>121</b>	<b>83</b>	<b>204</b>	<b>242</b>	<b>98</b>	<b>340</b>
<b>Daily Totals</b>						
			INI	OUT1		Combined
			363	181		544
<b>AM</b>						
<b>Split %</b>	59.3%	40.7%	<b>37.5%</b>	71.2%	28.8%	<b>62.5%</b>
<b>Peak Hour</b>	11:45	08:45	<b>11:45</b>	12:30	16:15	<b>12:15</b>
<b>Volume</b>	66	19	<b>82</b>	94	25	<b>106</b>
<b>P.H.F.</b>	0.75	0.68	<b>0.82</b>	0.75	0.89	<b>0.82</b>

pacific@aimtd.com

Tel. 951 249 3226



**MOUNTAIN VIEW & UNION CITY**

**(1159 N Rengstorff Ave, Mountain View, CA 94043)  
(53 W El Camino Real, Mountain View, CA 94040)  
(32060 Union Landing Blvd, Union City, CA 94587)**

Prepared by National Data & Surveying Services  
**In-N-Out Parking & Queues**

Locations: 17-7657  
 City: Mountain View & Union City, CA

Day: Saturday  
 Date: 9/16/2017

Parking Study												
Time	1. 1159 N Rengstorff, Mountain View			2. 53 El Camino Real, Mountain View					3. 32060 Union Landing, Union City			Grand Total
	Reg	HC	Sub Total	Reg	HC	Reserved	NP	Sub Total	Reg	HC	Sub Total	
Spaces	63	4	67	44	4	4	0	52	40	2	42	161
12:00 PM	44	1	45	39	1	3	0	43	38	2	40	128
12:30 PM	50	2	52	42	0	4	0	46	36	2	38	136
1:00 PM	45	3	48	41	2	3	1	47	39	1	40	135
1:30 PM	63	3	66	39	2	1	0	42	40	2	42	150
2:00 PM	53	1	54	38	1	0	0	39	36	1	37	130

Queue Study			
Time	1. 1159 N Rengstorff, Mountain View Drive-Thru Max Queue	2. 53 El Camino Real, Mountain View Drive-Thru Max Queue	3. 32060 Union Landing, Union City Drive-Thru Max Queue
12:00 PM	25	17	13
12:15 PM	22	15	14
12:30 PM	28	17	17
12:45 PM	31	18	12
1:00 PM	30	19	11
1:15 PM	23	15	14
1:30 PM	28	13	20
1:45 PM	29	15	25
2:00 PM	x	x	14

Driveway In & Outs						
Site	1		2		3	
Time	IN	OUT	IN	OUT	IN	OUT
12:00 PM	38	32	45	47	37	23
12:15 PM	36	38	41	38	39	43
12:30 PM	40	27	38	39	34	36
12:45 PM	39	42	47	45	34	40
1:00 PM	39	40	35	37	38	27
1:15 PM	38	29	42	48	44	39
1:30 PM	41	42	28	27	42	43
1:45 PM	29	37	43	45	33	37
Sum	300	287	319	326	301	288

**NOTES:**  
2. 53 El Camino Real, Mountain View  
 • A In-N-Out employee manually taking orders halted the queue several times.

**RANCHO SAN MARGARITA**

**(30121 Santa Margarita Pkwy, Rancho Santa Margarita, Ca 92688)**





## Perrie Ilercil

---

**From:** Nick Lowe <nlowe@carsonca.gov>  
**Sent:** Friday, July 02, 2021 3:11 PM  
**To:** Perrie Ilercil; Ryan Kim  
**Cc:** Giancarlo Ganddini; Manraj Bhatia  
**Subject:** RE: In-N-Out Burger (20700 Avalon Boulevard) Project -MOU Submittal

Hi Ryan,

Please see below for my only comment on the MOU.

- Change Existing + Project scenario to Existing + Ambient + Project

Thank you,

Nicholas Lowe, PE  
Consultant Traffic Engineer

---

**From:** Perrie Ilercil [mailto:perrie@ganddini.com]  
**Sent:** Friday, June 25, 2021 9:42 AM  
**To:** Ryan Kim  
**Cc:** Giancarlo Ganddini; Nick Lowe; Manraj Bhatia  
**Subject:** RE: In-N-Out Burger (20700 Avalon Boulevard) Project -MOU Submittal

Hi Ryan,  
I called yesterday morning and left a message to discuss pass-by and counts. See the responses to the Scoping comments in your email below in "grey".

The comments are being incorporated into the revised Scoping Agreement with the exception of the following items. Item #1 I would request that counts be taken now and adjusted as specified below to account for both school-in session, pre-covid conditions, and growth from the historical count to current time based on ambient growth rate of 1% which is greater than CMP growth rate for the City. Item #3 The 50% pass-by rate is appropriate as it is the documented ITE pass-by rate.

Please call me (949-257-3126) if with comments or concerns.

Sincerely,

*Perrie Ilercil*, PE (AZ)  
Senior Engineer

---

**From:** Ryan Kim <rkim@carsonca.gov>  
**Sent:** Tuesday, June 22, 2021 9:45 AM  
**To:** Perrie Ilercil <perrie@ganddini.com>  
**Cc:** Giancarlo Ganddini <giancarlo@ganddini.com>; Nick Lowe <nlowe@carsonca.gov>; Manraj Bhatia <MBhatia@carsonca.gov>  
**Subject:** RE: In-N-Out Burger (20700 Avalon Boulevard) Project -MOU Submittal

Hi Perrie,

Our comments are below:

1. New traffic counts are proposed for this analysis. Any new counts should be conducted when schools are back in session.

*Request reconsideration of the timing of the counts. Given that the traffic may or may not reflect a standardized condition "school in session" by mid-August. It is requested to conduct new counts at this time which will be reviewed for a "adjustment factor" based on historical pre-covid count of the Del Amo intersections at Main St, Avalon Blvd and Central Ave from April of 2017 during school year. By applying a 1% growth factor to the historical count, a schools in-session pre-covid with growth value for 2021 can be derived to establish the "standardized existing 2021". Then the new count will be compared to the "standardized value" and will be factored accordingly.*

2. It is recommended that the VMT assessment be a separate document from the LOS analysis as LOS is no longer a CEQA requirement.

*Revised as specified. See VMT Letter Report is being prepared.*

3. The assumed 50% pass by rate in the PM peak hour seems high, especially when compared to the MD pass by rate of 25%. It is recommended to use the 25% pass by rate for PM if not provided by ITE.

*Clarification provided. The ITE Trip Generation Handbook, 3<sup>rd</sup> Edition, 2017 specifies fast-food with drive-thru pass-by percentages as 49% AM peak hour and 50% PM peak hour. As noted in the trip generation footnote, to provide a conservative pass-by the midday uses 25% ( not 49%AM or 50%PM). The 25% pass-by rate is to provide an abundance of caution. The 50% PM is an ITE value; therefore, was not modified based on comparison of midday pass-by.*

4. Will the site plan be revised? The City had comments on it especially relating to the queue length and pedestrian access.

*I am not aware of a site plan change at this point. The drive-thru queue is to be analyzed using In-N-Out drive-thru counts, and the queue layout and contingency plan included in the report.*

*Please provide a pdf of the comments that you are referring to so that this can be passed to architect/civil or incorporated into Traffic report.*

5. Additional intersections should be added to the analysis if intersections experience 50 or more peak hour project trips.

*Revised as specified. Intersections added based on 50 peak hour trips.*

6. It is recommended to apply 25% of Trip Distribution to/from all north, south, east and west.

*Revised as specified. Distribution revised from 30-30/20-20 to 25-25/25-25%.*

Sincerely,

**Ryan Kim**, PhD, PE, TE | Traffic Engineer  
City of Carson | Public Works | Engineering Division  
701 E. Carson St., Carson, CA 90745  
T: 310.952.1700 x 1815 | [rkim@carsonca.gov](mailto:rkim@carsonca.gov)  
**City Hall is closed every Friday.**

---

**From:** Perrie Ilercil [<mailto:perrie@ganddini.com>]  
**Sent:** Tuesday, June 22, 2021 8:16 AM  
**To:** Ryan Kim; Nick Lowe; Manraj Bhatia  
**Cc:** Max Castillo; Giancarlo Ganddini  
**Subject:** RE: In-N-Out Burger (20700 Avalon Boulevard) Project -MOU Submittal

Hi Ryan / Nick

Could you provide an update on the MOU sent 10 days ago.

At your earliest convenience, provide your approval, so that traffic counts can be ordered.



Sincerely,

*Perrie Ilercil*, PE (AZ)  
Senior Engineer



**GANDDINI GROUP, INC.**  
550 Parkcenter Drive, Suite 202  
Santa Ana, CA 92705  
c. 949 257-3126  
e: [perrie@ganddini.com](mailto:perrie@ganddini.com)

---

**From:** Perrie Ilercil  
**Sent:** Friday, June 11, 2021 5:46 PM  
**To:** Ryan Kim ([RKim@carson.ca.us](mailto:RKim@carson.ca.us)) <[RKim@carson.ca.us](mailto:RKim@carson.ca.us)>; Nicholas Lowe ([nlowe@carsonca.gov](mailto:nlowe@carsonca.gov)) <[nlowe@carsonca.gov](mailto:nlowe@carsonca.gov)>  
**Cc:** Max Castillo ([MCastillo@carson.ca.us](mailto:MCastillo@carson.ca.us)) <[MCastillo@carson.ca.us](mailto:MCastillo@carson.ca.us)>; Giancarlo Ganddini <[giancarlo@ganddini.com](mailto:giancarlo@ganddini.com)>  
**Subject:** In-N-Out Burger (20700 Avalon Boulevard) Project -MOU Submittal

Hi Ryan / Nick

See the attached Memorandum of Understanding prepared for the In-N-Out Burger (20700 Avalon Boulevard) Project for your review.

The available historical queue date for In-N-Out Burger was review to include counts for pre-covid, weekday midday counts. The data set includes 8 locations including 3 in the County of Los Angeles, 4 in the County of Riverside and 1 in the County of San Bernardino.

Let me know if you have questions or comments. At your earliest convenience, provide your approval, so that traffic counts can be ordered.

Sincerely,

*Perrie Ilercil*, PE (AZ)  
Senior Engineer



**GANDDINI GROUP, INC.**  
550 Parkcenter Drive, Suite 202  
Santa Ana, CA 92705  
o. 714 795 3100 x 103  
c. 949 257-3126  
e: [perrie@ganddini.com](mailto:perrie@ganddini.com)  
[www.ganddini.com](http://www.ganddini.com)

**APPENDIX C**  
**COUNT DATA**

# INTERSECTION TURNING MOVEMENT COUNTS

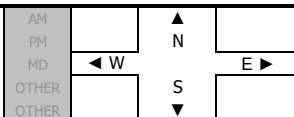
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:**  
NORTH & SOUTH: Carson  
EAST & WEST: Avalon  
Turmont

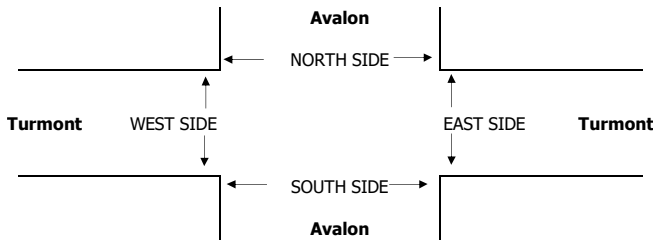
**PROJECT #:** SC3114  
**LOCATION #:** 1  
**CONTROL:** SIGNAL

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	Avalon			Avalon			Turmont			Turmont				NB	SB	EB	WB	TTL	
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR							
<b>MD</b>	11:00 AM	0	197	27	14	196	0	0	0	0	16	0	12	462	6	0	0	0	6
	11:15 AM	0	189	26	12	183	0	0	0	0	21	0	10	441	12	0	0	0	12
	11:30 AM	0	191	26	6	206	0	0	0	0	21	0	13	463	11	0	0	0	11
	11:45 AM	0	170	30	4	179	0	0	0	0	23	0	7	413	5	0	0	0	5
	12:00 PM	0	246	33	9	215	0	0	0	0	21	0	12	536	10	1	0	0	11
	12:15 PM	0	227	36	7	193	0	0	0	0	23	0	11	497	8	0	0	0	8
	12:30 PM	0	239	34	9	203	0	0	0	0	23	0	11	519	11	0	0	0	11
	12:45 PM	0	241	26	7	199	0	0	0	0	29	0	7	509	3	2	0	0	5
	1:00 PM	0	219	29	8	187	0	0	0	0	22	0	13	478	14	0	0	0	14
	1:15 PM	0	216	34	9	199	0	0	0	0	24	0	16	498	10	0	0	0	10
	1:30 PM	0	232	40	9	195	0	0	0	0	24	0	13	513	6	0	0	0	6
	1:45 PM	0	217	29	14	211	0	0	0	0	23	0	10	504	7	0	0	0	7
	VOLUMES	0	2,584	370	108	2,366	0	0	0	0	270	0	135	5,939	103	3	0	0	106
	APPROACH %	0%	85%	12%	4%	96%	0%	0%	0%	0%	67%	0%	33%						
APP/DEPART	3,057	/	2,722	2,477	/	2,739	0	/	478	405	/	0	0						
BEGIN PEAK HR	12:00 PM																		
VOLUMES	0	953	129	32	810	0	0	0	0	96	0	41	2,096						
APPROACH %	0%	86%	12%	4%	96%	0%	0%	0%	0%	70%	0%	30%							
PEAK HR FACTOR	0.964			0.939			0.000			0.951			0.958						
APP/DEPART	1,114	/	997	845	/	938	0	/	161	137	/	0	0						
<b>PM</b>	4:00 PM	0	267	44	17	299	0	0	0	25	0	16	668	8	0	0	0	8	
	4:15 PM	0	240	37	17	355	0	0	0	15	0	13	677	8	0	0	0	8	
	4:30 PM	0	250	39	13	308	0	0	0	23	0	10	643	9	0	0	0	9	
	4:45 PM	0	224	36	20	287	0	0	0	16	0	12	595	9	0	0	0	9	
	5:00 PM	0	261	50	16	322	0	0	0	24	0	9	682	5	0	0	0	5	
	5:15 PM	0	245	42	22	321	0	0	0	26	0	15	671	6	0	0	0	6	
	5:30 PM	0	252	45	21	295	0	0	0	12	0	7	632	7	2	0	0	9	
	5:45 PM	0	245	45	16	292	0	0	0	27	0	17	642	8	0	0	0	8	
	VOLUMES	0	1,984	338	142	2,479	0	0	0	0	168	0	99	5,272	60	2	0	0	62
	APPROACH %	0%	83%	14%	5%	95%	0%	0%	0%	0%	63%	0%	37%						
	APP/DEPART	2,382	/	2,085	2,623	/	2,707	0	/	480	267	/	0	0					
	BEGIN PEAK HR	5:00 PM																	
	VOLUMES	0	1,003	182	75	1,230	0	0	0	0	89	0	48	2,655					
	APPROACH %	0%	83%	15%	6%	94%	0%	0%	0%	0%	65%	0%	35%						
PEAK HR FACTOR	0.958			0.953			0.000			0.778			0.966						
APP/DEPART	1,211	/	1,053	1,307	/	1,345	0	/	257	137	/	0	0						





# INTERSECTION TURNING MOVEMENT COUNTS

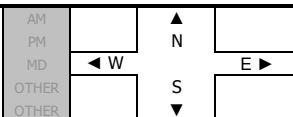
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Turmont

**PROJECT #:** SC3114  
**LOCATION #:** 1  
**CONTROL:** SIGNAL

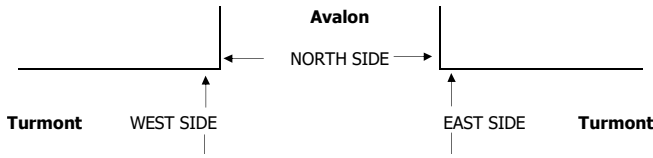
NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Avalon			Avalon			Turmont			Turmont				
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
	1	3	0	1	3	X	X	X	X	1	X	1		
MD	11:00 AM	0	183	30	8	168	0	0	0	28	0	12	429	
	11:15 AM	0	191	38	3	184	0	0	0	28	0	12	456	
	11:30 AM	0	192	35	9	226	0	0	0	23	0	7	492	
	11:45 AM	0	200	35	5	212	0	0	0	26	0	8	486	
	12:00 PM	0	207	30	7	204	0	0	0	30	0	12	490	
	12:15 PM	0	205	31	11	221	0	0	0	22	0	5	495	
	12:30 PM	0	193	37	13	229	0	0	0	38	0	6	516	
	12:45 PM	0	201	39	8	221	0	0	0	19	0	13	501	
	1:00 PM	0	210	34	9	219	0	0	0	22	0	13	507	
	1:15 PM	0	241	44	9	212	0	0	0	24	0	7	537	
	1:30 PM	0	210	28	11	211	0	0	0	25	0	6	491	
	1:45 PM	0	243	44	10	193	0	0	0	25	0	11	526	
	VOLUMES	0	2,476	425	103	2,500	0	0	0	0	310	0	112	6,026
	APPROACH %	0%	83%	14%	4%	96%	0%	0%	0%	0%	73%	0%	27%	
APP/DEPART	2,999	/	2,590	2,605	/	2,908	0	/	528	422	/	0	0	
BEGIN PEAK HR	12:30 PM													
VOLUMES	0	845	154	39	881	0	0	0	0	103	0	39	2,097	
APPROACH %	0%	82%	15%	4%	96%	0%	0%	0%	0%	73%	0%	27%		
PEAK HR FACTOR	0.888			0.951			0.000			0.807			0.965	
APP/DEPART	1,034	/	885	921	/	1,019	0	/	193	142	/	0	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
3	0	0	0	3
8	0	0	0	8
7	0	0	0	7
11	0	0	0	11
9	1	0	0	10
12	0	0	0	12
8	0	0	0	8
12	1	0	0	13
9	0	0	0	9
6	0	0	0	6
4	0	0	0	4
9	0	0	0	9
98	2	0	0	100



# INTERSECTION TURNING MOVEMENT COUNTS

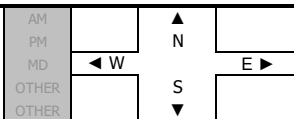
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 2  
**CONTROL:** SIGNAL

NOTES:

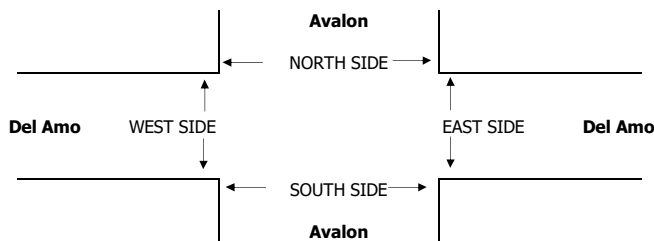


Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Avalon			Avalon			Del Amo			Del Amo				
LANES:	NL 1	NT 3	NR 1	SL 2	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1		
<b>MD</b>	11:00 AM	28	153	33	42	115	29	29	78	35	48	75	22	687
	11:15 AM	39	151	34	35	125	36	35	60	21	51	77	36	700
	11:30 AM	34	149	34	43	134	35	26	82	36	57	68	32	730
	11:45 AM	37	144	40	44	143	38	23	100	27	51	85	32	764
	12:00 PM	27	203	32	50	156	24	35	89	46	58	74	32	826
	12:15 PM	38	179	58	41	137	21	49	109	42	71	110	27	882
	12:30 PM	39	180	44	46	132	41	47	96	43	54	86	27	835
	12:45 PM	43	210	46	43	140	31	37	95	34	47	87	29	842
	1:00 PM	48	158	46	28	150	47	41	95	40	47	83	25	808
	1:15 PM	37	178	38	38	139	33	44	88	32	50	88	27	792
	1:30 PM	30	205	33	30	130	34	40	89	36	50	95	38	810
	1:45 PM	38	177	37	46	146	32	38	124	36	40	113	19	846
	VOLUMES	438	2,087	475	486	1,647	401	444	1,105	428	624	1,041	346	9,945
	APPROACH %	14%	67%	15%	18%	60%	15%	22%	55%	21%	30%	50%	17%	
APP/DEPART	3,102	/	3,074	2,731	/	2,801	2,017	/	2,150	2,095	/	1,920	0	
BEGIN PEAK HR	12:00 PM													
VOLUMES	147	772	180	180	565	117	168	389	165	230	357	115	3,538	
APPROACH %	13%	68%	16%	19%	60%	13%	23%	53%	22%	31%	49%	16%		
PEAK HR FACTOR	0.926			0.945			0.899			0.837			0.955	
APP/DEPART	1,134	/	1,127	934	/	995	737	/	780	733	/	636	0	
<b>PM</b>	4:00 PM	31	268	69	64	204	75	40	230	62	64	116	25	1,248
	4:15 PM	25	200	44	47	222	69	51	242	52	55	116	24	1,147
	4:30 PM	37	203	36	58	226	42	40	229	62	47	133	34	1,147
	4:45 PM	34	197	33	55	185	46	33	237	58	52	105	22	1,057
	5:00 PM	25	225	57	53	221	63	45	233	52	56	134	37	1,201
	5:15 PM	44	214	47	56	219	64	40	235	55	46	112	20	1,152
	5:30 PM	30	204	44	61	192	59	40	241	57	52	108	38	1,126
	5:45 PM	38	192	59	57	181	61	52	234	62	52	97	41	1,126
	VOLUMES	264	1,703	389	451	1,650	479	341	1,881	460	424	921	241	9,487
	APPROACH %	11%	71%	16%	16%	60%	18%	13%	70%	17%	26%	56%	15%	
	APP/DEPART	2,407	/	2,442	2,737	/	2,585	2,692	/	2,786	1,651	/	1,674	0
	BEGIN PEAK HR	4:00 PM												
	VOLUMES	127	868	182	224	837	232	164	938	234	218	470	105	4,747
	APPROACH %	11%	72%	15%	16%	61%	17%	12%	70%	17%	26%	57%	13%	
PEAK HR FACTOR	0.804			0.958			0.971			0.934			0.925	
APP/DEPART	1,206	/	1,219	1,375	/	1,318	1,340	/	1,377	826	/	833	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
13	22	4	10	49
9	17	4	7	37
10	11	3	4	28
6	12	4	3	25
4	17	4	8	33
11	17	5	11	44
13	19	3	5	40
7	19	3	7	36
9	15	4	12	40
6	13	0	5	24
7	12	4	5	28
7	23	2	7	39
102	197	40	84	423

7	16	3	9	35
4	17	0	6	27
12	26	1	7	46
6	23	0	11	40
7	20	2	10	39
4	23	0	6	33
5	16	3	8	32
6	16	1	8	31
51	157	10	65	283



# INTERSECTION TURNING MOVEMENT COUNTS

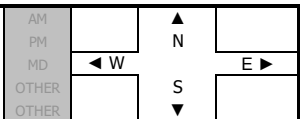
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 2  
**CONTROL:** SIGNAL

NOTES:

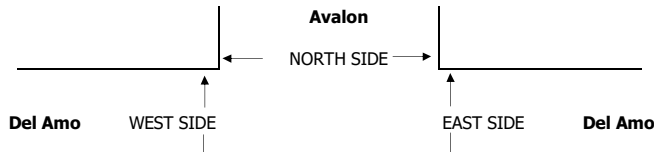


Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Avalon			Avalon			Del Amo			Del Amo			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
11:00 AM	24	148	27	32	123	28	30	68	34	46	80	26	666
11:15 AM	20	165	43	26	136	30	34	78	24	47	69	30	702
11:30 AM	44	180	37	38	154	41	37	70	34	52	76	18	781
11:45 AM	30	166	37	35	164	36	31	78	24	46	76	26	749
12:00 PM	34	181	41	37	148	36	29	83	46	44	78	28	785
12:15 PM	30	185	36	35	187	25	36	91	48	62	61	24	820
12:30 PM	35	182	60	43	171	44	26	92	29	54	85	22	843
12:45 PM	27	159	57	32	150	33	44	95	45	51	70	35	798
1:00 PM	25	164	36	40	171	28	39	91	26	57	87	26	790
1:15 PM	20	218	47	34	154	36	28	80	38	49	85	23	812
1:30 PM	41	168	53	35	138	28	35	92	24	48	77	31	770
1:45 PM	32	208	47	30	155	29	49	90	29	59	83	30	841
VOLUMES	362	2,124	521	417	1,851	394	418	1,008	401	615	927	319	9,871
APPROACH %	11%	67%	16%	14%	64%	14%	23%	54%	22%	31%	47%	16%	
APP/DEPART	3,163	/	3,103	2,904	/	3,023	1,850	/	2,039	1,954	/	1,706	0
BEGIN PEAK HR	12:00 PM												
VOLUMES	126	707	194	147	656	138	135	361	168	211	294	109	3,425
APPROACH %	12%	65%	18%	14%	64%	14%	20%	53%	25%	33%	45%	17%	
PEAK HR FACTOR	0.946			0.930			0.902			0.983			0.979
APP/DEPART	1,082	/	1,029	1,019	/	1,090	675	/	737	649	/	569	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
13	21	0	5	39
11	17	2	10	40
9	21	4	7	41
14	23	2	9	48
18	11	3	14	46
7	22	2	9	40
9	16	3	4	32
21	29	3	8	61
11	15	0	8	34
20	19	1	6	46
10	24	0	7	41
13	24	3	6	46
156	242	23	93	514

MD





# INTERSECTION TURNING MOVEMENT COUNTS

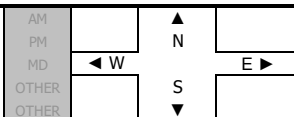
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Carson Plaza

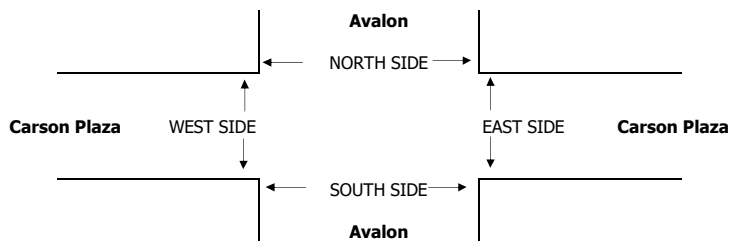
**PROJECT #:** SC3114  
**LOCATION #:** 3  
**CONTROL:** SIGNAL

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	Avalon			Avalon			Carson Plaza			Carson Plaza				NB	SB	EB	WB	TTL	
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		0	0	0	0		
<b>MD</b>	11:00 AM	24	167	19	22	170	7	13	2	24	12	1	34	495	10	19	0	0	29
	11:15 AM	19	185	24	25	156	6	5	2	17	21	3	26	489	4	22	0	0	26
	11:30 AM	20	154	23	32	194	6	13	3	10	23	4	19	501	4	16	0	0	20
	11:45 AM	20	162	35	39	167	9	13	5	20	16	3	37	526	4	15	0	0	19
	12:00 PM	30	191	39	35	188	3	10	5	25	24	3	36	589	2	19	0	0	21
	12:15 PM	34	218	27	38	200	10	16	5	21	35	2	38	644	11	23	0	0	34
	12:30 PM	31	223	26	42	200	3	11	3	15	19	4	31	608	9	20	0	0	29
	12:45 PM	16	203	26	27	192	9	8	3	22	20	5	38	569	8	19	0	0	27
	1:00 PM	20	195	31	38	187	5	1	5	15	26	4	31	558	5	28	0	0	33
	1:15 PM	24	189	17	28	176	4	16	2	19	30	4	35	544	3	16	0	0	19
	1:30 PM	22	198	14	34	173	2	10	1	21	16	3	25	519	5	18	0	0	23
	1:45 PM	20	191	15	28	205	4	11	5	14	35	2	37	567	11	24	0	0	35
	VOLUMES	280	2,276	296	388	2,208	68	127	41	223	277	38	387	6,924	76	239	0	0	315
	APPROACH %	10%	78%	10%	13%	76%	2%	32%	10%	57%	39%	5%	55%						
APP/DEPART	2,928	/	3,029	2,903	/	2,784	391	/	725	702	/	386	0						
BEGIN PEAK HR	12:00 PM																		
VOLUMES	111	835	118	142	780	25	45	16	83	98	14	143	2,521						
APPROACH %	10%	76%	11%	14%	76%	2%	31%	11%	58%	38%	5%	56%							
PEAK HR FACTOR	0.943			0.948			0.857			0.850			0.930						
APP/DEPART	1,094	/	1,104	1,028	/	991	144	/	276	255	/	150	0						
<b>PM</b>	4:00 PM	16	240	23	24	268	3	20	5	31	22	1	29	682	7	21	0	0	28
	4:15 PM	12	206	18	35	247	10	13	16	36	21	3	26	643	3	27	0	0	30
	4:30 PM	12	232	15	42	285	3	12	7	24	21	5	29	687	5	22	0	0	27
	4:45 PM	12	215	16	52	298	3	12	7	31	16	3	37	702	4	19	0	0	23
	5:00 PM	9	230	17	38	270	2	20	2	41	24	3	28	684	3	35	0	0	38
	5:15 PM	17	223	24	41	266	2	16	13	28	23	1	38	692	4	25	0	0	29
	5:30 PM	7	237	20	32	271	6	15	9	43	18	1	26	685	5	18	0	0	23
	5:45 PM	11	233	24	40	244	8	12	10	23	29	5	34	673	5	27	0	0	32
	VOLUMES	96	1,816	157	304	2,149	37	120	69	257	174	22	247	5,678	36	194	0	0	230
	APPROACH %	5%	86%	7%	11%	80%	1%	27%	15%	58%	39%	5%	56%						
	APP/DEPART	2,105	/	2,377	2,684	/	2,616	446	/	530	443	/	155	0					
	BEGIN PEAK HR	4:30 PM																	
	VOLUMES	50	900	72	173	1,119	10	60	29	124	84	12	132	2,882					
	APPROACH %	5%	87%	7%	12%	80%	1%	28%	14%	58%	37%	5%	58%						
PEAK HR FACTOR	0.968			0.943			0.845			0.919			0.994						
APP/DEPART	1,038	/	1,193	1,403	/	1,343	213	/	274	228	/	72	0						



## INTERSECTION TURNING MOVEMENT COUNTS

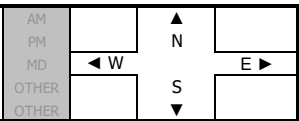
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Carson Plaza

**PROJECT #:** SC3114  
**LOCATION #:** 3  
**CONTROL:** SIGNAL

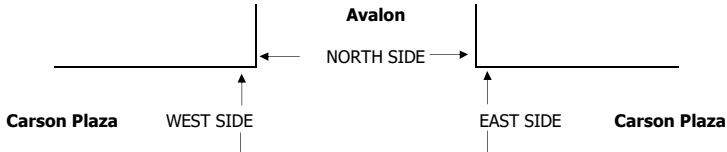
NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Avalon			Avalon			Carson Plaza			Carson Plaza				
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
	1	3	0	1	3	0	0	1	0	0	2	0		
MD	11:00 AM	11	164	22	30	167	6	11	3	15	27	4	27	487
	11:15 AM	17	176	28	36	157	10	7	1	11	22	3	29	497
	11:30 AM	17	192	26	44	184	0	9	2	12	24	3	37	550
	11:45 AM	12	202	25	39	196	8	9	2	6	18	3	33	553
	12:00 PM	16	191	29	50	194	16	9	4	13	23	5	40	590
	12:15 PM	17	188	32	41	218	9	6	7	6	29	8	42	603
	12:30 PM	21	203	27	50	197	4	7	4	15	31	2	33	594
	12:45 PM	17	209	26	38	224	6	11	4	9	27	3	35	609
	1:00 PM	22	177	29	49	212	4	10	2	10	28	1	32	576
	1:15 PM	20	218	32	42	212	5	9	3	9	23	3	45	621
	1:30 PM	18	214	24	43	180	9	13	1	3	36	1	33	575
	1:45 PM	17	227	28	25	199	1	6	7	4	37	3	41	595
	VOLUMES	205	2,361	328	487	2,340	78	107	40	113	325	39	427	7,155
	APPROACH %	7%	79%	11%	16%	75%	3%	41%	15%	43%	41%	5%	54%	
APP/DEPART	2,986	/	3,108	3,118	/	2,870	260	/	855	791	/	322	0	
BEGIN PEAK HR	12:00 PM													
VOLUMES	71	791	114	179	833	35	33	19	43	110	18	150	2,516	
APPROACH %	7%	78%	11%	16%	74%	3%	35%	20%	45%	40%	6%	54%		
PEAK HR FACTOR	0.959			0.961			0.913			0.880			0.984	
APP/DEPART	1,017	/	1,053	1,126	/	1,027	95	/	312	278	/	124	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
4	17	0	0	21
9	20	0	0	29
2	10	0	0	12
8	18	0	0	26
9	22	0	0	31
11	25	0	0	36
8	17	0	0	25
13	15	0	0	28
11	14	0	0	25
5	19	0	0	24
6	18	0	0	24
6	18	0	0	24
92	213	0	0	305



# INTERSECTION TURNING MOVEMENT COUNTS

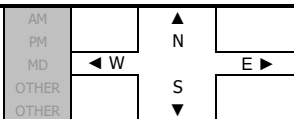
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:**  
NORTH & SOUTH: Carson  
Avalon  
EAST & WEST: Dominguez

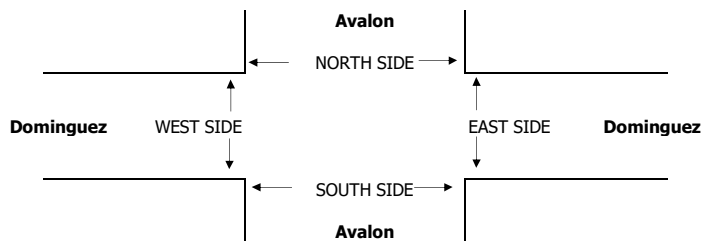
**PROJECT #:** SC3114  
**LOCATION #:** 4  
**CONTROL:** SIGNAL

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	Avalon			Avalon			Dominguez			Dominguez				NB	SB	EB	WB	TTL	
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		0	0	0	0		
<b>MD</b>	11:00 AM	6	213	118	32	166	9	4	3	3	109	1	24	688	5	1	0	4	10
	11:15 AM	4	220	94	27	176	6	3	1	7	103	3	34	678	2	4	0	1	7
	11:30 AM	2	218	110	28	204	10	6	3	9	122	5	36	753	5	6	0	1	12
	11:45 AM	7	229	114	25	180	5	7	2	7	122	4	26	728	1	8	0	11	20
	12:00 PM	7	279	102	26	199	7	4	4	8	138	4	43	821	2	6	0	3	11
	12:15 PM	4	246	111	43	217	9	6	6	11	134	10	40	837	7	4	0	3	14
	12:30 PM	2	256	97	32	225	14	6	4	13	154	4	39	846	2	5	0	3	10
	12:45 PM	2	246	99	39	231	3	4	3	7	116	2	39	791	3	4	0	2	9
	1:00 PM	1	215	89	22	200	7	2	0	3	128	2	35	704	3	5	0	4	12
	1:15 PM	7	197	108	26	218	6	8	4	4	137	2	35	752	6	6	0	4	16
	1:30 PM	5	229	92	27	219	6	2	3	9	126	4	48	770	1	9	0	1	11
	1:45 PM	5	225	101	31	224	3	2	3	6	134	2	38	774	2	7	0	1	10
	VOLUMES	52	2,773	1,235	358	2,459	85	54	36	87	1,523	43	437	9,284	39	65	0	38	142
	APPROACH %	1%	68%	30%	12%	83%	3%	31%	20%	49%	75%	2%	21%						
APP/DEPART	4,099	/	3,329	2,967	/	4,108	177	/	1,667	2,041	/	180	0						
BEGIN PEAK HR	12:00 PM			140	872	33	20	17	39	542	20	161	3,339						
VOLUMES	15	1,027	409	13%	82%	3%	26%	22%	51%	74%	3%	22%							
APPROACH %	1%	70%	28%																
PEAK HR FACTOR	0.939			0.960			0.826			0.918			0.975						
APP/DEPART	1,465	/	1,227	1,064	/	1,467	76	/	577	734	/	68	0						
<b>PM</b>	4:00 PM	10	264	92	30	300	9	3	5	9	146	4	27	899	4	9	0	5	18
	4:15 PM	5	212	98	49	265	3	4	5	10	139	0	45	835	1	7	0	2	10
	4:30 PM	2	223	100	41	312	5	2	1	7	147	2	29	871	8	9	0	1	18
	4:45 PM	6	222	92	50	266	7	2	3	8	146	3	38	843	2	7	0	0	9
	5:00 PM	4	223	98	55	277	3	5	7	9	131	4	35	851	3	7	0	2	12
	5:15 PM	4	220	78	43	272	3	3	0	6	140	1	37	807	2	8	0	3	13
	5:30 PM	2	267	92	43	273	3	2	0	4	107	3	36	832	2	1	0	5	8
	5:45 PM	6	212	84	32	242	7	2	1	9	104	6	40	745	5	11	0	2	18
	VOLUMES	39	1,843	734	343	2,207	40	23	22	62	1,060	23	287	6,789	27	59	0	20	106
	APPROACH %	1%	70%	28%	13%	83%	2%	21%	21%	58%	76%	2%	21%						
	APP/DEPART	2,643	/	2,212	2,649	/	3,356	107	/	1,119	1,390	/	102	0					
	BEGIN PEAK HR	4:00 PM			170	1,143	24	11	14	34	578	9	139	3,503					
	VOLUMES	23	921	382	12%	83%	2%	19%	24%	58%	79%	1%	19%						
	APPROACH %	2%	69%	28%															
PEAK HR FACTOR	0.906			0.933			0.776			0.981			0.955						
APP/DEPART	1,341	/	1,103	1,369	/	1,770	59	/	574	734	/	56	0						





# INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Dominguez

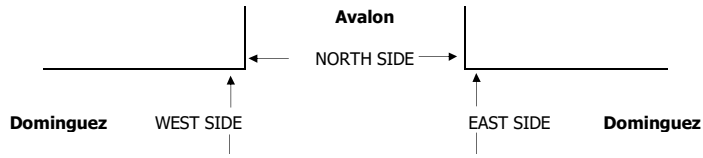
**PROJECT #:** SC3114  
**LOCATION #:** 4  
**CONTROL:** SIGNAL

**NOTES:**

AM		▲	
PM		N	
MD	◀ W		E ▶
OTHER		S	
OTHER		▼	

Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	Avalon			Avalon			Dominguez			Dominguez				NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		0	0	0	0	0
11:00 AM	1	207	124	31	179	6	1	0	5	129	0	27	710	5	9	0	2	16
11:15 AM	5	248	128	31	187	0	1	2	7	132	1	33	775	5	6	0	3	14
11:30 AM	6	231	125	20	196	11	2	3	7	132	1	48	782	5	2	0	5	12
11:45 AM	7	250	138	21	197	5	3	5	6	165	5	25	827	4	6	0	3	13
12:00 PM	9	254	131	32	205	3	1	3	12	139	3	20	812	6	6	0	2	14
12:15 PM	5	222	124	46	207	3	3	3	9	136	1	40	799	3	10	0	6	19
12:30 PM	9	255	122	30	236	4	3	3	4	121	4	43	834	8	4	0	5	17
12:45 PM	9	260	134	47	213	9	5	3	12	137	3	41	873	3	7	0	2	12
1:00 PM	3	246	153	32	215	7	6	0	9	180	2	40	893	5	3	0	3	11
1:15 PM	8	248	125	31	228	6	7	0	6	135	2	30	826	7	7	0	1	15
1:30 PM	4	290	137	27	226	6	2	2	5	160	1	31	891	0	8	0	1	9
1:45 PM	10	257	129	34	225	6	2	3	7	143	2	35	853	4	2	0	2	8
VOLUMES	76	2,968	1,570	382	2,514	66	36	27	89	1,709	25	413	10,035	55	70	0	35	160
APPROACH %	2%	64%	34%	13%	83%	2%	24%	18%	59%	78%	1%	19%						
APP/DEPART	4,669	/	3,487	3,032	/	4,367	152	/	2,014	2,182	/	167	0					
BEGIN PEAK HR	12:45 PM																	
VOLUMES	24	1,044	549	137	882	28	20	5	32	612	8	142	3,530					
APPROACH %	1%	64%	34%	13%	82%	3%	35%	9%	56%	80%	1%	18%						
PEAK HR FACTOR	0.947			0.971			0.713			0.854			0.976					
APP/DEPART	1,632	/	1,231	1,072	/	1,541	57	/	698	769	/	60	0					



# INTERSECTION TURNING MOVEMENT COUNTS

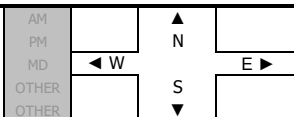
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:** Carson  
NORTH & SOUTH: Main  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 5  
**CONTROL:** SIGNAL

NOTES:

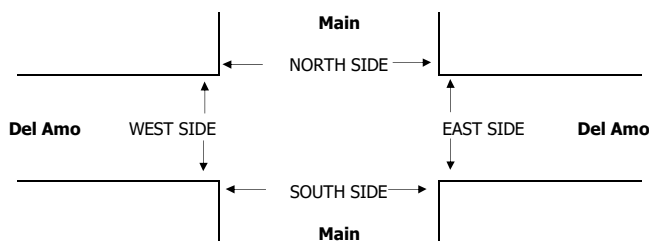


Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL		
	Main			Main			Del Amo			Del Amo					
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0			
<b>MD</b>	11:00 AM	10	55	27	12	55	16	27	80	8	21	86	11	408	
	11:15 AM	4	55	31	16	46	21	18	81	10	34	111	10	437	
	11:30 AM	7	52	28	14	49	21	22	98	16	30	92	9	438	
	11:45 AM	9	55	36	13	34	21	25	108	18	27	118	8	472	
	12:00 PM	13	49	41	18	55	18	23	112	16	25	88	10	468	
	12:15 PM	18	58	39	9	52	26	14	126	14	27	114	13	510	
	12:30 PM	12	59	49	15	62	22	25	116	12	31	110	20	533	
	12:45 PM	14	59	44	18	56	16	15	109	13	32	115	15	506	
	1:00 PM	7	70	53	10	57	19	22	102	13	49	111	11	524	
	1:15 PM	10	59	43	14	65	23	17	108	9	35	111	8	502	
	1:30 PM	9	80	42	12	63	19	13	135	12	25	124	8	542	
	1:45 PM	9	57	43	13	68	19	17	116	11	45	113	10	521	
	VOLUMES	122	708	476	164	662	241	238	1,291	152	381	1,293	133	5,873	
	APPROACH %	9%	54%	36%	15%	62%	23%	14%	77%	9%	21%	71%	7%		
APP/DEPART	1,307	/	1,080	1,068	/	1,196	1,681	/	1,941	1,817	/	1,656	0		
BEGIN PEAK HR	1:00 PM														
VOLUMES	35	266	181	49	253	80	69	461	45	154	459	37	2,092		
APPROACH %	7%	55%	38%	13%	66%	21%	12%	80%	8%	24%	70%	6%			
PEAK HR FACTOR	0.920			0.930			0.898			0.953			0.963		
APP/DEPART	482	/	373	383	/	452	575	/	693	652	/	574	0		
<b>PM</b>	4:00 PM	13	98	85	36	132	30	31	270	19	62	144	11	931	
	4:15 PM	8	93	82	26	123	26	24	251	15	52	135	12	847	
	4:30 PM	11	81	54	36	147	24	35	282	21	48	131	12	882	
	4:45 PM	15	96	77	35	132	30	25	267	15	44	131	15	882	
	5:00 PM	6	95	68	20	136	30	32	267	37	49	163	9	912	
	5:15 PM	6	96	67	35	153	26	29	237	32	58	139	11	889	
	5:30 PM	11	82	59	46	130	35	23	303	29	46	131	8	903	
	5:45 PM	9	77	58	22	97	24	26	255	20	50	158	13	809	
	VOLUMES	79	718	550	256	1,050	225	225	2,132	188	409	1,132	91	7,065	
	APPROACH %	6%	53%	41%	17%	69%	15%	9%	84%	7%	25%	69%	6%		
	APP/DEPART	1,350	/	1,035	1,532	/	1,650	2,546	/	2,943	1,637	/	1,437	0	
	BEGIN PEAK HR	4:45 PM													
	VOLUMES	38	369	271	136	551	121	109	1,074	113	197	564	43	3,588	
	APPROACH %	6%	54%	40%	17%	68%	15%	8%	83%	9%	25%	70%	5%		
PEAK HR FACTOR	0.904			0.944			0.913			0.910			0.984		
APP/DEPART	680	/	521	808	/	863	1,296	/	1,481	804	/	723	0		

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	4	4
0	0	0	0	0
0	0	0	1	1
0	1	0	1	2
0	0	0	1	1
0	0	0	0	0
1	1	0	10	12

1	0	0	1	2
0	1	0	1	2
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	2	2
3	1	1	5	10



# INTERSECTION TURNING MOVEMENT COUNTS

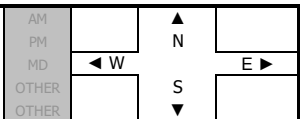
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Main  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 5  
**CONTROL:** SIGNAL

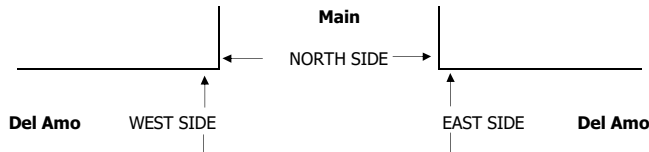
NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Main			Main			Del Amo			Del Amo				
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0		
<b>MD</b>	11:00 AM	8	46	33	11	47	11	17	80	14	28	90	6	391
	11:15 AM	6	55	39	11	36	16	15	74	12	28	81	7	380
	11:30 AM	9	55	37	8	43	17	15	83	13	32	108	5	425
	11:45 AM	8	54	34	6	49	17	19	85	10	24	104	9	419
	12:00 PM	7	43	50	10	34	14	14	111	9	31	105	5	433
	12:15 PM	10	52	45	13	49	17	21	111	13	17	88	16	452
	12:30 PM	6	59	33	18	45	19	9	102	12	31	108	11	453
	12:45 PM	13	58	50	8	55	15	17	123	13	28	87	6	473
	1:00 PM	9	46	40	3	58	18	18	107	18	24	114	8	463
	1:15 PM	5	51	40	6	60	16	14	94	14	27	97	7	431
	1:30 PM	8	57	28	8	64	14	10	108	15	30	96	9	447
	1:45 PM	5	43	38	9	50	23	12	106	9	33	105	8	441
	VOLUMES	94	619	467	111	590	197	181	1,184	152	333	1,183	97	5,219
	APPROACH %	8%	52%	40%	12%	66%	22%	12%	78%	10%	21%	73%	6%	
APP/DEPART	1,182	/	899	900	/	1,077	1,518	/	1,768	1,619	/	1,475	0	
BEGIN PEAK HR	12:15 PM													
VOLUMES	38	215	168	42	207	69	65	443	56	100	397	41	1,845	
APPROACH %	9%	51%	40%	13%	65%	22%	12%	79%	10%	19%	74%	8%		
PEAK HR FACTOR	0.872			0.973			0.922			0.894			0.973	
APP/DEPART	422	/	322	319	/	364	564	/	655	540	/	504	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
1	0	0	0	1
0	0	0	1	1
0	1	0	0	1
0	0	1	2	3
2	2	1	6	11





# INTERSECTION TURNING MOVEMENT COUNTS

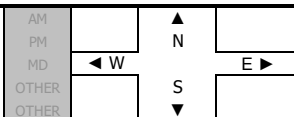
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:** Carson  
NORTH & SOUTH: Central  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 6  
**CONTROL:** SIGNAL

NOTES:

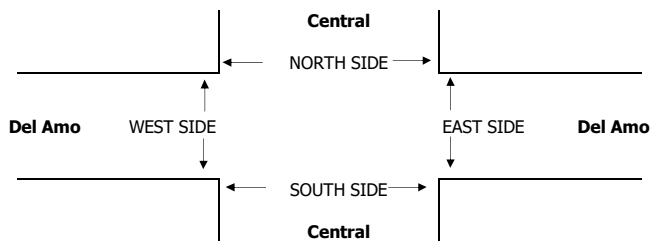


Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Central			Central			Del Amo			Del Amo			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	2	X	2	1	2	X	X	2	0	
11:00 AM	0	0	0	13	0	65	56	110	0	0	133	19	396
11:15 AM	0	0	0	29	0	59	55	104	0	0	105	25	377
11:30 AM	0	0	0	24	0	67	43	109	0	0	144	20	407
11:45 AM	0	0	0	24	0	72	73	122	0	0	140	23	454
12:00 PM	0	0	0	26	0	96	59	148	0	0	159	22	510
12:15 PM	0	0	0	22	0	79	74	155	0	0	119	18	467
12:30 PM	0	0	0	33	0	78	71	124	0	0	153	25	484
12:45 PM	0	0	0	28	0	67	76	151	0	0	133	12	467
1:00 PM	0	0	0	31	0	79	65	138	0	0	133	28	474
1:15 PM	0	0	0	27	0	76	68	132	0	0	120	21	444
1:30 PM	0	0	0	17	0	69	76	110	0	0	155	21	448
1:45 PM	0	0	0	34	0	73	65	156	0	0	136	32	496
VOLUMES	0	0	0	308	0	880	781	1,559	0	0	1,630	266	5,512
APPROACH %	0%	0%	0%	24%	0%	69%	33%	67%	0%	0%	86%	14%	
APP/DEPART	0	/	1,128	1,269	/	0	2,341	/	1,873	1,902	/	2,511	0
BEGIN PEAK HR	12:00 PM												
VOLUMES	0	0	0	109	0	320	280	578	0	0	564	77	1,958
APPROACH %	0%	0%	0%	24%	0%	70%	33%	67%	0%	0%	88%	12%	
PEAK HR FACTOR	0.000			0.864			0.937			0.885			0.940
APP/DEPART	0	/	384	456	/	0	858	/	690	644	/	884	0
4:00 PM	0	0	0	61	0	78	101	297	0	0	162	32	731
4:15 PM	0	0	0	86	0	74	70	282	0	0	141	32	685
4:30 PM	0	0	0	127	0	105	77	283	0	0	162	58	812
4:45 PM	0	0	0	110	0	83	81	270	0	0	112	34	690
5:00 PM	0	0	0	119	0	122	92	319	0	0	163	52	867
5:15 PM	0	0	0	111	0	98	86	325	0	0	149	36	805
5:30 PM	0	0	0	119	0	106	86	289	0	0	137	32	769
5:45 PM	0	0	0	108	0	89	85	314	0	0	151	30	777
VOLUMES	0	0	0	841	0	755	678	2,379	0	0	1,177	306	6,203
APPROACH %	0%	0%	0%	51%	0%	45%	22%	78%	0%	0%	79%	21%	
APP/DEPART	0	/	1,051	1,663	/	0	3,057	/	3,220	1,483	/	1,932	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	0	0	457	0	415	349	1,247	0	0	600	150	3,255
APPROACH %	0%	0%	0%	50%	0%	46%	22%	78%	0%	0%	80%	20%	
PEAK HR FACTOR	0.000			0.902			0.971			0.872			0.927
APP/DEPART	0	/	536	909	/	0	1,596	/	1,704	750	/	1,015	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	9	1	1	11
0	4	0	0	4
0	7	0	0	7
0	6	0	0	6
0	10	0	1	11
0	5	0	1	6
0	7	0	0	7
0	5	0	1	6
0	8	0	1	9
0	4	0	1	5
0	8	0	0	8
0	8	0	0	8
0	81	1	6	88

0	4	0	0	4
0	10	0	0	10
0	7	0	0	7
0	9	0	0	9
0	11	0	0	11
0	9	0	0	9
0	12	0	0	12
0	5	0	0	5
0	67	0	0	67



## INTERSECTION TURNING MOVEMENT COUNTS

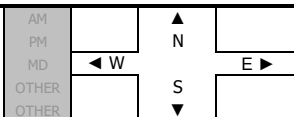
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
**NORTH & SOUTH:** Central  
**EAST & WEST:** Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 6  
**CONTROL:** SIGNAL

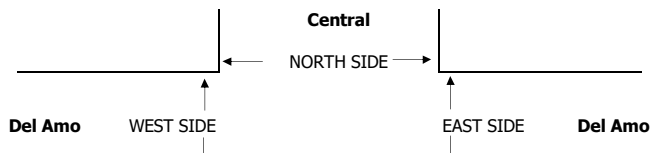
NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Central			Central			Del Amo			Del Amo				
LANES:	NL X	NT X	NR X	SL 2	ST X	SR 2	EL 1	ET 2	ER X	WL X	WT 2	WR 0		
<b>MD</b>	11:00 AM	0	0	0	14	0	65	54	87	0	0	148	9	377
	11:15 AM	0	0	0	24	0	61	54	110	0	0	100	16	365
	11:30 AM	0	0	0	18	0	68	38	92	0	0	106	21	343
	11:45 AM	0	0	0	22	0	59	49	115	0	0	105	21	371
	12:00 PM	0	0	0	14	0	62	58	112	0	0	116	11	373
	12:15 PM	0	0	0	11	0	66	70	129	0	0	140	23	439
	12:30 PM	0	0	0	24	0	74	59	158	0	0	135	19	469
	12:45 PM	0	0	0	20	0	54	77	132	0	0	112	21	416
	1:00 PM	0	0	0	27	0	66	75	150	0	0	131	22	471
	1:15 PM	0	0	0	27	0	85	75	114	0	0	125	19	445
	1:30 PM	0	0	0	29	0	54	68	134	0	0	115	19	419
	1:45 PM	0	0	0	28	0	73	86	146	0	0	137	28	498
	VOLUMES	0	0	0	258	0	787	763	1,479	0	0	1,470	229	5,075
	APPROACH %	0%	0%	0%	23%	0%	70%	34%	66%	0%	0%	86%	13%	
APP/DEPART	0	/	1,078	1,131	/	0	2,243	/	1,739	1,701	/	2,258	0	
BEGIN PEAK HR	1:00 PM													
VOLUMES	0	0	0	111	0	278	304	544	0	0	508	88	1,857	
APPROACH %	0%	0%	0%	27%	0%	67%	36%	64%	0%	0%	85%	15%		
PEAK HR FACTOR	0.000			0.896			0.915			0.903			0.921	
APP/DEPART	0	/	415	412	/	0	849	/	655	596	/	787	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	7
0	7	0	0	7
0	7	0	0	7
0	13	0	0	13
0	11	0	1	12
0	7	0	0	7
0	10	0	1	11
0	2	0	0	2
0	6	0	0	6
0	8	1	0	9
0	3	0	0	3
0	6	0	0	6
0	6	0	0	6
0	86	1	2	89



# INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

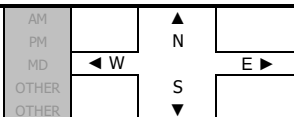
**DATE:**  
Tue, Oct 12, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Carson Plaza

**PROJECT #:** SC3114  
**LOCATION #:** 7  
**CONTROL:** STOP E/W

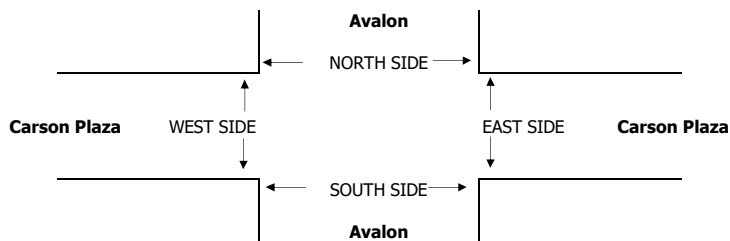
**NOTES:**

Queue NB/SB MD/PM



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	Avalon			Avalon			Carson Plaza - Driveway A			Carson Plaza - Driveway A				NB	SB	EB	WB	TTL	
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR							
<b>MD</b>	11:00 AM	0	238	6	0	206	5	0	0	2	0	0	6	463	0	0	0	0	0
	11:15 AM	0	214	9	0	205	4	0	0	7	0	0	10	449	0	0	0	0	0
	11:30 AM	0	219	4	0	234	5	0	0	4	0	0	8	474	0	0	0	0	0
	11:45 AM	0	223	2	0	227	5	0	0	0	0	0	8	465	0	0	0	0	0
	12:00 PM	0	249	5	0	259	5	0	0	8	0	0	11	537	0	0	0	0	0
	12:15 PM	0	280	5	0	261	1	0	0	3	0	0	8	558	0	0	0	0	0
	12:30 PM	0	273	6	0	244	0	0	0	10	0	0	10	543	0	0	0	0	0
	12:45 PM	0	277	4	0	222	9	0	0	6	0	0	17	535	0	0	0	0	0
	1:00 PM	0	239	1	0	244	4	0	0	2	0	0	14	504	0	0	0	0	0
	1:15 PM	0	265	4	0	233	2	0	0	6	0	0	7	517	0	0	0	0	0
	1:30 PM	0	253	0	0	223	3	0	0	1	0	0	5	485	0	0	0	0	0
	1:45 PM	0	244	4	0	233	3	0	0	2	0	0	10	496	0	0	0	0	0
	VOLUMES	0	2,974	50	0	2,791	46	0	0	51	0	0	114	6,026	0	0	0	0	0
APPROACH %	0%	98%	2%	0%	98%	2%	0%	0%	100%	0%	0%	100%							
APP/DEPART	3,024	/	3,088	2,837	/	2,842	51	/	50	114	/	46	0						
BEGIN PEAK HR	12:00 PM																		
VOLUMES	0	1,079	20	0	986	15	0	0	27	0	0	46	2,173						
APPROACH %	0%	98%	2%	0%	99%	1%	0%	0%	100%	0%	0%	100%							
PEAK HR FACTOR	0.964			0.948			0.675			0.676			0.974						
APP/DEPART	1,099	/	1,125	1,001	/	1,013	27	/	20	46	/	15	0						
<b>PM</b>	4:00 PM	0	309	3	0	300	4	0	0	3	0	0	4	623	0	0	0	0	0
	4:15 PM	0	276	1	0	324	2	0	0	5	0	0	1	609	0	0	0	0	0
	4:30 PM	0	282	1	0	351	3	0	0	4	0	0	1	642	0	0	0	0	0
	4:45 PM	0	281	6	0	318	4	0	0	6	0	0	6	621	0	0	0	0	0
	5:00 PM	0	308	3	0	343	4	0	0	0	0	0	3	661	0	0	0	0	0
	5:15 PM	0	308	1	0	338	2	0	0	3	0	0	3	655	0	0	0	0	0
	5:30 PM	0	279	4	0	307	2	0	0	4	0	0	3	599	0	0	0	0	0
	5:45 PM	0	306	2	0	298	3	0	0	1	0	0	4	614	0	0	0	0	0
	VOLUMES	0	2,349	21	0	2,579	24	0	0	26	0	0	25	5,024					
	APPROACH %	0%	99%	1%	0%	99%	1%	0%	0%	100%	0%	0%	100%						
	APP/DEPART	2,370	/	2,374	2,603	/	2,605	26	/	21	25	/	24	0					
	BEGIN PEAK HR	4:30 PM																	
	VOLUMES	0	1,179	11	0	1,350	13	0	0	13	0	0	13	2,579					
APPROACH %	0%	99%	1%	0%	99%	1%	0%	0%	100%	0%	0%	100%							
PEAK HR FACTOR	0.957			0.963			0.542			0.542			0.975						
APP/DEPART	1,190	/	1,192	1,363	/	1,363	13	/	11	13	/	13	0						





## INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Avalon  
EAST & WEST: Carson Plaza

**PROJECT #:** SC3114  
**LOCATION #:** 7  
**CONTROL:** STOP E/W

**NOTES:**

Queue NB

AM	▲	N
PM	▲	N
MD	◀	W
OTHER	▶	E
OTHER	▼	S

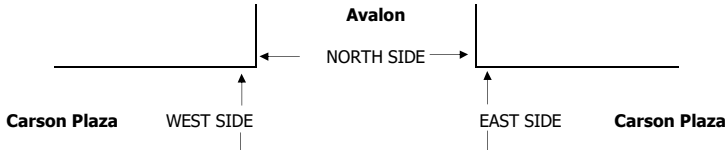
Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Avalon			Avalon			Carson Plaza - Driveway A			Carson Plaza - Driveway A			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	3	0	X	3	0	X	X	0	X	X	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

MD	11:00 AM	0	213	8	0	216	1	0	0	6	0	0	8	452
	11:15 AM	0	236	2	0	213	6	0	0	2	0	0	14	473
	11:30 AM	0	256	1	0	248	1	0	0	0	0	0	5	511
	11:45 AM	0	259	4	0	261	3	0	0	3	0	0	10	540
	12:00 PM	0	233	6	0	249	1	0	0	3	0	0	9	501
	12:15 PM	0	245	8	0	303	4	0	0	2	0	0	6	568
	12:30 PM	0	279	2	0	261	2	0	0	0	0	0	7	551
	12:45 PM	0	261	2	0	263	2	0	0	6	0	0	9	543
	1:00 PM	0	234	4	0	271	5	0	0	6	0	0	6	526
	1:15 PM	0	280	5	0	264	5	0	0	6	0	0	8	568
	1:30 PM	0	275	5	0	224	3	0	0	1	0	0	6	514
	1:45 PM	0	279	6	0	251	2	0	0	3	0	0	14	555
	VOLUMES	0	3,050	53	0	3,024	35	0	0	38	0	0	102	6,302
	APPROACH %	0%	98%	2%	0%	99%	1%	0%	0%	100%	0%	0%	100%	
APP/DEPART	3,103	/	3,152	3,059	/	3,062	38	/	53	102	/	35	0	
BEGIN PEAK HR	12:30 PM													
VOLUMES	0	1,054	13	0	1,059	14	0	0	18	0	0	30	2,188	
APPROACH %	0%	99%	1%	0%	99%	1%	0%	0%	100%	0%	0%	100%		
PEAK HR FACTOR	0.936			0.874			0.750			0.833			0.963	
APP/DEPART	1,067	/	1,084	1,073	/	1,077	18	/	13	30	/	14	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



# INTERSECTION TURNING MOVEMENT COUNTS

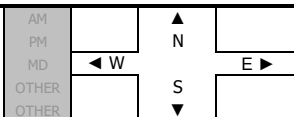
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:**  
NORTH & SOUTH: Carson  
EAST & WEST: Driveway B  
Del Amo

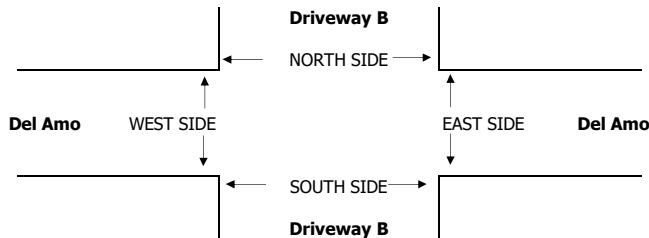
**PROJECT #:** SC3114  
**LOCATION #:** 8  
**CONTROL:** STOP N/S

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	Driveway B			Driveway B			Del Amo			Del Amo				NB	SB	EB	WB	TTL
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR						
<b>MD</b>	11:00 AM	0	0	9	0	0	1	0	138	11	0	150	0	309	0	0	0	0
	11:15 AM	0	0	19	0	0	0	0	133	10	0	161	1	324	0	0	0	0
	11:30 AM	0	0	12	0	0	1	0	156	8	0	167	1	345	0	0	0	0
	11:45 AM	0	0	10	0	0	0	0	168	17	0	185	0	380	0	0	0	0
	12:00 PM	0	0	29	0	0	1	0	157	21	0	182	1	391	0	0	0	0
	12:15 PM	0	0	23	0	0	0	0	194	24	0	189	0	430	0	0	0	0
	12:30 PM	0	0	19	0	0	0	0	185	21	0	179	0	404	0	0	0	0
	12:45 PM	0	0	20	0	0	0	0	182	15	0	178	1	396	0	0	0	0
	1:00 PM	0	0	13	0	0	1	0	180	8	0	165	1	368	0	0	0	0
	1:15 PM	0	0	17	0	0	1	0	148	13	0	164	0	343	0	0	0	0
	1:30 PM	0	0	13	0	0	0	0	156	12	0	197	2	380	0	0	0	0
	1:45 PM	0	0	12	0	0	1	0	198	21	0	165	0	397	0	0	0	0
	VOLUMES	0	0	196	0	0	6	0	1,995	181	0	2,082	7	4,467	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	100%	0%	92%	8%	0%	100%	0%		0	0	0	0
APP/DEPART	196	/	7	6	/	181	2,176	/	2,191	2,089	/	2,088	0					
BEGIN PEAK HR	12:00 PM																	
VOLUMES	0	0	91	0	0	1	0	718	81	0	728	2	1,621					
APPROACH %	0%	0%	100%	0%	0%	100%	0%	90%	10%	0%	100%	0%						
PEAK HR FACTOR	0.784			0.250			0.916			0.966			0.942					
APP/DEPART	91	/	2	1	/	81	799	/	809	730	/	729	0					
<b>PM</b>	4:00 PM	0	0	16	0	0	0	0	313	14	0	224	1	568	0	0	0	0
	4:15 PM	0	0	10	0	0	1	0	325	13	0	175	0	524	0	0	0	0
	4:30 PM	0	0	21	0	0	1	0	316	15	0	220	1	574	0	0	0	0
	4:45 PM	0	0	15	0	0	0	0	336	16	0	185	0	552	0	0	0	0
	5:00 PM	0	0	13	0	0	1	0	347	14	0	226	2	603	0	0	0	0
	5:15 PM	0	0	15	0	0	0	0	341	18	0	198	0	572	0	0	0	0
	5:30 PM	0	0	19	0	0	0	0	336	17	0	204	1	577	0	0	0	0
	5:45 PM	0	0	25	0	0	1	0	350	17	0	185	0	578	0	0	0	0
	VOLUMES	0	0	134	0	0	4	0	2,664	124	0	1,617	5	4,548				
	APPROACH %	0%	0%	100%	0%	0%	100%	0%	96%	4%	0%	100%	0%		0	0	0	0
	APP/DEPART	134	/	5	4	/	124	2,788	/	2,798	1,622	/	1,621	0				
	BEGIN PEAK HR	5:00 PM																
	VOLUMES	0	0	72	0	0	2	0	1,374	66	0	813	3	2,330				
	APPROACH %	0%	0%	100%	0%	0%	100%	0%	95%	5%	0%	100%	0%		0	0	0	0
PEAK HR FACTOR	0.720			0.500			0.981			0.895			0.966					
APP/DEPART	72	/	3	2	/	66	1,440	/	1,446	816	/	815	0					



## INTERSECTION TURNING MOVEMENT COUNTS

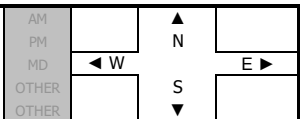
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Driveway B  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 8  
**CONTROL:** STOP N/S

NOTES:



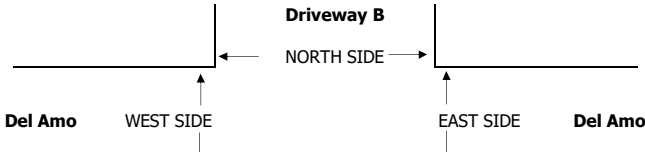
Add U-Turns to Left Turns

LANES:	NORTHBOUND <small>Driveway B</small>			SOUTHBOUND <small>Driveway B</small>			EASTBOUND <small>Del Amo</small>			WESTBOUND <small>Del Amo</small>			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	0	X	X	0	X	2	0	X	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

<b>MD</b>	11:00 AM	0	0	9	0	0	0	0	130	8	0	168	0	315
	11:15 AM	0	0	7	0	0	0	0	142	10	0	137	1	297
	11:30 AM	0	0	8	0	0	1	0	155	10	0	146	0	320
	11:45 AM	0	0	13	0	0	0	0	145	13	0	146	0	317
	12:00 PM	0	0	15	0	0	1	0	171	9	0	154	2	352
	12:15 PM	0	0	10	0	0	0	0	141	22	0	152	1	326
	12:30 PM	0	0	10	0	0	1	0	182	13	0	181	0	387
	12:45 PM	0	0	20	0	0	1	0	179	14	0	147	0	361
	1:00 PM	0	0	16	0	0	0	0	161	16	0	174	1	368
	1:15 PM	0	0	11	0	0	1	0	160	6	0	165	0	343
	1:30 PM	0	0	14	0	0	0	0	175	15	0	157	1	362
	1:45 PM	0	0	9	0	0	0	0	169	5	0	162	0	345
	VOLUMES	0	0	142	0	0	5	0	1,910	141	0	1,889	6	4,093
APPROACH %	0%	0%	100%	0%	0%	100%	0%	93%	7%	0%	100%	0%		
APP/DEPART	142	/	6	5	/	141	2,051	/	2,052	1,895	/	1,894	0	
BEGIN PEAK HR	12:30 PM													
VOLUMES	0	0	57	0	0	3	0	682	49	0	667	1	1,459	
APPROACH %	0%	0%	100%	0%	0%	100%	0%	93%	7%	0%	100%	0%		
PEAK HR FACTOR	0.713			0.750			0.937			0.923			0.943	
APP/DEPART	57	/	1	3	/	49	731	/	739	668	/	670	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0





# INTERSECTION TURNING MOVEMENT COUNTS

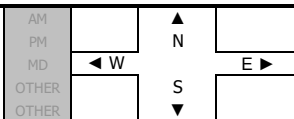
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Tue, Oct 12, 21

**LOCATION:**  
NORTH & SOUTH: Carson  
EAST & WEST: Driveway C  
Del Amo

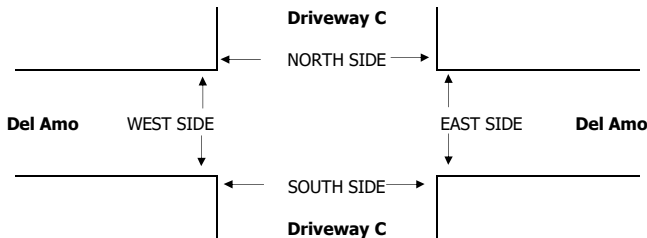
**PROJECT #:** SC3114  
**LOCATION #:** 9  
**CONTROL:** STOP N

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS						
	Driveway C			Driveway C			Del Amo			Del Amo				NB	SB	EB	WB	TTL		
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		0	0	0	0			
<b>MD</b>	11:00 AM	7	0	9	0	0	0	0	136	10	25	142	0	329	0	0	1	0	1	
	11:15 AM	9	0	15	0	0	0	0	138	12	12	151	0	337	0	0	2	0	2	
	11:30 AM	2	0	14	0	0	0	0	152	15	29	166	0	378	0	0	0	0	0	
	11:45 AM	6	0	17	0	0	0	0	162	14	25	177	0	401	0	0	2	0	2	
	12:00 PM	4	0	20	0	0	0	0	173	13	35	180	0	425	1	0	0	0	1	
	12:15 PM	3	0	14	0	0	0	0	203	9	31	182	0	442	0	0	4	0	4	
	12:30 PM	2	0	22	0	0	0	0	184	18	28	175	0	429	0	0	2	0	2	
	12:45 PM	6	0	25	0	0	0	0	185	13	19	169	0	417	0	0	4	1	5	
	1:00 PM	6	0	33	0	0	0	0	175	16	26	157	0	413	0	0	2	0	2	
	1:15 PM	3	0	14	0	0	0	0	155	5	17	156	0	350	0	0	5	0	5	
	1:30 PM	4	0	18	0	0	0	0	156	11	16	195	0	400	0	0	2	0	2	
	1:45 PM	3	0	19	0	0	0	0	193	14	10	159	0	398	0	0	3	0	3	
	VOLUMES	55	0	220	0	0	0	0	2,012	150	273	2,009	0	4,748	1	0	27	1	29	
	APPROACH %	20%	0%	80%	0%	0%	0%	0%	92%	7%	12%	88%	0%							
APP/DEPART	276	/	0	0	/	424	2,189	/	2,233	2,283	/	2,091	0							
BEGIN PEAK HR	12:00 PM																			
VOLUMES	15	0	81	0	0	0	0	745	53	113	706	0	1,725							
APPROACH %	15%	0%	84%	0%	0%	0%	0%	92%	7%	14%	86%	0%								
PEAK HR FACTOR	0.782			0.000			0.935			0.953			0.967							
APP/DEPART	97	/	0	0	/	167	808	/	827	820	/	731	0							
<b>PM</b>	4:00 PM	5	0	20	0	0	0	0	315	14	14	220	0	588	0	0	0	0	0	
	4:15 PM	4	0	20	0	0	0	0	322	11	14	172	0	543	1	0	0	0	1	
	4:30 PM	2	0	19	0	0	0	0	323	14	20	219	0	597	0	0	0	0	0	
	4:45 PM	3	0	27	0	0	0	0	337	11	21	179	0	578	0	0	3	0	3	
	5:00 PM	3	0	18	0	0	0	0	346	12	26	223	0	628	0	0	2	0	2	
	5:15 PM	2	0	23	0	0	0	0	346	10	27	196	0	604	0	0	0	0	0	
	5:30 PM	3	0	18	0	0	0	0	344	9	28	202	0	604	0	0	0	0	0	
	5:45 PM	6	0	20	0	0	0	0	357	14	23	177	0	597	0	0	4	0	4	
	VOLUMES	28	0	165	0	0	0	0	2,690	95	173	1,588	0	4,749						
	APPROACH %	14%	0%	85%	0%	0%	0%	0%	96%	3%	10%	90%	0%							
	APP/DEPART	194	/	0	0	/	269	2,794	/	2,855	1,761	/	1,625	0						
	BEGIN PEAK HR	5:00 PM																		
	VOLUMES	14	0	79	0	0	0	0	1,393	45	104	798	0	2,439						
	APPROACH %	15%	0%	85%	0%	0%	0%	0%	96%	3%	12%	88%	0%							
PEAK HR FACTOR	0.894			0.000			0.963			0.906			0.968							
APP/DEPART	93	/	0	0	/	149	1,444	/	1,472	902	/	818	0							



## INTERSECTION TURNING MOVEMENT COUNTS

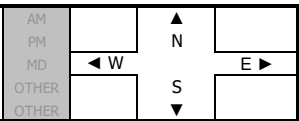
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Sat, Oct 9, 21

**LOCATION:** Carson  
NORTH & SOUTH: Driveway C  
EAST & WEST: Del Amo

**PROJECT #:** SC3114  
**LOCATION #:** 9  
**CONTROL:** STOP N

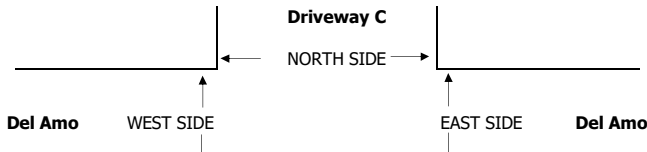
NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	
	Driveway C			Driveway C			Del Amo			Del Amo				
LANES:	NL 1	NT X	NR 1	SL X	ST X	SR X	EL X	ET 2	ER 0	WL 1	WT 2	WR X		
<b>MD</b>	11:00 AM	4	0	13	0	0	0	0	128	9	20	164	0	338
	11:15 AM	4	0	16	0	0	0	0	136	12	21	135	0	324
	11:30 AM	2	0	6	0	0	0	0	146	14	18	141	0	327
	11:45 AM	5	0	16	0	0	0	0	144	13	21	140	0	339
	12:00 PM	3	0	15	0	0	0	0	173	12	13	152	0	368
	12:15 PM	2	0	22	0	0	0	0	138	11	26	149	0	348
	12:30 PM	0	0	19	0	0	0	0	179	11	20	179	0	408
	12:45 PM	3	0	12	0	0	0	0	184	12	19	142	0	372
	1:00 PM	3	0	23	0	0	0	0	164	10	17	169	0	386
	1:15 PM	2	0	17	0	0	0	0	156	10	29	158	0	372
	1:30 PM	1	0	17	0	0	0	0	174	10	10	152	0	364
	1:45 PM	3	0	14	0	0	0	0	166	10	29	159	0	381
	VOLUMES	32	0	190	0	0	0	0	1,888	134	243	1,840	0	4,357
APPROACH %	14%	0%	85%	0%	0%	0%	0%	92%	7%	12%	88%	0%		
APP/DEPART	224	/	0	0	/	379	2,048	/	2,080	2,085	/	1,898	0	
BEGIN PEAK HR	12:30 PM													
VOLUMES	8	0	71	0	0	0	0	683	43	85	648	0	1,552	
APPROACH %	10%	0%	89%	0%	0%	0%	0%	92%	6%	12%	88%	0%		
PEAK HR FACTOR	0.741			0.000			0.928			0.921			0.946	
APP/DEPART	80	/	0	0	/	129	739	/	754	733	/	669	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	1	0	1
0	0	3	1	4
0	0	1	0	1
0	0	1	0	1
0	0	2	1	3
0	0	2	0	2
0	0	3	0	3
1	0	3	0	4
0	0	5	0	5
1	0	5	0	6
0	0	0	0	0
2	0	26	2	30



## **APPENDIX D**

### **EXISTING VOLUME ADJUSTMENT FACTOR CALCULATIONS**



### Existing 2021 Volume Adjustment Factor

	Intersection	Peak Hour	Historical Count (Pre-Pandemic)		Existing Count (2021)		Ambient Growth Factor		Historical Volume With Ambient Growth 2021	Count Adjustment Factor
			Date	Volume	Date	Volume	Years	0.5% Annual Rate		
2	Avalon / Del Amo	PM	4/5/17	5,043	10/12/21	4,747	4	1.020	5,145	8.4%
6	Central / Del Amo	PM	4/5/17	3,226	10/12/21	3,255	4	1.020	3,291	1.1%
<b>Average</b>										<b>4.8%</b>

Notes:

1. Ambient growth factor based on Los Angeles County Congestion Management Program for Regional Statistical Area 19.

## INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

**DATE:**  
Wed, Apr 5, 17

**LOCATION:** CSU Dominguez Hills  
NORTH & SOUTH: Avalon  
EAST & WEST: Del Amo

**PROJECT #:** SC1281  
**LOCATION #:** 24  
**CONTROL:** SIGNAL

NOTES:	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼	
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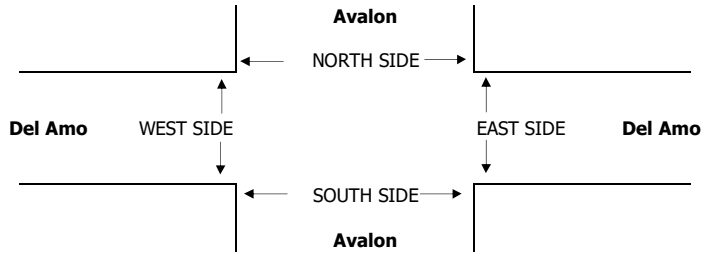
Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	2	3	0	1	2	1	1	2	1	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
<b>AM</b>													
7:00 AM	49	100	18	17	90	41	28	57	3	24	240	24	691
7:15 AM	55	124	21	22	113	75	36	83	10	25	295	22	881
7:30 AM	56	157	19	21	167	68	47	107	9	38	243	20	952
7:45 AM	64	230	33	31	176	69	50	164	23	28	210	27	1,105
8:00 AM	42	209	32	31	123	54	73	122	18	35	192	29	960
8:15 AM	29	219	23	33	118	65	60	144	12	47	182	31	963
8:30 AM	30	164	29	24	121	59	51	99	22	44	222	23	888
8:45 AM	28	128	20	42	105	48	48	89	11	41	154	25	739
VOLUMES	353	1,331	195	221	1,013	479	393	865	108	282	1,738	201	7,410
APPROACH %	18%	68%	10%	12%	56%	26%	28%	63%	8%	13%	77%	9%	
APP/DEPART	1,953	/	2,034	1,822	/	1,477	1,383	/	1,312	2,252	/	2,587	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	191	815	107	116	584	256	230	537	62	148	827	107	4,096
APPROACH %	17%	71%	9%	11%	58%	25%	28%	64%	7%	14%	76%	10%	
PEAK HR FACTOR	0.851			0.865			0.876			0.906			0.901
APP/DEPART	1,154	/	1,210	1,014	/	835	834	/	772	1,094	/	1,279	0
<b>PM</b>													
4:00 PM	37	226	44	52	214	58	59	186	57	52	107	31	1,123
4:15 PM	34	191	39	63	217	51	50	225	47	50	105	36	1,108
4:30 PM	35	207	37	62	185	57	46	260	54	47	158	47	1,195
4:45 PM	32	219	47	58	246	59	46	236	46	40	149	29	1,207
5:00 PM	37	209	43	46	251	79	38	229	63	46	133	43	1,217
5:15 PM	33	239	45	61	239	60	40	232	59	51	170	37	1,266
5:30 PM	40	208	40	54	235	60	44	203	61	59	160	24	1,188
5:45 PM	31	239	40	55	205	63	45	214	53	42	96	23	1,106
VOLUMES	279	1,738	335	451	1,792	487	368	1,785	440	387	1,078	270	9,721
APPROACH %	12%	72%	14%	16%	62%	17%	14%	69%	17%	21%	59%	15%	
APP/DEPART	2,408	/	2,540	2,894	/	2,675	2,602	/	2,653	1,817	/	1,853	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	137	874	172	227	921	255	170	957	222	184	610	156	5,043
APPROACH %	11%	72%	14%	15%	62%	17%	13%	71%	16%	19%	62%	16%	
PEAK HR FACTOR	0.930			0.944			0.935			0.923			0.964
APP/DEPART	1,216	/	1,284	1,487	/	1,360	1,354	/	1,392	986	/	1,007	0

8	7	4	6	25
4	11	2	2	19
13	13	1	1	28
12	17	1	2	32
9	18	1	2	30
7	10	2	7	26
11	18	3	8	40
10	15	3	3	31
74	109	17	31	231
191	116	230	148	
232	174	235	160	
41	58	5	12	
9	21	0	10	40
6	18	4	8	36
8	21	2	6	37
8	24	0	7	39
7	18	1	14	40
10	21	2	9	42
7	18	0	13	38
1	23	0	15	39
56	164	9	82	311
137	227	170	184	
170	311	175	220	
33	84	5	36	



## INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

<b>DATE:</b> Wed, Apr 5, 17	LOCATION: NORTH & SOUTH: EAST & WEST:	CSU Dominguez Hills Central Del Amo	PROJECT #: LOCATION #: CONTROL:	SC1281 29 SIGNAL
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NOTES:	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼	
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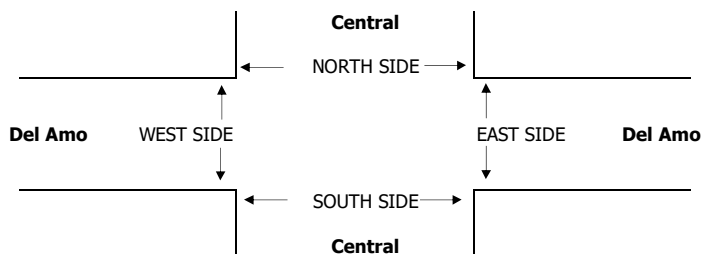
Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	2	X	2	1	2	X	X	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
<b>AM</b>													
7:00 AM	0	0	0	30	0	55	49	97	0	0	234	26	491
7:15 AM	0	0	0	30	0	68	42	106	0	0	293	39	578
7:30 AM	0	0	0	46	0	82	72	108	0	0	255	69	632
7:45 AM	0	0	0	67	0	75	82	165	0	0	200	62	651
8:00 AM	0	0	0	46	0	49	89	131	0	0	222	59	596
8:15 AM	0	0	0	42	0	50	78	128	0	0	232	56	586
8:30 AM	0	0	0	37	0	64	46	128	0	0	260	40	575
8:45 AM	0	0	0	23	0	65	39	110	0	0	175	23	435
VOLUMES	0	0	0	321	0	508	497	973	0	0	1,871	374	4,612
APPROACH %	0%	0%	0%	36%	0%	57%	34%	66%	0%	0%	83%	17%	
APP/DEPART	0	/	938	896	/	0	1,470	/	1,295	2,246	/	2,379	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	0	0	0	201	0	256	321	532	0	0	909	246	2,503
APPROACH %	0%	0%	0%	41%	0%	52%	38%	62%	0%	0%	79%	21%	
PEAK HR FACTOR	0.000			0.820									
APP/DEPART	0	/	605	495	/	0	853	/	733	1,155	/	1,165	0
<b>PM</b>													
4:00 PM	0	0	0	78	0	81	88	256	0	0	189	46	738
4:15 PM	0	0	0	80	0	85	89	287	0	0	165	40	746
4:30 PM	0	0	0	57	0	100	93	271	0	0	228	65	814
4:45 PM	0	0	0	73	0	87	97	288	0	0	177	50	772
5:00 PM	0	0	0	87	0	93	91	277	0	0	223	52	823
5:15 PM	0	0	0	69	0	101	96	254	0	0	220	42	782
5:30 PM	0	0	0	62	0	98	83	278	0	0	188	38	747
5:45 PM	0	0	0	74	0	82	80	274	0	0	148	34	692
VOLUMES	0	0	0	580	0	727	717	2,185	0	0	1,538	367	6,196
APPROACH %	0%	0%	0%	42%	0%	52%	25%	75%	0%	0%	81%	19%	
APP/DEPART	0	/	1,166	1,389	/	0	2,902	/	2,765	1,905	/	2,265	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	0	0	0	286	0	381	377	1,090	0	0	848	209	3,226
APPROACH %	0%	0%	0%	41%	0%	54%	26%	74%	0%	0%	80%	20%	
PEAK HR FACTOR	0.000			0.924									
APP/DEPART	0	/	621	702	/	0	1,467	/	1,376	1,057	/	1,229	0

0	11	0	1	12
0	8	0	0	8
0	2	0	0	2
0	9	0	0	9
0	15	0	0	15
0	12	0	0	12
0	5	0	0	5
0	5	0	0	5
0	67	0	1	68
0	201	321	0	
0	239	321	0	
0	38	0	0	
0	4	0	0	4
0	15	0	0	15
0	9	0	0	9
0	6	0	0	6
0	10	0	0	10
0	10	0	0	10
0	15	0	0	15
0	13	0	0	13
0	82	0	0	82
0	286	377	0	
0	321	377	0	
0	35	0	0	



**APPENDIX E**  
**INTERSECTION LEVEL OF SERVICE WORKSHEETS**



**EXISTING**

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.300

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	32	953	129	3	32	810	96	41
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	999	135	3	34	849	101	43
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	261	35	1	9	222	26	11
Total Analysis Volume [veh/h]	35	1043	141	3	35	886	105	45
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	66	0	0	11	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	94	94	5	94	9	9
g / C, Green / Cycle	0.04	0.78	0.78	0.04	0.78	0.08	0.08
(v / s)_j Volume / Saturation Flow Rate	0.02	0.20	0.09	0.02	0.17	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	72	3973	1240	75	3981	139	124
d1, Uniform Delay [s]	54.75	0.00	0.00	54.60	0.00	54.19	52.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.00	0.16	0.19	5.24	0.13	8.05	1.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.49	0.26	0.11	0.51	0.22	0.76	0.36
d, Delay for Lane Group [s/veh]	59.75	0.16	0.19	59.84	0.13	62.25	54.26
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.09	0.06	0.06	1.19	0.05	3.45	1.36
50th-Percentile Queue Length [ft/ln]	27.34	1.48	1.60	29.65	1.19	86.14	34.06
95th-Percentile Queue Length [veh/ln]	1.97	0.11	0.12	2.14	0.09	6.20	2.45
95th-Percentile Queue Length [ft/ln]	49.22	2.67	2.89	53.38	2.15	155.06	61.30



**Movement, Approach, & Intersection Results**

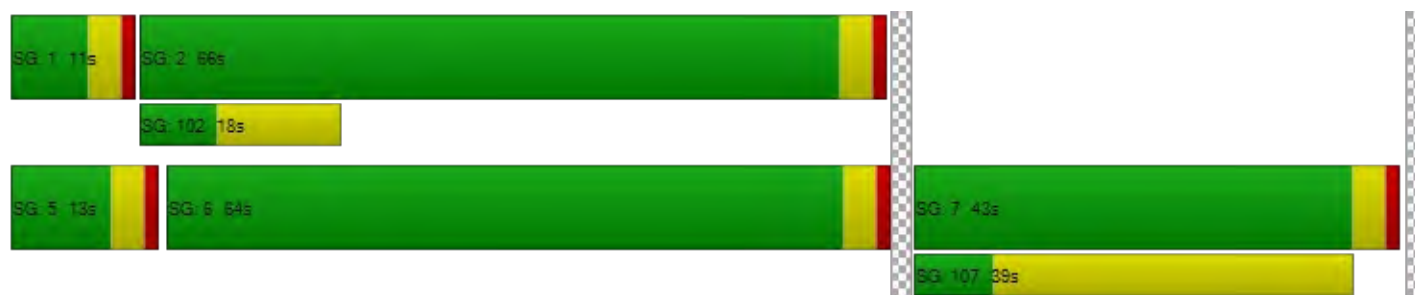
d_M, Delay for Movement [s/veh]	59.75	0.16	0.19	59.84	59.84	0.13	62.25	54.26
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.88			2.58			59.85	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	5.95							
Intersection LOS	A							
Intersection V/C	0.300							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.981	2.042
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.803	4.621	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.565

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	35	147	772	180	72	180	565	117	15	168	389	165	31	230	357	115
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	154	809	189	75	189	592	123	16	176	408	173	32	241	374	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	10	40	212	49	20	49	155	32	4	46	107	45	8	63	98	32
Total Analysis Volume [veh/h]	39	161	847	198	79	198	620	129	17	184	427	181	34	252	392	127
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	11.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	27	45	0	0	18	36	0	0	25	28	0	0	29	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	54	54	12	50	50	16	17	17	21	23	23
g / C, Green / Cycle	0.13	0.45	0.45	0.10	0.42	0.42	0.13	0.14	0.14	0.18	0.19	0.19
(v / s)_j Volume / Saturation Flow Rate	0.11	0.17	0.12	0.08	0.12	0.08	0.11	0.12	0.11	0.16	0.11	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	227	2293	716	333	2133	666	230	511	228	314	680	303
d1, Uniform Delay [s]	46.33	9.09	8.82	49.44	11.37	11.05	51.27	50.00	49.66	48.46	44.14	42.69
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.19	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.45	0.46	0.96	5.42	0.35	0.65	9.85	3.67	6.12	15.63	0.78	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.37	0.28	0.83	0.29	0.19	0.87	0.83	0.79	0.91	0.58	0.42
d, Delay for Lane Group [s/veh]	56.78	9.55	9.78	54.86	11.72	11.70	61.12	53.67	55.77	64.09	44.92	43.61
Lane Group LOS	E	A	A	D	B	B	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.88	2.20	1.64	4.01	1.93	1.26	6.40	6.32	5.49	9.50	5.23	3.31
50th-Percentile Queue Length [ft/ln]	146.91	55.03	40.92	100.17	48.21	31.39	159.99	158.05	137.29	237.58	130.73	82.72
95th-Percentile Queue Length [veh/ln]	9.85	3.96	2.95	7.21	3.47	2.26	10.55	10.45	9.34	14.56	8.98	5.96
95th-Percentile Queue Length [ft/ln]	246.30	99.06	73.65	180.30	86.79	56.51	263.71	261.14	233.38	363.97	224.49	148.89



**Movement, Approach, & Intersection Results**

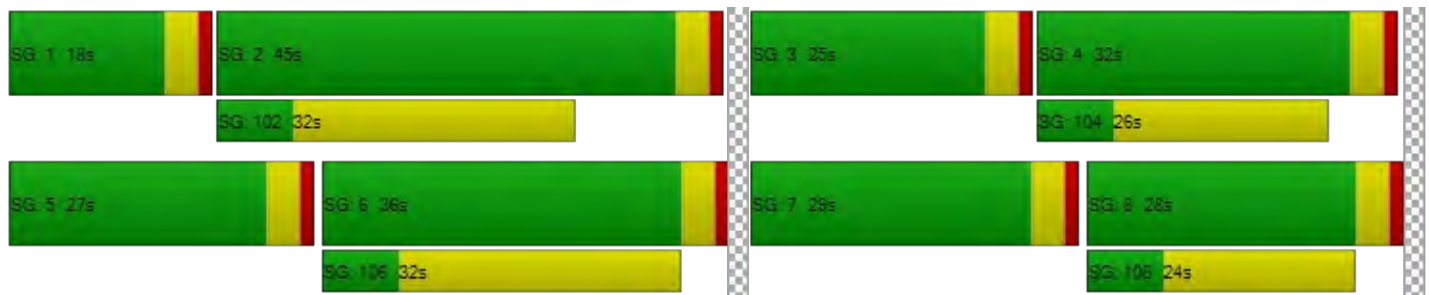
d_M, Delay for Movement [s/veh]	56.7	56.7	9.55	9.78	54.8	54.8	11.7	11.7	61.1	61.1	53.6	55.7	64.0	64.0	44.9	43.6
Movement LOS	E	E	A	A	D	D	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	17.18				23.36				55.99				51.53			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	34.01															
Intersection LOS	C															
Intersection V/C	0.565															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.066				3.229				3.012				2.948			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	683				533				400				467			
d_b, Bicycle Delay [s]	26.00				32.27				38.40				35.27			
I_b,int, Bicycle LOS Score for Intersection	2.223				2.015				2.075				2.016			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	116	875	124	85	149	817	26	47	17	87	0	103	15	150
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	31	235	33	23	40	220	7	13	5	23	0	28	4	40
Total Analysis Volume [veh/h]	33	125	941	133	91	160	878	28	51	18	94	0	111	16	161
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	73.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	18	45	0	0	32	59	0	0	43	0	0	0	43	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	59	59	19	65	65	30	30	30	30
g / C, Green / Cycle	0.10	0.49	0.49	0.16	0.54	0.54	0.25	0.25	0.25	0.25
(v / s)_j Volume / Saturation Flow Rate	0.09	0.18	0.08	0.14	0.17	0.02	0.18	0.06	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	382	1589	681	1589
c, Capacity [veh/h]	183	2497	779	278	2769	864	149	403	229	403
d1, Uniform Delay [s]	48.89	6.13	5.79	43.49	2.70	2.58	51.40	35.53	40.81	37.20
k, delay calibration	0.11	0.50	0.50	0.13	0.50	0.50	0.13	0.11	0.14	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.29	0.44	0.47	12.19	0.30	0.07	2.70	0.29	2.79	0.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.86	0.38	0.17	0.90	0.32	0.03	0.46	0.23	0.56	0.40
d, Delay for Lane Group [s/veh]	60.18	6.57	6.26	55.68	3.00	2.65	54.11	35.83	43.60	37.84
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.83	1.78	0.79	7.33	0.84	0.09	2.17	2.25	3.64	4.05
50th-Percentile Queue Length [ft/ln]	120.83	44.53	19.72	183.23	20.99	2.18	54.35	56.29	90.94	101.26
95th-Percentile Queue Length [veh/ln]	8.44	3.21	1.42	11.77	1.51	0.16	3.91	4.05	6.55	7.29
95th-Percentile Queue Length [ft/ln]	210.97	80.16	35.49	294.23	37.77	3.93	97.82	101.33	163.68	182.27



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.1	60.1	6.57	6.26	55.6	55.6	3.00	2.65	54.11	54.11	35.83	43.6	43.6	43.6	37.8	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	13.41				14.42				43.56				40.38			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	18.29															
Intersection LOS	B															
Intersection V/C	0.539															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.313				3.140				2.044				2.274			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	683				917				650				650			
d_b, Bicycle Delay [s]	26.00				17.60				27.34				27.34			
I_b,int, Bicycle LOS Score for Intersection	2.219				2.108				1.829				1.852			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	14	15	1027	409	19	140	872	33	20	17	39	11	542	20	161
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	16	1076	429	20	147	914	35	21	18	41	12	568	21	169
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9750	0.9750	0.9750	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	4	276	110	5	38	234	9	5	5	11	3	146	5	43
Total Analysis Volume [veh/h]	15	16	1104	440	21	151	937	36	22	18	42	12	583	22	173
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	11.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	54	0	0	22	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	61	61	13	69	69	7	7	24	24	24
g / C, Green / Cycle	0.04	0.50	0.50	0.11	0.58	0.58	0.05	0.05	0.20	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.02	0.22	0.28	0.10	0.18	0.18	0.02	0.03	0.17	0.17	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1835	1820	1589	1781	1787	1589
c, Capacity [veh/h]	68	2566	801	199	2055	1059	99	87	350	351	313
d1, Uniform Delay [s]	54.97	5.31	5.58	47.95	0.99	0.99	54.83	55.08	46.83	46.81	43.45
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.22	0.22	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.53	2.71	10.62	0.40	0.77	2.60	4.12	13.55	13.38	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.43	0.55	0.86	0.31	0.31	0.40	0.48	0.88	0.88	0.55
d, Delay for Lane Group [s/veh]	59.66	5.84	8.28	58.57	1.39	1.76	57.43	59.19	60.38	60.19	44.98
Lane Group LOS	E	A	A	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	1.83	2.69	5.17	0.43	0.55	1.25	1.34	10.23	10.23	4.77
50th-Percentile Queue Length [ft/ln]	24.45	45.83	67.18	129.27	10.66	13.74	31.30	33.60	255.66	255.77	119.34
95th-Percentile Queue Length [veh/ln]	1.76	3.30	4.84	8.90	0.77	0.99	2.25	2.42	15.47	15.48	8.36
95th-Percentile Queue Length [ft/ln]	44.00	82.50	120.93	222.50	19.18	24.73	56.34	60.49	386.77	386.91	208.92



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	5.84	8.28	58.5	58.5	1.50	1.76	57.43	57.43	59.19	60.3	60.2	60.1	44.9	
Movement LOS	E	E	A	A	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	7.58				10.08				58.33				56.93			
Approach LOS	A				B				E				E			
d_I, Intersection Delay [s/veh]	20.39															
Intersection LOS	C															
Intersection V/C	0.614															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.172				1.996				2.486			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	833				1017				117				483			
d_b, Bicycle Delay [s]	20.42				14.50				53.20				34.50			
I_b,int, Bicycle LOS Score for Intersection	2.417				2.106				1.695				2.843			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	0	35	266	181	1	49	253	80	69	461	45	2	154	459	37
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	37	279	190	1	51	265	84	72	483	47	2	161	481	39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.9630	0.9630	0.9630	0.96	0.96	0.96	0.96
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	10	72	49	0	13	69	22	19	125	12	1	42	125	10
Total Analysis Volume [veh/h]	0	38	290	197	1	53	275	87	75	502	49	2	167	499	40
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	13	39	0	0	11	37	0	11	33	0	0	12	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	15	15	5	15	15	6	48	48	11	53	53
g / C, Green / Cycle	0.05	0.15	0.15	0.06	0.16	0.16	0.06	0.51	0.51	0.12	0.56	0.56
(v / s)_j Volume / Saturation Flow Rate	0.02	0.08	0.12	0.03	0.08	0.05	0.04	0.10	0.10	0.09	0.10	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1787	1781	3560	1800
c, Capacity [veh/h]	85	546	244	102	579	258	115	1797	902	208	1983	1003
d1, Uniform Delay [s]	44.07	37.13	38.93	43.62	36.16	35.30	43.48	13.00	13.03	41.03	10.38	10.39
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.60	0.80	6.27	4.23	0.61	0.76	6.18	0.26	0.52	7.52	0.20	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.45	0.53	0.81	0.53	0.48	0.34	0.65	0.20	0.21	0.81	0.18	0.18
d, Delay for Lane Group [s/veh]	47.67	37.93	45.20	47.85	36.77	36.06	49.66	13.26	13.54	48.54	10.58	10.79
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.93	3.07	4.70	1.32	2.85	1.78	1.85	1.99	2.10	4.13	1.66	1.75
50th-Percentile Queue Length [ft/ln]	23.32	76.65	117.62	33.03	71.22	44.60	46.33	49.80	52.43	103.16	41.52	43.83
95th-Percentile Queue Length [veh/ln]	1.68	5.52	8.26	2.38	5.13	3.21	3.34	3.59	3.77	7.43	2.99	3.16
95th-Percentile Queue Length [ft/ln]	41.98	137.96	206.55	59.46	128.19	80.29	83.40	89.65	94.37	185.68	74.74	78.89



**Movement, Approach, & Intersection Results**

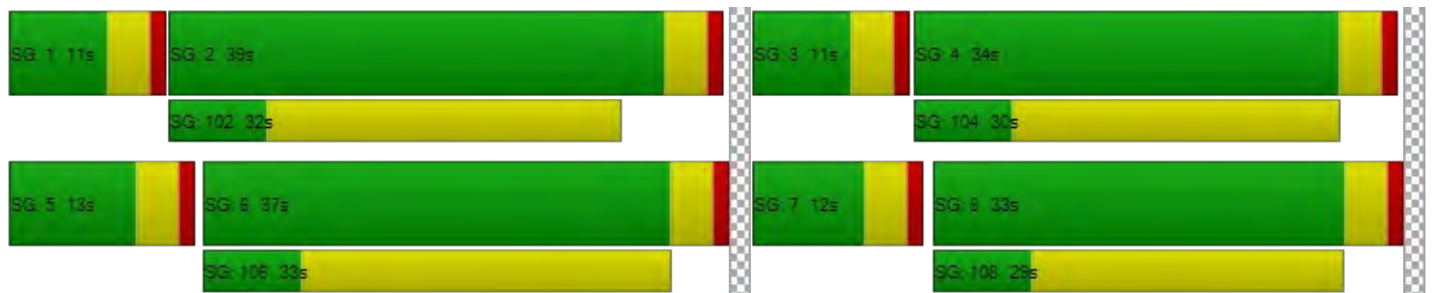
d_M, Delay for Movement [s/veh]	47.6	47.6	37.9	45.2	47.8	47.8	36.7	36.0	49.66	13.34	13.54	48.5	48.5	10.6	10.7	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	B	B	
d_A, Approach Delay [s/veh]	41.37				38.06				17.70				19.69			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	27.51															
Intersection LOS	C															
Intersection V/C	0.386															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.675				2.633				2.857				2.901			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	737				695				611				632			
d_b, Bicycle Delay [s]	18.95				20.23				22.93				22.24			
I_b,int, Bicycle LOS Score for Intersection	1.961				1.859				1.904				1.948			
Bicycle LOS	A				A				A				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇌⇌⇌⇌			⇌⇌		⇌⇌	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	27	109	320	280	578	564	77
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	114	335	293	606	591	81
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	30	89	78	161	157	22
Total Analysis Volume [veh/h]	30	121	356	312	645	629	86
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	15	55	36	36
g / C, Green / Cycle	0.16	0.16	0.20	0.73	0.48	0.48
(v / s)_j Volume / Saturation Flow Rate	0.04	0.13	0.18	0.18	0.18	0.05
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	553	450	362	2612	1698	758
d1, Uniform Delay [s]	27.71	30.34	28.90	3.26	12.48	10.86
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	3.16	6.10	0.23	0.62	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.27	0.79	0.86	0.25	0.37	0.11
d, Delay for Lane Group [s/veh]	27.97	33.50	35.00	3.48	13.10	11.17
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.14	3.09	5.46	0.77	2.86	0.71
50th-Percentile Queue Length [ft/ln]	28.50	77.21	136.60	19.33	71.44	17.73
95th-Percentile Queue Length [veh/ln]	2.05	5.56	9.30	1.39	5.14	1.28
95th-Percentile Queue Length [ft/ln]	51.30	138.98	232.44	34.79	128.60	31.91



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.97	27.97	33.50	35.00	3.48	13.10	11.17
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	31.85			13.76		12.87	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	17.68						
Intersection LOS	B						
Intersection V/C	0.520						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.500	0.000	2.750
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.922	4.722
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.125

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑↑↑		↑↑↑		↑	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1079	20	0	986	0	46
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1131	21	0	1033	0	48
Peak Hour Factor	0.9740	0.9740	1.0000	0.9740	1.0000	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	290	5	0	265	0	12
Total Analysis Volume [veh/h]	1161	22	0	1061	0	49
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.50
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.42
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	10.62
d_A, Approach Delay [s/veh]	0.00		0.00		15.50	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.168

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗↗↗		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	91	718	81	0	728
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	95	752	85	0	763
Peak Hour Factor	1.0000	0.9420	0.9420	0.9420	1.0000	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	25	200	23	0	202
Total Analysis Volume [veh/h]	0	101	798	90	0	810
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0



**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.17	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.20	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.60	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	15.02	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.20		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.69					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.076

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	15	81	10	745	53	113	706
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	16	85	10	781	56	118	740
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	22	3	202	14	31	191
Total Analysis Volume [veh/h]	1	17	88	10	808	58	122	765
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.08	0.15	0.03	0.01	0.00	0.16	0.01
d_M, Delay for Movement [s/veh]	22.56	22.56	12.08	15.25	0.00	0.00	10.53	0.00
Movement LOS	C	C	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.26	0.26	0.52	0.09	0.04	0.00	0.56	0.00
95th-Percentile Queue Length [ft/ln]	6.52	6.52	12.88	2.13	1.07	0.00	13.96	0.00
d_A, Approach Delay [s/veh]	13.86			0.17			1.45	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.55							
Intersection LOS	C							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.298

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	26	1003	182	2	0	1003	89	48
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	1051	191	2	0	1051	93	50
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	272	49	1	0	272	24	13
Total Analysis Volume [veh/h]	28	1088	198	2	0	1088	96	52
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	11	58	0	0	19	66	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	99	99	0	95	9	9
g / C, Green / Cycle	0.04	0.82	0.82	0.00	0.79	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.12	0.00	0.21	0.05	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	63	4194	1309	8	4035	129	115
d1, Uniform Delay [s]	55.31	0.00	0.00	59.39	0.00	54.56	53.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.80	0.15	0.25	17.66	0.16	8.17	2.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.44	0.26	0.15	0.27	0.27	0.74	0.45
d, Delay for Lane Group [s/veh]	60.11	0.15	0.25	77.05	0.16	62.73	56.11
Lane Group LOS	E	A	A	E	A	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.88	0.06	0.09	0.10	0.06	3.16	1.61
50th-Percentile Queue Length [ft/ln]	22.09	1.46	2.23	2.42	1.54	79.04	40.19
95th-Percentile Queue Length [veh/ln]	1.59	0.11	0.16	0.17	0.11	5.69	2.89
95th-Percentile Queue Length [ft/ln]	39.76	2.63	4.01	4.35	2.77	142.27	72.35

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.11	0.15	0.25	77.05	77.05	0.16	62.73	56.11
Movement LOS	E	A	A	E	E	A	E	E
d_A, Approach Delay [s/veh]	1.44			0.31			60.41	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	4.38							
Intersection LOS	A							
Intersection V/C	0.298							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00	
d_p, Pedestrian Delay [s]	0.00			49.50			49.50	
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.022			2.048	
Crosswalk LOS	F			C			B	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000	
c_b, Capacity of the bicycle lane [bicycles/h]	0			0			0	
d_b, Bicycle Delay [s]	60.00			60.00			60.00	
I_b,int, Bicycle LOS Score for Intersection	4.855			4.732			4.132	
Bicycle LOS	E			E			D	

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	39.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Southwestbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	29	127	868	182	82	224	837	232	4	156	960	273	33	218	470	105
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	133	910	191	86	235	877	243	4	163	1006	286	35	228	493	110
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	0.92	0.92	0.92	0.92
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	36	246	52	23	64	237	66	1	44	272	77	9	62	133	30
Total Analysis Volume [veh/h]	32	144	984	206	93	254	948	263	4	176	1088	309	38	246	533	119
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	20.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	18	36	0	0	18	36	0	0	23	43	0	0	23	43	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	34	34	14	34	34	14	37	37	19	42	42
g / C, Green / Cycle	0.11	0.28	0.28	0.11	0.28	0.28	0.12	0.31	0.31	0.16	0.35	0.35
(v / s)_j Volume / Saturation Flow Rate	0.10	0.19	0.13	0.10	0.19	0.17	0.10	0.29	0.19	0.16	0.15	0.07
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3740	1589	1781	3560	1589
c, Capacity [veh/h]	201	1435	448	396	1444	451	210	1168	496	282	1256	561
d1, Uniform Delay [s]	47.93	27.68	25.66	47.72	27.18	26.49	51.96	40.03	35.24	50.50	29.56	27.17
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.16	0.18	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.47	2.69	3.38	6.25	2.35	5.44	9.76	4.03	1.92	34.36	0.23	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.69	0.46	0.88	0.66	0.58	0.86	0.93	0.62	1.01	0.42	0.21
d, Delay for Lane Group [s/veh]	59.40	30.37	29.04	53.98	29.53	31.93	61.71	44.06	37.15	84.86	29.79	27.35
Lane Group LOS	E	C	C	D	C	C	E	D	D	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.33	6.40	3.93	4.95	5.99	5.26	5.75	15.51	7.69	10.90	5.68	2.34
50th-Percentile Queue Length [ft/ln]	133.19	160.07	98.13	123.83	149.78	131.49	143.65	387.72	192.30	272.40	142.01	58.60
95th-Percentile Queue Length [veh/ln]	9.11	10.55	7.07	8.60	10.01	9.02	9.68	21.97	12.24	16.37	9.59	4.22
95th-Percentile Queue Length [ft/ln]	227.83	263.81	176.63	215.08	250.14	225.52	241.93	549.18	306.01	409.16	239.73	105.48

**Movement, Approach, & Intersection Results**

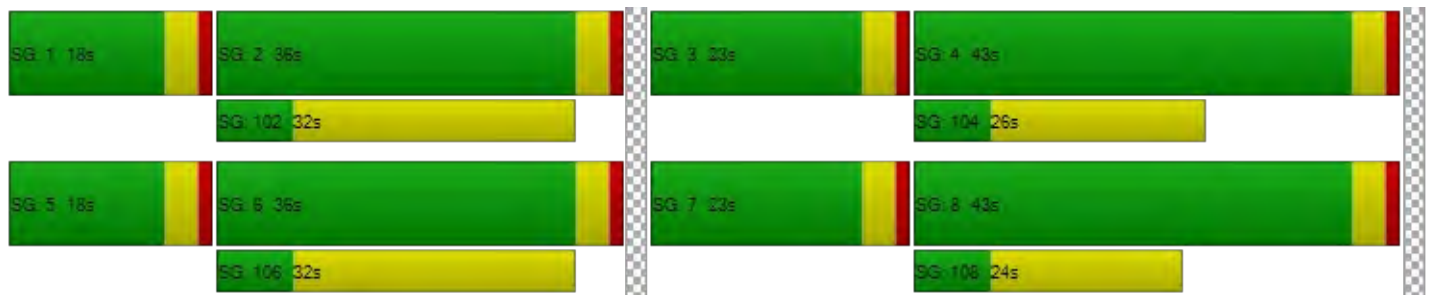
d_M, Delay for Movement [s/veh]	59.4	59.4	30.3	29.0	53.9	53.9	29.5	31.9	61.7	61.7	44.0	37.1	84.8	84.8	29.7	27.3
Movement LOS	E	E	C	C	D	D	C	C	E	E	D	D	F	F	C	C
d_A, Approach Delay [s/veh]	33.91				35.38				44.72				46.19			
Approach LOS	C				D				D				D			
d_I, Intersection Delay [s/veh]	39.58															
Intersection LOS	D															
Intersection V/C	0.797															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.147				3.303				3.199				3.127			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	533				533				650				650			
d_b, Bicycle Delay [s]	32.27				32.27				27.34				27.34			
I_b,int, Bicycle LOS Score for Intersection	2.293				2.277				2.715				2.129			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	52	943	75	106	181	1173	10	63	30	130	0	88	13	138
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	13	237	19	27	46	295	3	16	8	33	0	22	3	35
Total Analysis Volume [veh/h]	17	52	949	75	107	182	1180	10	63	30	131	0	89	13	139
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	97.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	12	46	0	0	30	64	0	0	44	0	0	0	44	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	58	58	21	73	73	29	29	29	29
g / C, Green / Cycle	0.05	0.48	0.48	0.18	0.61	0.61	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.04	0.19	0.05	0.16	0.23	0.01	0.18	0.08	0.16	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	530	1589	641	1589
c, Capacity [veh/h]	93	2460	768	314	3091	965	178	382	210	382
d1, Uniform Delay [s]	53.95	6.67	6.17	41.54	0.00	0.00	50.63	37.71	40.85	37.91
k, delay calibration	0.11	0.50	0.50	0.19	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.75	0.46	0.25	17.19	0.36	0.02	2.40	0.53	1.72	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.74	0.39	0.10	0.92	0.38	0.01	0.52	0.34	0.48	0.36
d, Delay for Lane Group [s/veh]	64.70	7.13	6.42	58.73	0.36	0.02	53.03	38.23	42.58	38.49
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.24	1.91	0.46	8.77	0.10	0.01	2.88	3.29	2.85	3.52
50th-Percentile Queue Length [ft/ln]	56.11	47.65	11.46	219.22	2.57	0.13	72.07	82.34	71.17	87.89
95th-Percentile Queue Length [veh/ln]	4.04	3.43	0.83	13.63	0.18	0.01	5.19	5.93	5.12	6.33
95th-Percentile Queue Length [ft/ln]	101.00	85.77	20.63	340.63	4.62	0.24	129.72	148.22	128.11	158.21

**Movement, Approach, & Intersection Results**

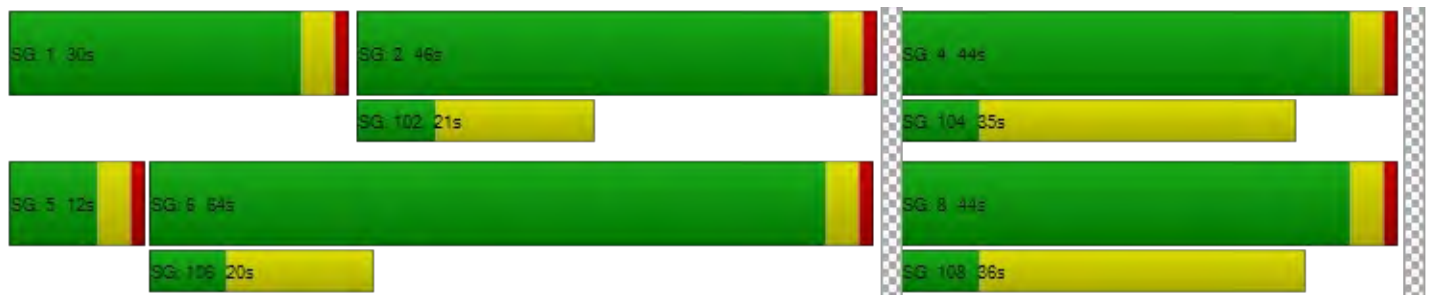
d_M, Delay for Movement [s/veh]	64.7	64.7	7.13	6.42	58.7	58.7	0.36	0.02	53.03	53.03	38.23	42.5	42.5	42.5	38.4	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	10.71				11.76				44.38				40.22			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	16.05															
Intersection LOS	B															
Intersection V/C	0.552															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.305				3.203				2.035				2.224			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				1000				667				667			
d_b, Bicycle Delay [s]	25.35				15.00				26.67				26.67			
I_b,int, Bicycle LOS Score for Intersection	2.151				2.273				1.929				1.810			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.638

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	23	921	382	32	170	1143	24	11	14	34	8	578	9	139
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	24	965	400	34	178	1198	25	12	15	36	8	606	9	146
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9550	0.9550	0.9550	0.95	0.95	0.95	0.95
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	6	253	105	9	47	314	7	3	4	9	2	159	2	38
Total Analysis Volume [veh/h]	17	25	1010	419	36	186	1254	26	13	16	38	8	635	9	153
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	50.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	49	0	0	24	62	0	0	11	0	0	0	36	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	56	56	17	68	68	6	6	25	25	25
g / C, Green / Cycle	0.04	0.47	0.47	0.14	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_j Volume / Saturation Flow Rate	0.02	0.20	0.26	0.12	0.24	0.24	0.02	0.02	0.18	0.18	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1851	1829	1589	1781	1783	1589
c, Capacity [veh/h]	79	2381	743	248	2002	1040	96	83	370	371	330
d1, Uniform Delay [s]	54.36	7.92	8.43	45.25	1.75	1.75	54.76	55.21	46.09	46.08	41.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.22	0.22	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.43	0.56	3.08	10.97	0.65	1.25	1.76	3.88	12.87	12.80	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.53	0.42	0.56	0.90	0.42	0.42	0.30	0.46	0.88	0.88	0.46
d, Delay for Lane Group [s/veh]	59.79	8.48	11.51	56.23	2.40	3.00	56.52	59.09	58.96	58.88	42.68
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.32	2.34	3.48	6.48	0.89	1.10	0.90	1.22	10.71	10.71	4.08
50th-Percentile Queue Length [ft/ln]	32.93	58.47	86.95	161.99	22.20	27.41	22.49	30.40	267.74	267.76	101.93
95th-Percentile Queue Length [veh/ln]	2.37	4.21	6.26	10.65	1.60	1.97	1.62	2.19	16.08	16.08	7.34
95th-Percentile Queue Length [ft/ln]	59.27	105.24	156.52	266.35	39.96	49.33	40.47	54.72	401.91	401.94	183.47

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.7	59.7	8.48	11.5	56.2	56.2	2.60	3.00	56.52	56.52	59.09	58.9	58.9	58.8	42.6
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	10.81			10.53			57.98			55.83					
Approach LOS	B			B			E			E					
d_I, Intersection Delay [s/veh]	20.95														
Intersection LOS	C														
Intersection V/C	0.638														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.201			1.988			2.492		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	750			967			117			533		
d_b, Bicycle Delay [s]	23.44			16.02			53.20			32.27		
I_b,int, Bicycle LOS Score for Intersection	2.355			2.283			1.670			2.875		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	2	38	369	271	0	136	551	121	109	1074	113	0	197	564	43
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	40	387	284	0	143	577	127	114	1126	118	0	206	591	45
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	1	10	98	72	0	36	147	32	29	286	30	0	52	150	11
Total Analysis Volume [veh/h]	2	41	393	289	0	145	586	129	116	1144	120	0	209	601	46
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	13	30	0	0	11	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	20	20	7	22	22	8	39	39	13	44	44
g / C, Green / Cycle	0.05	0.21	0.21	0.07	0.24	0.24	0.08	0.41	0.41	0.14	0.46	0.46
(v / s)_j Volume / Saturation Flow Rate	0.02	0.11	0.18	0.08	0.16	0.08	0.07	0.24	0.24	0.12	0.12	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1781	1781	3560	1803
c, Capacity [veh/h]	91	757	338	133	840	375	149	1447	724	246	1642	831
d1, Uniform Delay [s]	43.89	33.15	36.04	44.04	33.25	30.23	42.74	21.96	21.96	40.04	15.71	15.73
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.74	0.55	6.18	64.21	1.06	0.54	8.49	1.72	3.40	7.98	0.39	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.47	0.52	0.85	1.09	0.70	0.34	0.78	0.58	0.58	0.85	0.26	0.26
d, Delay for Lane Group [s/veh]	47.62	33.70	42.23	108.24	34.31	30.77	51.23	23.67	25.36	48.02	16.10	16.50
Lane Group LOS	D	C	D	F	C	C	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.05	3.92	6.75	5.39	6.03	2.42	2.91	7.02	7.36	5.09	2.68	2.82
50th-Percentile Queue Length [ft/ln]	26.31	97.90	168.75	134.85	150.80	60.54	72.83	175.43	183.97	127.29	67.02	70.54
95th-Percentile Queue Length [veh/ln]	1.89	7.05	11.01	9.46	10.06	4.36	5.24	11.36	11.81	8.79	4.83	5.08
95th-Percentile Queue Length [ft/ln]	47.36	176.22	275.27	236.61	251.50	108.97	131.10	284.04	295.19	219.81	120.63	126.98

**Movement, Approach, & Intersection Results**

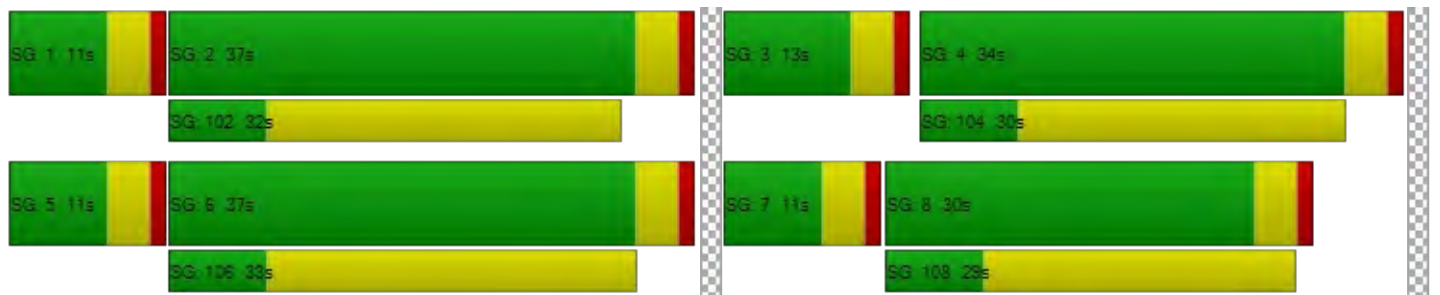
d_M, Delay for Movement [s/veh]	47.6	47.6	33.7	42.2	108.	108.	34.3	30.7	51.23	24.12	25.36	48.0	48.0	16.2	16.5
Movement LOS	D	D	C	D	F	F	C	C	D	C	C	D	D	B	B
d_A, Approach Delay [s/veh]	37.93			46.24				26.51			23.99				
Approach LOS	D			D				C			C				
d_I, Intersection Delay [s/veh]	32.55														
Intersection LOS	C														
Intersection V/C	0.674														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	37.14			37.14			37.14			37.14		
I_p,int, Pedestrian LOS Score for Intersection	2.810			2.762			3.046			3.105		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	695			695			547			632		
d_b, Bicycle Delay [s]	20.23			20.23			25.06			22.24		
I_b,int, Bicycle LOS Score for Intersection	2.124			2.149			2.319			2.030		
Bicycle LOS	B			B			B			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐		⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	37	457	415	349	1247	600	150
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	479	435	366	1307	629	157
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	129	117	99	352	170	42
Total Analysis Volume [veh/h]	42	517	469	395	1410	679	169
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	33	33	12	47	35	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0
Pedestrian Clearance [s]	0	22	0	0	24	24	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	19	56	33	33
g / C, Green / Cycle	0.20	0.20	0.24	0.70	0.41	0.41
(v / s)_j Volume / Saturation Flow Rate	0.16	0.17	0.22	0.40	0.19	0.11
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	692	563	433	2492	1448	647
d1, Uniform Delay [s]	30.56	30.74	29.47	5.97	17.41	15.77
k, delay calibration	0.11	0.11	0.15	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.30	3.30	10.33	0.94	1.09	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.81	0.83	0.91	0.57	0.47	0.26
d, Delay for Lane Group [s/veh]	32.85	34.04	39.80	6.91	18.50	16.75
Lane Group LOS	C	C	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.04	4.33	7.86	3.68	4.16	1.95
50th-Percentile Queue Length [ft/ln]	125.98	108.13	196.43	91.91	104.00	48.82
95th-Percentile Queue Length [veh/ln]	8.72	7.74	12.45	6.62	7.49	3.51
95th-Percentile Queue Length [ft/ln]	218.02	193.40	311.36	165.44	187.20	87.87

**Movement, Approach, & Intersection Results**

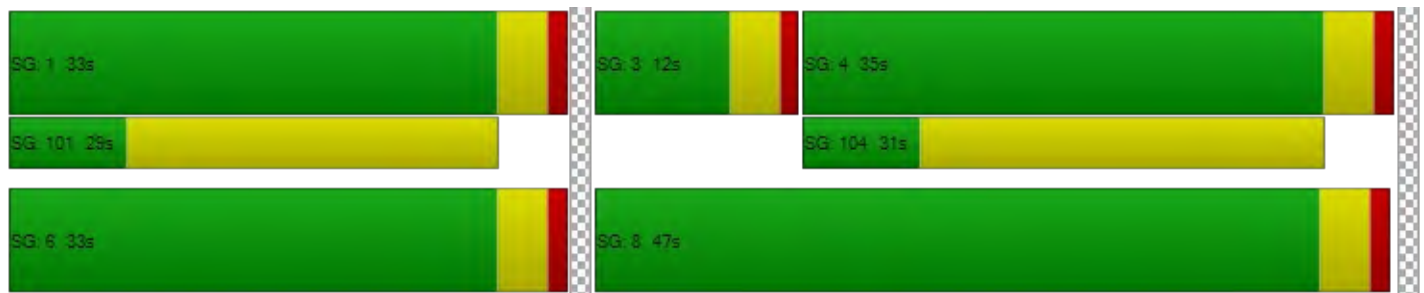
d_M, Delay for Movement [s/veh]	32.85	32.85	34.04	39.80	6.91	18.50	16.75
Movement LOS	C	C	C	D	A	B	B
d_A, Approach Delay [s/veh]	33.39			14.10		18.15	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	20.42						
Intersection LOS	C						
Intersection V/C	0.626						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0		0.0		11.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	29.76		0.00		29.76	
I_p,int, Pedestrian LOS Score for Intersection	2.707		0.000		3.195	
Crosswalk LOS	B		F		C	
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	0		0		0	
d_b, Bicycle Delay [s]	40.00		40.00		40.00	
I_b,int, Bicycle LOS Score for Intersection	4.132		5.622		4.832	
Bicycle LOS	D		F		E	

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1179	11	0	1350	0	13
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1236	12	0	1415	0	14
Peak Hour Factor	0.9750	0.9750	1.0000	0.9750	1.0000	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	317	3	0	363	0	4
Total Analysis Volume [veh/h]	1268	12	0	1451	0	14
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.36
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	3.01
d_A, Approach Delay [s/veh]	0.00		0.00		15.36	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	17.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.219

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	72	1374	66	0	813
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	75	1440	69	0	852
Peak Hour Factor	1.0000	0.9660	0.9660	0.9660	1.0000	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	19	373	18	0	220
Total Analysis Volume [veh/h]	0	78	1491	71	0	882
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.22	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	17.91	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.82	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	20.54	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.91		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	42.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.135

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	0	14	79	6	1393	45	104	798
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	15	83	6	1460	47	109	836
Peak Hour Factor	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	21	2	377	12	28	216
Total Analysis Volume [veh/h]	0	15	86	6	1508	49	113	864
Pedestrian Volume [ped/h]	0			0			0	



**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.14	0.24	0.02	0.02	0.00	0.27	0.01
d_M, Delay for Movement [s/veh]	42.43	42.43	18.52	16.84	0.00	0.00	16.66	0.00
Movement LOS	E	E	C	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.94	0.06	0.03	0.00	1.07	0.00
95th-Percentile Queue Length [ft/ln]	11.29	11.29	23.60	1.48	0.74	0.00	26.77	0.00
d_A, Approach Delay [s/veh]	22.07			0.06			1.93	
Approach LOS	C			A			A	
d_I, Intersection Delay [s/veh]	1.60							
Intersection LOS	E							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.286

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	35	845	154	1	39	881	103	39
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	886	161	1	41	923	108	41
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	230	42	0	11	239	28	11
Total Analysis Volume [veh/h]	38	918	167	1	42	956	112	42
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	14	64	0	0	13	63	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.04	0.78	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.18	0.11	0.02	0.19	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	75	3940	1229	80	3952	146	130
d1, Uniform Delay [s]	54.57	0.00	0.00	54.35	0.00	53.96	51.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.16	0.14	0.23	5.60	0.15	8.16	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.51	0.23	0.14	0.54	0.24	0.77	0.32
d, Delay for Lane Group [s/veh]	59.73	0.14	0.23	59.95	0.15	62.12	53.36
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.18	0.05	0.08	1.34	0.05	3.67	1.26
50th-Percentile Queue Length [ft/ln]	29.62	1.27	1.96	33.50	1.33	91.82	31.44
95th-Percentile Queue Length [veh/ln]	2.13	0.09	0.14	2.41	0.10	6.61	2.26
95th-Percentile Queue Length [ft/ln]	53.32	2.28	3.54	60.31	2.39	165.28	56.59



**Movement, Approach, & Intersection Results**

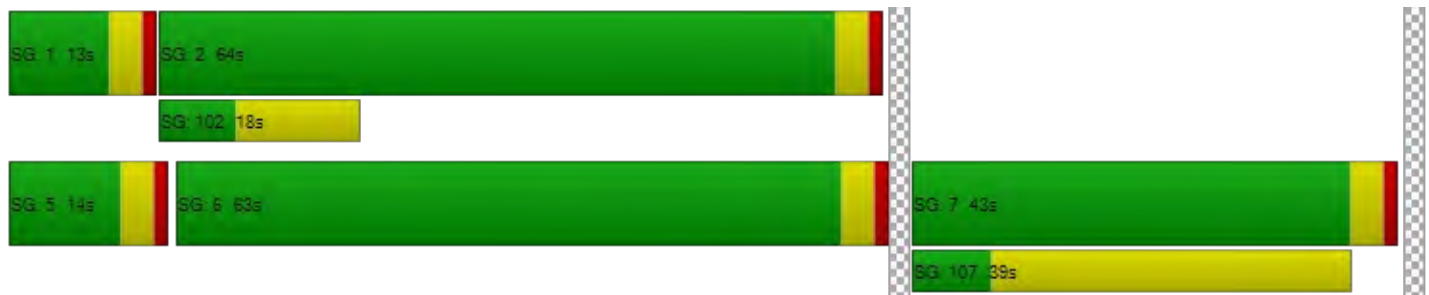
d_M, Delay for Movement [s/veh]	59.73	0.14	0.23	59.95	59.95	0.15	62.12	53.36
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	2.17			2.72			59.73	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	6.31							
Intersection LOS	A							
Intersection V/C	0.286							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.972	2.052
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.750	4.659	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	31.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	55	126	707	194	78	147	656	138	11	135	361	168	35	211	294	109
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	132	741	203	82	154	687	145	12	141	378	176	37	221	308	114
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	15	34	189	52	21	39	175	37	3	36	97	45	9	56	79	29
Total Analysis Volume [veh/h]	59	135	757	207	84	157	702	148	12	144	386	180	38	226	315	116
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	8.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	27	46	0	0	17	36	0	0	23	28	0	0	29	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	58	58	10	53	53	12	16	16	20	24	24
g / C, Green / Cycle	0.12	0.48	0.48	0.09	0.44	0.44	0.10	0.14	0.14	0.16	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.15	0.13	0.07	0.14	0.09	0.09	0.11	0.11	0.15	0.09	0.07
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	222	2440	761	297	2244	700	185	487	218	293	704	314
d1, Uniform Delay [s]	46.66	6.78	6.70	50.46	9.68	9.39	52.80	50.13	50.40	49.14	42.37	41.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.15	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.40	0.33	0.88	5.28	0.36	0.69	9.86	2.94	7.78	12.98	0.45	0.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.31	0.27	0.81	0.31	0.21	0.84	0.79	0.83	0.90	0.45	0.37
d, Delay for Lane Group [s/veh]	57.06	7.11	7.59	55.74	10.04	10.07	62.65	53.08	58.18	62.12	42.82	42.39
Lane Group LOS	E	A	A	E	B	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.72	1.55	1.38	3.52	1.92	1.27	5.01	5.66	5.59	8.58	4.05	2.96
50th-Percentile Queue Length [ft/ln]	143.06	38.63	34.59	88.12	47.92	31.81	125.14	141.42	139.70	214.59	101.23	74.10
95th-Percentile Queue Length [veh/ln]	9.65	2.78	2.49	6.34	3.45	2.29	8.67	9.56	9.46	13.39	7.29	5.34
95th-Percentile Queue Length [ft/ln]	241.14	69.54	62.25	158.61	86.26	57.26	216.87	238.94	236.62	334.71	182.22	133.38



**Movement, Approach, & Intersection Results**

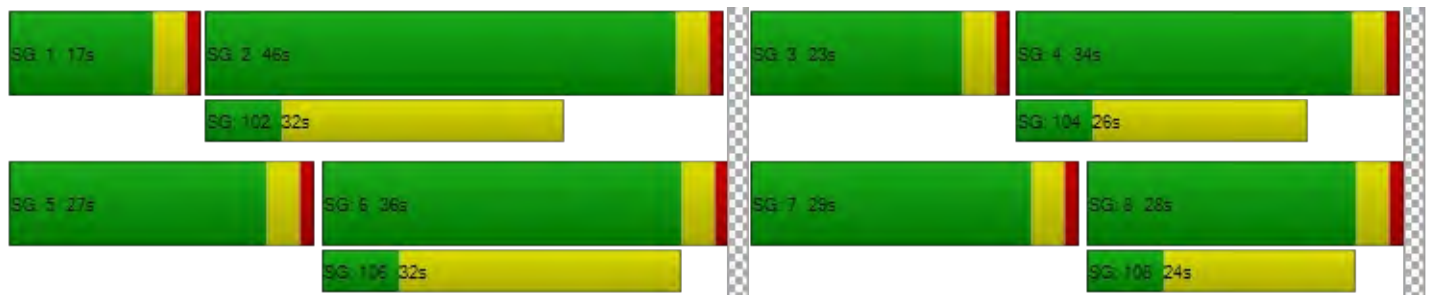
d_M, Delay for Movement [s/veh]	57.0	57.0	7.11	7.59	55.7	55.7	10.0	10.0	62.6	62.6	53.0	58.1	62.1	62.1	42.8	42.3
Movement LOS	E	E	A	A	E	E	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	15.56				20.14				56.42				50.08			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	31.52															
Intersection LOS	C															
Intersection V/C	0.545															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.061				3.220				2.981				2.910			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				533				400				500			
d_b, Bicycle Delay [s]	25.35				32.27				38.40				33.75			
I_b,int, Bicycle LOS Score for Intersection	2.164				2.073				2.036				1.947			
Bicycle LOS	B				B				B				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.523

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	74	829	119	83	188	873	37	35	20	45	0	115	19	157
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	19	211	30	21	48	222	9	9	5	11	0	29	5	40
Total Analysis Volume [veh/h]	44	75	842	121	84	191	887	38	36	20	46	0	117	19	160
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	3.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	15	47	0	0	33	65	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	61	61	20	71	71	27	27	27	27
g / C, Green / Cycle	0.08	0.51	0.51	0.17	0.59	0.59	0.22	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.08	0.15	0.17	0.02	0.17	0.03	0.18	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	320	1589	768	1589
c, Capacity [veh/h]	143	2579	805	302	3032	946	121	356	228	356
d1, Uniform Delay [s]	51.16	4.96	4.76	42.18	0.19	0.19	49.96	37.18	43.61	40.15
k, delay calibration	0.11	0.50	0.50	0.17	0.50	0.50	0.15	0.11	0.15	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.57	0.34	0.40	15.08	0.25	0.08	3.75	0.16	3.54	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.83	0.33	0.15	0.91	0.29	0.04	0.46	0.13	0.60	0.45
d, Delay for Lane Group [s/veh]	62.73	5.30	5.15	57.26	0.44	0.27	53.71	37.34	47.15	41.03
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.75	1.34	0.62	8.20	0.14	0.03	1.82	1.11	4.05	4.21
50th-Percentile Queue Length [ft/ln]	93.85	33.51	15.39	205.03	3.40	0.74	45.43	27.85	101.20	105.29
95th-Percentile Queue Length [veh/ln]	6.76	2.41	1.11	12.90	0.25	0.05	3.27	2.01	7.29	7.58
95th-Percentile Queue Length [ft/ln]	168.93	60.33	27.71	322.45	6.13	1.33	81.78	50.13	182.16	189.43



**Movement, Approach, & Intersection Results**

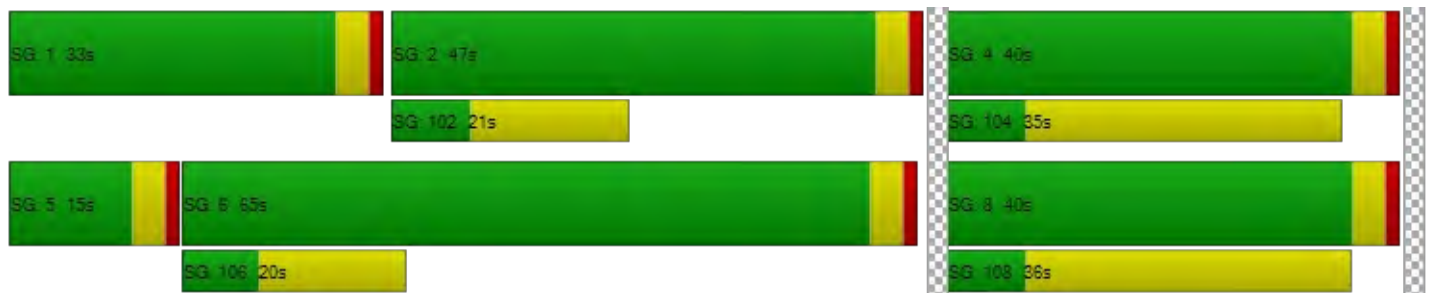
d_M, Delay for Movement [s/veh]	62.7	62.7	5.30	5.15	57.2	57.2	0.44	0.27	53.71	53.71	37.34	47.1	47.1	47.1	41.0	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	11.60				13.45				46.33				43.84			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	17.31															
Intersection LOS	B															
Intersection V/C	0.523															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.299				3.109				2.017				2.290			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	717				1017				600				600			
d_b, Bicycle Delay [s]	24.70				14.50				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.131				2.115				1.728				1.855			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	24	1044	549	25	137	882	28	20	5	32	7	612	8	142
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	25	1094	575	26	144	924	29	21	5	34	7	641	8	149
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9760	0.9760	0.9760	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	6	280	147	7	37	237	7	5	1	9	2	164	2	38
Total Analysis Volume [veh/h]	16	26	1121	589	27	148	947	30	22	5	35	7	657	8	153
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	36.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	12	59	0	0	17	64	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	60	60	13	67	67	6	6	25	25	25
g / C, Green / Cycle	0.04	0.50	0.50	0.11	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.37	0.10	0.18	0.18	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1841	1797	1589	1781	1783	1589
c, Capacity [veh/h]	80	2530	790	193	1995	1032	92	81	375	375	334
d1, Uniform Delay [s]	54.32	5.81	6.92	48.57	1.81	1.81	54.84	55.23	46.11	46.10	41.39
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.27	0.27	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.34	0.56	6.34	14.58	0.43	0.83	1.75	3.56	16.60	16.52	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.53	0.44	0.75	0.91	0.32	0.32	0.29	0.43	0.90	0.90	0.46
d, Delay for Lane Group [s/veh]	59.65	6.38	13.26	63.16	2.24	2.64	56.59	58.79	62.71	62.62	42.37
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.32	2.01	4.53	5.49	0.68	0.82	0.84	1.12	11.43	11.43	4.06
50th-Percentile Queue Length [ft/ln]	32.88	50.34	113.26	137.16	17.04	20.50	20.97	27.93	285.82	285.77	101.49
95th-Percentile Queue Length [veh/ln]	2.37	3.62	8.02	9.33	1.23	1.48	1.51	2.01	16.98	16.98	7.31
95th-Percentile Queue Length [ft/ln]	59.19	90.60	200.52	233.19	30.67	36.90	37.75	50.28	424.45	424.39	182.68



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	6.38	13.2	63.1	63.1	2.36	2.64	56.59	56.59	58.79	62.7	62.6	62.6	42.3
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	9.97			11.61			57.83			58.90					
Approach LOS	A			B			E			E					
d_I, Intersection Delay [s/veh]	21.90														
Intersection LOS	C														
Intersection V/C	0.728														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.172			1.988			2.527		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	917			1000			117			483		
d_b, Bicycle Delay [s]	17.60			15.00			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.509			2.112			1.662			2.909		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	26.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.332

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	1	38	215	168	1	42	207	69	65	443	56	2	100	397	41
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	40	225	176	1	44	217	72	68	464	59	2	105	416	43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9730	0.9730	0.9730	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	10	58	45	0	11	56	18	17	119	15	1	27	107	11
Total Analysis Volume [veh/h]	1	41	231	181	1	45	223	74	70	477	61	2	108	428	44
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	12	33	0	0	14	35	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	13	13	5	14	14	6	53	53	8	55	55
g / C, Green / Cycle	0.05	0.14	0.14	0.05	0.14	0.14	0.06	0.56	0.56	0.08	0.58	0.58
(v / s)_j Volume / Saturation Flow Rate	0.02	0.06	0.11	0.03	0.06	0.05	0.04	0.10	0.10	0.06	0.09	0.09
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1765	1781	3560	1783
c, Capacity [veh/h]	90	505	226	94	514	229	112	1982	983	143	2044	1023
d1, Uniform Delay [s]	43.92	37.46	39.54	43.80	37.16	36.54	43.49	10.39	10.41	42.91	9.47	9.48
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.70	0.65	6.52	3.84	0.58	0.81	5.58	0.20	0.41	8.46	0.16	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.47	0.46	0.80	0.49	0.43	0.32	0.62	0.18	0.18	0.77	0.15	0.16
d, Delay for Lane Group [s/veh]	47.63	38.11	46.06	47.64	37.74	37.34	49.07	10.59	10.83	51.37	9.63	9.81
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	A	A
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.03	2.43	4.36	1.12	2.33	1.55	1.72	1.67	1.74	2.77	1.36	1.43
50th-Percentile Queue Length [ft/ln]	25.71	60.84	108.96	28.12	58.35	38.68	42.95	41.63	43.58	69.18	33.92	35.76
95th-Percentile Queue Length [veh/ln]	1.85	4.38	7.78	2.02	4.20	2.78	3.09	3.00	3.14	4.98	2.44	2.57
95th-Percentile Queue Length [ft/ln]	46.28	109.52	194.56	50.62	105.02	69.62	77.32	74.93	78.45	124.52	61.05	64.37



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	38.1	46.0	47.6	47.6	37.7	37.3	49.07	10.65	10.83	51.3	51.3	9.68	9.81	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	A	A	
d_A, Approach Delay [s/veh]	42.16				38.98				15.09				17.57			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	26.12															
Intersection LOS	C															
Intersection V/C	0.332															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.638				2.604				2.837				2.865			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	695				695				611				653			
d_b, Bicycle Delay [s]	20.23				20.23				22.93				21.56			
I_b,int, Bicycle LOS Score for Intersection	1.900				1.805				1.894				1.879			
Bicycle LOS	A				A				A				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	23	111	278	304	544	508	88
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	116	291	319	570	532	92
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	31	79	87	155	144	25
Total Analysis Volume [veh/h]	26	126	316	346	619	578	100
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	17	56	36	36
g / C, Green / Cycle	0.14	0.14	0.22	0.75	0.47	0.47
(v / s)_j Volume / Saturation Flow Rate	0.04	0.11	0.19	0.17	0.16	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	502	408	396	2665	1683	751
d1, Uniform Delay [s]	28.71	30.92	28.17	2.88	12.47	11.15
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	3.17	6.10	0.20	0.56	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.30	0.77	0.87	0.23	0.34	0.13
d, Delay for Lane Group [s/veh]	29.04	34.08	34.27	3.08	13.03	11.51
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.18	2.76	6.01	0.62	2.61	0.84
50th-Percentile Queue Length [ft/ln]	29.39	68.99	150.15	15.42	65.26	21.09
95th-Percentile Queue Length [veh/ln]	2.12	4.97	10.03	1.11	4.70	1.52
95th-Percentile Queue Length [ft/ln]	52.91	124.18	250.63	27.75	117.47	37.97

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	29.04	29.04	34.08	34.27	3.08	13.03	11.51
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	32.45			14.26		12.81	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	17.83						
Intersection LOS	B						
Intersection V/C	0.510						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.503	0.000	2.731
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.929	4.692
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	14.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1054	13	0	1059	0	30
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1105	14	0	1110	0	31
Peak Hour Factor	0.9630	0.9630	1.0000	0.9630	1.0000	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	287	4	0	288	0	8
Total Analysis Volume [veh/h]	1147	15	0	1153	0	32
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.89
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.26
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.56
d_A, Approach Delay [s/veh]	0.00		0.00		14.89	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.103

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗↘		↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	57	682	49	0	667
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	60	715	51	0	699
Peak Hour Factor	1.0000	0.9430	0.9430	0.9430	1.0000	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	16	190	14	0	185
Total Analysis Volume [veh/h]	0	64	758	54	0	741
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.10	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	11.49	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.34	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.61	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.49		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	8	71	13	683	43	85	648
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	8	74	14	716	45	89	679
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	20	4	189	12	24	179
Total Analysis Volume [veh/h]	1	8	78	15	757	48	94	718
Pedestrian Volume [ped/h]	0			0			0	



**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.03	0.13	0.04	0.01	0.00	0.12	0.01
d_M, Delay for Movement [s/veh]	20.02	20.02	11.65	14.64	0.00	0.00	9.99	0.00
Movement LOS	C	C	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.43	0.11	0.06	0.00	0.39	0.00
95th-Percentile Queue Length [ft/ln]	2.81	2.81	10.74	2.80	1.40	0.00	9.73	0.00
d_A, Approach Delay [s/veh]	12.52			0.27			1.16	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.31							
Intersection LOS	C							

**OPENING YEAR (2024) BASE AMBIENT GROWTH**

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.310

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	32	953	129	3	32	810	96	41
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	1029	139	3	35	874	104	44
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	269	36	1	9	228	27	11
Total Analysis Volume [veh/h]	37	1074	145	3	37	912	109	46
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	66	0	0	11	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.78	0.78	0.04	0.78	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.09	0.02	0.18	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	74	3956	1234	77	3963	143	128
d1, Uniform Delay [s]	54.64	0.00	0.00	54.50	0.00	54.05	52.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	0.17	0.19	5.39	0.14	8.07	1.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.50	0.27	0.12	0.52	0.23	0.76	0.36
d, Delay for Lane Group [s/veh]	59.75	0.17	0.19	59.89	0.14	62.12	53.96
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.15	0.06	0.07	1.25	0.05	3.57	1.39
50th-Percentile Queue Length [ft/ln]	28.87	1.55	1.66	31.19	1.24	89.34	34.69
95th-Percentile Queue Length [veh/ln]	2.08	0.11	0.12	2.25	0.09	6.43	2.50
95th-Percentile Queue Length [ft/ln]	51.96	2.79	2.99	56.15	2.24	160.82	62.44



**Movement, Approach, & Intersection Results**

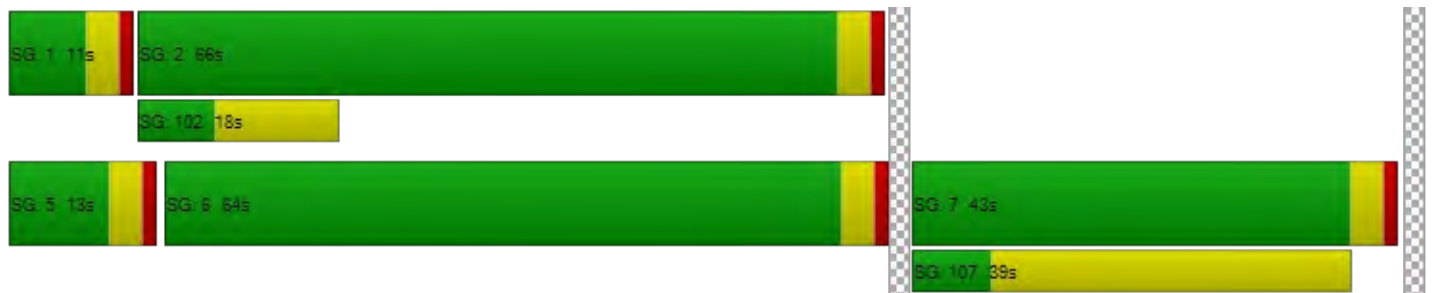
d_M, Delay for Movement [s/veh]	59.75	0.17	0.19	59.89	59.89	0.14	62.12	53.96
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.93			2.65			59.70	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	6.01							
Intersection LOS	A							
Intersection V/C	0.310							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.992	2.045
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.823	4.636	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.582

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	35	147	772	180	72	180	565	117	15	168	389	165	31	230	357	115
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	159	833	195	77	195	610	127	16	181	420	178	33	248	385	125
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	10	42	218	51	20	51	160	33	4	47	110	47	9	65	101	33
Total Analysis Volume [veh/h]	40	166	872	204	81	204	639	133	17	190	440	186	35	260	403	131
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	11.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	27	45	0	0	18	36	0	0	25	28	0	0	29	32	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No				No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	53	53	12	49	49	16	18	18	22	24	24
g / C, Green / Cycle	0.13	0.44	0.44	0.10	0.41	0.41	0.13	0.15	0.15	0.18	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.12	0.17	0.13	0.08	0.13	0.08	0.12	0.12	0.12	0.17	0.11	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	233	2240	699	340	2074	647	236	524	234	323	698	311
d1, Uniform Delay [s]	46.01	10.00	9.68	49.24	12.42	12.04	51.07	49.79	49.42	48.19	43.74	42.28
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.20	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.49	0.51	1.06	5.49	0.39	0.72	9.90	3.69	6.05	16.69	0.76	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.39	0.29	0.84	0.31	0.21	0.88	0.84	0.79	0.91	0.58	0.42
d, Delay for Lane Group [s/veh]	56.50	10.52	10.74	54.73	12.81	12.76	60.97	53.48	55.47	64.88	44.50	43.18
Lane Group LOS	E	B	B	D	B	B	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.03	2.45	1.81	4.11	2.13	1.38	6.59	6.51	5.63	9.89	5.35	3.40
50th-Percentile Queue Length [ft/ln]	150.73	61.24	45.36	102.87	53.34	34.61	164.69	162.78	140.79	247.13	133.85	84.90
95th-Percentile Queue Length [veh/ln]	10.06	4.41	3.27	7.41	3.84	2.49	10.80	10.70	9.52	15.04	9.15	6.11
95th-Percentile Queue Length [ft/ln]	251.40	110.23	81.65	185.17	96.01	62.31	269.92	267.40	238.08	376.04	228.72	152.82

**Movement, Approach, & Intersection Results**

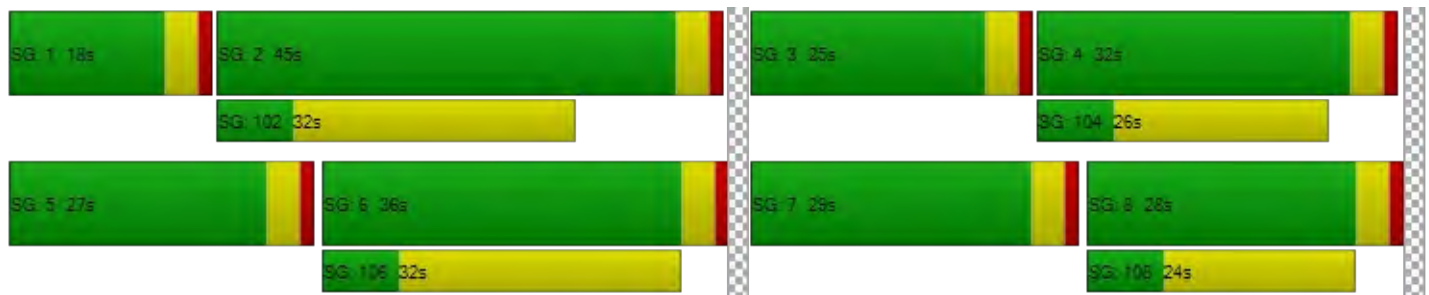
d_M, Delay for Movement [s/veh]	56.5	56.5	10.5	10.7	54.7	54.7	12.8	12.7	60.9	60.9	53.4	55.4	64.8	64.8	44.5	43.1
Movement LOS	E	E	B	B	D	D	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	17.94				24.10				55.79				51.54			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	34.41															
Intersection LOS	C															
Intersection V/C	0.582															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.076				3.236				3.020				2.958			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	683				533				400				467			
d_b, Bicycle Delay [s]	26.00				32.27				38.40				35.27			
I_b,int, Bicycle LOS Score for Intersection	2.243				2.029				2.090				2.029			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	119	901	128	88	153	842	27	48	18	90	0	106	15	155
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	32	242	34	24	41	226	7	13	5	24	0	28	4	42
Total Analysis Volume [veh/h]	34	128	969	138	95	165	905	29	52	19	97	0	114	16	167
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	73.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	17	44	0	0	32	59	0	0	44	0	0	0	44	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	57	57	19	64	64	31	31	31	31
g / C, Green / Cycle	0.10	0.48	0.48	0.16	0.53	0.53	0.26	0.26	0.26	0.26
(v / s)_j Volume / Saturation Flow Rate	0.09	0.19	0.09	0.15	0.18	0.02	0.19	0.06	0.19	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	375	1589	670	1589
c, Capacity [veh/h]	187	2431	759	287	2718	848	150	416	232	416
d1, Uniform Delay [s]	48.71	7.11	6.67	43.01	3.28	3.11	51.22	34.85	40.31	36.56
k, delay calibration	0.11	0.50	0.50	0.15	0.50	0.50	0.14	0.11	0.15	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.49	0.49	0.53	13.35	0.33	0.08	2.97	0.28	2.95	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.40	0.18	0.91	0.33	0.03	0.47	0.23	0.56	0.40
d, Delay for Lane Group [s/veh]	60.20	7.60	7.19	56.35	3.61	3.18	54.19	35.13	43.25	37.19
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.95	2.08	0.92	7.66	1.02	0.10	2.25	2.30	3.72	4.16
50th-Percentile Queue Length [ft/ln]	123.83	51.96	22.91	191.50	25.59	2.62	56.13	57.46	92.97	104.12
95th-Percentile Queue Length [veh/ln]	8.60	3.74	1.65	12.20	1.84	0.19	4.04	4.14	6.69	7.50
95th-Percentile Queue Length [ft/ln]	215.08	93.53	41.24	304.97	46.07	4.71	101.04	103.42	167.35	187.41

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.2	60.2	7.60	7.19	56.3	56.3	3.61	3.18	54.19	54.19	35.13	43.2	43.2	43.2	37.1	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	14.27				15.08				43.18				39.84			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	18.85															
Intersection LOS	B															
Intersection V/C	0.558															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft²/ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.327				3.152				2.046				2.284			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	667				917				667				667			
d_b, Bicycle Delay [s]	26.67				17.60				26.67				26.67			
I_b,int, Bicycle LOS Score for Intersection	2.239				2.126				1.837				1.862			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.632

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	14	15	1027	409	19	140	872	33	20	17	39	11	542	20	161
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	16	1108	442	21	151	941	36	22	19	42	12	585	22	174
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9750	0.9750	0.9750	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	4	284	113	5	39	241	9	6	5	11	3	150	6	45
Total Analysis Volume [veh/h]	15	16	1136	453	22	155	965	37	23	19	43	12	600	23	178
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	11.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	54	0	0	22	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	60	60	14	69	69	7	7	24	24	24
g / C, Green / Cycle	0.04	0.50	0.50	0.11	0.57	0.57	0.05	0.05	0.20	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.02	0.22	0.28	0.10	0.19	0.19	0.02	0.03	0.18	0.18	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1835	1820	1589	1781	1787	1589
c, Capacity [veh/h]	68	2526	788	204	2037	1050	100	87	359	360	320
d1, Uniform Delay [s]	54.97	5.89	6.23	47.68	1.23	1.23	54.85	55.07	46.57	46.55	43.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.24	0.24	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.58	3.04	10.68	0.42	0.82	2.78	4.23	14.44	14.24	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.45	0.57	0.87	0.32	0.32	0.42	0.49	0.88	0.88	0.56
d, Delay for Lane Group [s/veh]	59.66	6.47	9.26	58.37	1.65	2.05	57.62	59.30	61.01	60.79	44.61
Lane Group LOS	E	A	A	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.06	3.02	5.31	0.52	0.65	1.32	1.38	10.60	10.60	4.89
50th-Percentile Queue Length [ft/ln]	24.45	51.43	75.44	132.64	12.97	16.28	32.93	34.43	265.08	265.06	122.36
95th-Percentile Queue Length [veh/ln]	1.76	3.70	5.43	9.08	0.93	1.17	2.37	2.48	15.94	15.94	8.52
95th-Percentile Queue Length [ft/ln]	44.00	92.57	135.79	227.08	23.35	29.31	59.28	61.98	398.58	398.56	213.07

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	6.47	9.26	58.3	58.3	1.78	2.05	57.62	57.62	59.30	61.0	60.9	60.7	44.6	
Movement LOS	E	E	A	A	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	8.27				10.28				58.47				57.33			
Approach LOS	A				B				E				E			
d_I, Intersection Delay [s/veh]	20.85															
Intersection LOS	C															
Intersection V/C	0.632															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.181				1.998				2.496			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	833				1017				117				483			
d_b, Bicycle Delay [s]	20.42				14.50				53.20				34.50			
I_b,int, Bicycle LOS Score for Intersection	2.442				2.123				1.700				2.881			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.398

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	0	35	266	181	1	49	253	80	69	461	45	2	154	459	37
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	287	196	1	53	273	87	74	497	48	2	166	495	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.9630	0.9630	0.9630	0.96	0.96	0.96	0.96
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	10	75	51	0	14	71	23	19	129	12	1	43	129	10
Total Analysis Volume [veh/h]	0	39	298	204	1	55	283	90	77	516	50	2	172	514	42
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	13	39	0	0	11	37	0	11	33	0	0	12	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	15	15	5	16	16	6	47	47	11	53	53
g / C, Green / Cycle	0.05	0.16	0.16	0.06	0.17	0.17	0.06	0.50	0.50	0.12	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.02	0.08	0.13	0.03	0.08	0.06	0.04	0.11	0.11	0.10	0.10	0.10
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1787	1781	3560	1799
c, Capacity [veh/h]	87	562	251	103	596	266	116	1767	887	213	1962	991
d1, Uniform Delay [s]	44.03	36.82	38.70	43.59	35.83	34.96	43.49	13.49	13.51	40.88	10.70	10.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.62	0.78	6.25	4.35	0.59	0.75	6.45	0.27	0.56	7.51	0.21	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.45	0.53	0.81	0.54	0.47	0.34	0.67	0.21	0.22	0.82	0.19	0.19
d, Delay for Lane Group [s/veh]	47.65	37.60	44.96	47.94	36.42	35.71	49.94	13.76	14.07	48.39	10.91	11.14
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.96	3.14	4.86	1.37	2.92	1.84	1.91	2.10	2.21	4.24	1.75	1.85
50th-Percentile Queue Length [ft/ln]	23.92	78.41	121.57	34.28	72.94	45.89	47.72	52.53	55.28	106.07	43.84	46.22
95th-Percentile Queue Length [veh/ln]	1.72	5.65	8.48	2.47	5.25	3.30	3.44	3.78	3.98	7.62	3.16	3.33
95th-Percentile Queue Length [ft/ln]	43.05	141.13	211.98	61.71	131.30	82.60	85.89	94.56	99.51	190.52	78.92	83.20

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	37.6	44.9	47.9	47.9	36.4	35.7	49.94	13.85	14.07	48.3	48.3	10.9	11.1	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	B	B	
d_A, Approach Delay [s/veh]	41.10				37.78				18.19				19.90			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	27.60															
Intersection LOS	C															
Intersection V/C	0.398															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.682				2.638				2.865				2.911			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	737				695				611				632			
d_b, Bicycle Delay [s]	18.95				20.23				22.93				22.24			
I_b,int, Bicycle LOS Score for Intersection	1.974				1.868				1.913				1.960			
Bicycle LOS	A				A				A				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.536

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	27	109	320	280	578	564	77
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	117	345	302	624	609	83
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	31	92	80	166	162	22
Total Analysis Volume [veh/h]	31	124	367	321	664	648	88
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	16	55	35	35
g / C, Green / Cycle	0.16	0.16	0.21	0.73	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.04	0.13	0.18	0.19	0.18	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	567	462	371	2597	1666	744
d1, Uniform Delay [s]	27.47	30.18	28.72	3.38	12.99	11.25
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	3.16	6.14	0.24	0.69	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.27	0.80	0.87	0.26	0.39	0.12
d, Delay for Lane Group [s/veh]	27.73	33.34	34.86	3.62	13.68	11.58
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.16	3.18	5.61	0.84	3.04	0.75
50th-Percentile Queue Length [ft/ln]	29.11	79.45	140.36	20.92	76.10	18.64
95th-Percentile Queue Length [veh/ln]	2.10	5.72	9.50	1.51	5.48	1.34
95th-Percentile Queue Length [ft/ln]	52.39	143.02	237.50	37.65	136.97	33.55



**Movement, Approach, & Intersection Results**

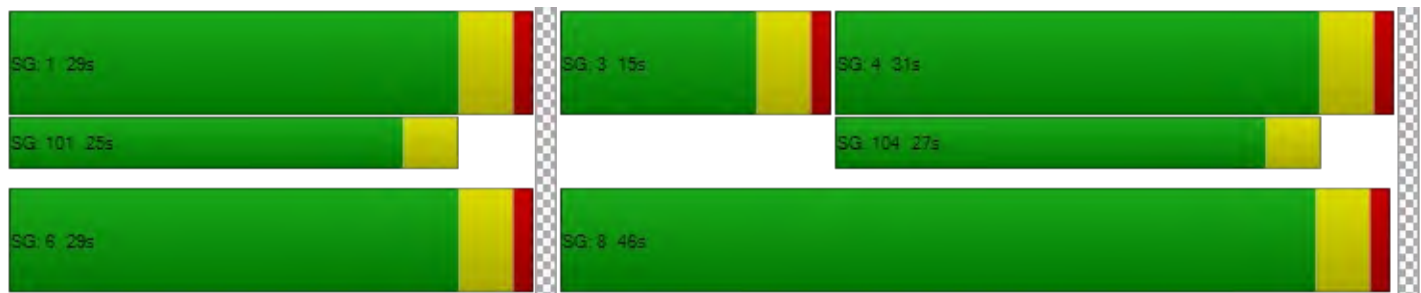
d_M, Delay for Movement [s/veh]	27.73	27.73	33.34	34.86	3.62	13.68	11.58
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	31.67			13.80		13.43	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	17.84						
Intersection LOS	B						
Intersection V/C	0.536						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.507	0.000	2.764
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.945	4.740
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.131

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑↑↑		↑↑↑		↑	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1079	20	0	986	0	46
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1165	22	0	1064	0	49
Peak Hour Factor	0.9740	0.9740	1.0000	0.9740	1.0000	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	299	6	0	273	0	13
Total Analysis Volume [veh/h]	1196	23	0	1092	0	50
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.85
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.45
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	11.19
d_A, Approach Delay [s/veh]	0.00		0.00		15.85	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	C					

**Intersection Level Of Service Report  
Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.176

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	91	718	81	0	728
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	98	775	88	0	786
Peak Hour Factor	1.0000	0.9420	0.9420	0.9420	1.0000	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	26	206	23	0	209
Total Analysis Volume [veh/h]	0	104	823	93	0	834
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**



V/C, Movement V/C Ratio	0.00	0.18	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.41	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.64	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	15.90	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.41		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	B					



**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	15	81	10	745	53	113	706
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	16	88	10	804	58	122	762
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	23	3	208	15	32	197
Total Analysis Volume [veh/h]	1	17	91	10	831	60	126	788
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.08	0.16	0.03	0.01	0.00	0.17	0.01
d_M, Delay for Movement [s/veh]	23.35	23.35	12.27	15.63	0.00	0.00	10.71	0.00
Movement LOS	C	C	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.55	0.09	0.04	0.00	0.60	0.00
95th-Percentile Queue Length [ft/ln]	6.81	6.81	13.67	2.21	1.11	0.00	14.88	0.00
d_A, Approach Delay [s/veh]	14.10			0.17			1.48	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.58							
Intersection LOS	C							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.307

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	26	1003	182	2	0	1003	89	48
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	1083	197	2	0	1083	96	52
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	280	51	1	0	280	25	13
Total Analysis Volume [veh/h]	29	1121	204	2	0	1121	99	54
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	11	58	0	0	19	66	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	99	99	0	95	9	9
g / C, Green / Cycle	0.04	0.82	0.82	0.00	0.79	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.13	0.00	0.22	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	65	4185	1306	8	4022	132	118
d1, Uniform Delay [s]	55.22	0.00	0.00	59.39	0.00	54.45	53.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.16	0.26	17.66	0.17	8.16	2.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.27	0.16	0.27	0.28	0.75	0.46
d, Delay for Lane Group [s/veh]	60.05	0.16	0.26	77.05	0.17	62.61	55.97
Lane Group LOS	E	A	A	E	A	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.91	0.06	0.09	0.10	0.06	3.26	1.67
50th-Percentile Queue Length [ft/ln]	22.84	1.52	2.31	2.42	1.61	81.43	41.68
95th-Percentile Queue Length [veh/ln]	1.64	0.11	0.17	0.17	0.12	5.86	3.00
95th-Percentile Queue Length [ft/ln]	41.11	2.74	4.16	4.35	2.90	146.57	75.02



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.05	0.16	0.26	77.05	77.05	0.17	62.61	55.97
Movement LOS	E	A	A	E	E	A	E	E
d_A, Approach Delay [s/veh]	1.45			0.31			60.27	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	4.39							
Intersection LOS	A							
Intersection V/C	0.307							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.034	2.051
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.877	4.750	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	41.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.821

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	29	127	868	182	82	224	837	232	4	156	960	273	33	218	470	105
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	137	937	197	89	242	903	250	4	168	1036	295	36	235	508	113
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	0.92	0.92	0.92	0.92
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	37	253	53	24	65	244	68	1	45	280	80	10	64	137	31
Total Analysis Volume [veh/h]	34	148	1013	213	96	262	976	270	4	182	1120	319	39	254	549	122
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	20.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	18	36	0	0	18	36	0	0	23	43	0	0	23	43	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	33	33	14	33	33	15	38	38	19	43	43
g / C, Green / Cycle	0.12	0.27	0.27	0.12	0.27	0.27	0.12	0.32	0.32	0.16	0.36	0.36
(v / s)_j Volume / Saturation Flow Rate	0.10	0.20	0.13	0.10	0.19	0.17	0.10	0.30	0.20	0.16	0.15	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3740	1589	1781	3560	1589
c, Capacity [veh/h]	206	1395	435	404	1399	437	217	1189	505	282	1262	563
d1, Uniform Delay [s]	47.62	28.96	26.75	47.56	28.57	27.78	51.67	39.86	34.93	50.50	29.57	27.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.18	0.20	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.58	3.33	3.90	6.70	2.91	6.44	9.40	4.54	2.13	44.42	0.24	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.73	0.49	0.89	0.70	0.62	0.86	0.94	0.63	1.04	0.44	0.22
d, Delay for Lane Group [s/veh]	59.20	32.29	30.64	54.26	31.47	34.22	61.07	44.40	37.06	94.92	29.81	27.28
Lane Group LOS	E	C	C	D	C	C	E	D	D	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.49	6.96	4.21	5.12	6.53	5.65	5.91	16.08	7.95	11.68	5.86	2.40
50th-Percentile Queue Length [ft/ln]	137.33	174.03	105.22	128.06	163.36	141.25	147.79	401.99	198.80	292.11	146.53	59.99
95th-Percentile Queue Length [veh/ln]	9.34	11.29	7.57	8.83	10.73	9.55	9.90	22.66	12.58	17.61	9.83	4.32
95th-Percentile Queue Length [ft/ln]	233.42	282.21	189.33	220.85	268.17	238.71	247.48	566.40	314.42	440.34	245.80	107.98

**Movement, Approach, & Intersection Results**

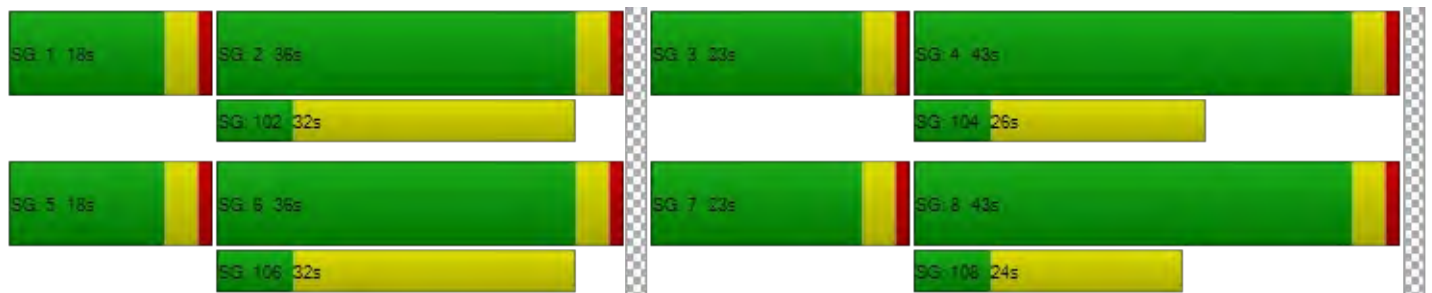
d_M, Delay for Movement [s/veh]	59.2	59.2	32.2	30.6	54.2	54.2	31.4	34.2	61.0	61.0	44.4	37.0	94.9	94.9	29.8	27.2
Movement LOS	E	E	C	C	D	D	C	C	E	E	D	D	F	F	C	C
d_A, Approach Delay [s/veh]	35.52				37.02				44.86				49.28			
Approach LOS	D				D				D				D			
d_I, Intersection Delay [s/veh]	41.03															
Intersection LOS	D															
Intersection V/C	0.821															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.160				3.312				3.213				3.142			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	533				533				650				650			
d_b, Bicycle Delay [s]	32.27				32.27				27.34				27.34			
I_b,int, Bicycle LOS Score for Intersection	2.315				2.298				2.750				2.145			
Bicycle LOS	B				B				C				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	54	971	77	109	186	1208	10	65	31	134	0	91	13	142
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	14	244	19	27	47	304	3	16	8	34	0	23	3	36
Total Analysis Volume [veh/h]	18	54	977	77	110	187	1215	10	65	31	135	0	92	13	143
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	15.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	40	0	0	34	63	0	0	46	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	58	58	22	73	73	29	29	29	29
g / C, Green / Cycle	0.05	0.48	0.48	0.18	0.61	0.61	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.04	0.19	0.05	0.17	0.24	0.01	0.18	0.08	0.16	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	548	1589	667	1589
c, Capacity [veh/h]	94	2443	762	323	3098	967	181	380	215	380
d1, Uniform Delay [s]	53.96	6.95	6.39	40.97	0.00	0.00	50.65	37.99	41.27	38.21
k, delay calibration	0.11	0.50	0.50	0.21	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.88	0.49	0.27	17.47	0.37	0.02	2.39	0.56	1.70	0.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.76	0.40	0.10	0.92	0.39	0.01	0.53	0.36	0.49	0.38
d, Delay for Lane Group [s/veh]	65.83	7.44	6.66	58.44	0.37	0.02	53.04	38.56	42.97	38.82
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.36	2.03	0.48	9.00	0.11	0.01	2.97	3.41	2.95	3.64
50th-Percentile Queue Length [ft/ln]	59.09	50.81	12.12	224.93	2.68	0.13	74.29	85.33	73.75	90.93
95th-Percentile Queue Length [veh/ln]	4.25	3.66	0.87	13.92	0.19	0.01	5.35	6.14	5.31	6.55
95th-Percentile Queue Length [ft/ln]	106.37	91.46	21.82	347.91	4.83	0.24	133.72	153.60	132.75	163.68

**Movement, Approach, & Intersection Results**

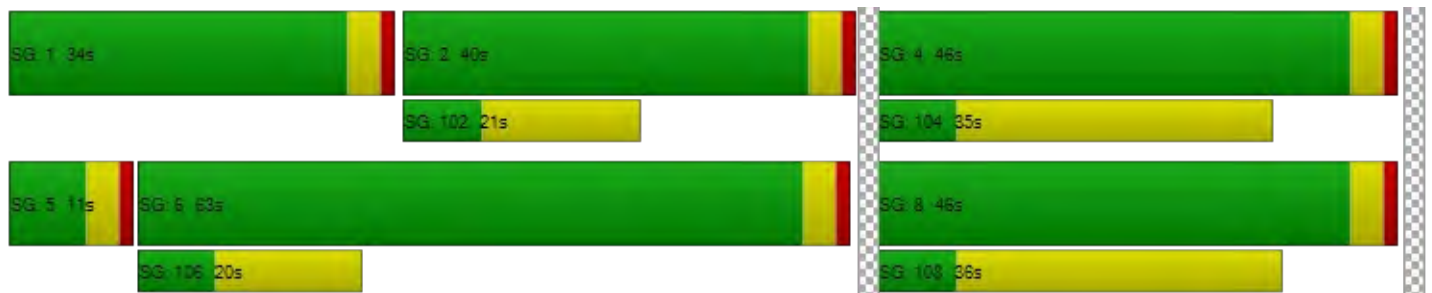
d_M, Delay for Movement [s/veh]	65.8	65.8	7.44	6.66	58.4	58.4	0.37	0.02	53.04	53.04	38.56	42.9	42.9	42.9	38.8	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	11.12				11.70				44.58				40.58			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	16.21															
Intersection LOS	B															
Intersection V/C	0.562															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.318				3.217				2.037				2.232			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	600				983				700				700			
d_b, Bicycle Delay [s]	29.40				15.50				25.35				25.35			
I_b,int, Bicycle LOS Score for Intersection	2.169				2.294				1.941				1.817			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.656

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	23	921	382	32	170	1143	24	11	14	34	8	578	9	139
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	25	994	412	35	183	1234	26	12	15	37	8	624	9	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9550	0.9550	0.9550	0.95	0.95	0.95	0.95
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	260	108	9	48	323	7	3	4	10	2	163	2	39
Total Analysis Volume [veh/h]	17	26	1041	431	37	192	1292	27	13	16	39	8	653	9	157
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	95.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	49	0	0	24	62	0	0	11	0	0	0	36	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	55	55	17	67	67	6	6	25	25	25
g / C, Green / Cycle	0.04	0.46	0.46	0.14	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_j Volume / Saturation Flow Rate	0.02	0.20	0.27	0.13	0.24	0.24	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1850	1829	1589	1781	1783	1589
c, Capacity [veh/h]	80	2337	729	254	1982	1030	96	83	379	379	338
d1, Uniform Delay [s]	54.32	8.67	9.29	44.89	2.05	2.05	54.74	55.22	45.81	45.81	41.27
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.24	0.24	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.62	3.50	11.08	0.71	1.35	1.74	4.03	13.62	13.54	0.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.45	0.59	0.90	0.44	0.44	0.30	0.47	0.88	0.88	0.46
d, Delay for Lane Group [s/veh]	59.85	9.29	12.79	55.98	2.75	3.40	56.48	59.25	59.43	59.35	42.27
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.60	3.87	6.68	1.04	1.27	0.90	1.25	11.07	11.07	4.16
50th-Percentile Queue Length [ft/ln]	33.71	64.91	96.72	166.92	25.97	31.64	22.47	31.25	276.81	276.78	104.12
95th-Percentile Queue Length [veh/ln]	2.43	4.67	6.96	10.91	1.87	2.28	1.62	2.25	16.53	16.53	7.50
95th-Percentile Queue Length [ft/ln]	60.68	116.84	174.10	272.86	46.75	56.95	40.45	56.25	413.24	413.20	187.42

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	9.29	12.7	55.9	55.9	2.97	3.40	56.48	56.48	59.25	59.4	59.3	59.3	42.2	
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	11.72				10.81				58.07				56.14			
Approach LOS	B				B				E				E			
d_I, Intersection Delay [s/veh]	21.44															
Intersection LOS	C															
Intersection V/C	0.656															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.212				1.989				2.502			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	750				967				117				533			
d_b, Bicycle Delay [s]	23.44				16.02				53.20				32.27			
I_b,int, Bicycle LOS Score for Intersection	2.379				2.305				1.672				2.911			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	33.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	2	38	369	271	0	136	551	121	109	1074	113	0	197	564	43
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	41	399	293	0	147	594	131	117	1160	122	0	212	609	46
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	1	10	101	74	0	37	151	33	30	295	31	0	54	155	12
Total Analysis Volume [veh/h]	2	42	405	298	0	149	604	133	119	1179	124	0	215	619	47
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	13	30	0	0	11	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	8	38	38	13	43	43
g / C, Green / Cycle	0.05	0.22	0.22	0.07	0.24	0.24	0.09	0.40	0.40	0.14	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.02	0.11	0.19	0.08	0.17	0.08	0.07	0.24	0.24	0.12	0.12	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1780	1781	3560	1803
c, Capacity [veh/h]	92	778	347	133	859	383	152	1415	708	252	1614	818
d1, Uniform Delay [s]	43.86	32.79	35.76	44.04	33.00	29.90	42.64	22.84	22.84	39.90	16.23	16.24
k, delay calibration	0.11	0.11	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.77	0.54	6.68	75.06	1.07	0.54	8.43	2.00	3.95	8.06	0.42	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.48	0.52	0.86	1.12	0.70	0.35	0.78	0.61	0.61	0.85	0.27	0.27
d, Delay for Lane Group [s/veh]	47.63	33.33	42.44	119.09	34.06	30.44	51.07	24.84	26.80	47.96	16.65	17.07
Lane Group LOS	D	C	D	F	C	C	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	4.01	6.99	5.79	6.20	2.48	2.98	7.47	7.86	5.24	2.82	2.97
50th-Percentile Queue Length [ft/ln]	26.91	100.36	174.85	144.85	155.11	62.06	74.58	186.86	196.48	130.94	70.61	74.33
95th-Percentile Queue Length [veh/ln]	1.94	7.23	11.33	10.10	10.29	4.47	5.37	11.96	12.46	8.99	5.08	5.35
95th-Percentile Queue Length [ft/ln]	48.45	180.64	283.27	252.57	257.23	111.72	134.25	298.95	311.42	224.78	127.11	133.79

**Movement, Approach, & Intersection Results**

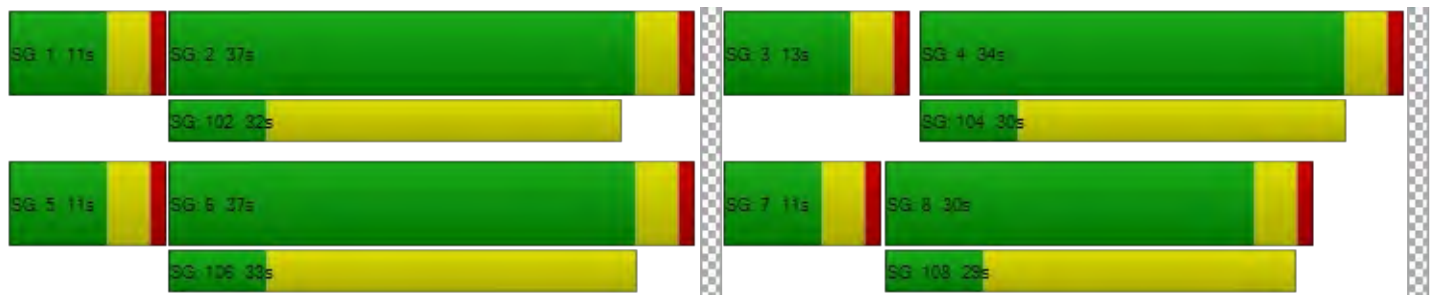
d_M, Delay for Movement [s/veh]	47.6	47.6	33.3	42.4	119.	119.	34.0	30.4	51.07	25.36	26.80	47.9	47.9	16.7	17.0	
Movement LOS	D	D	C	D	F	F	C	C	D	C	C	D	D	B	B	
d_A, Approach Delay [s/veh]	37.81				47.82				27.63				24.40			
Approach LOS	D				D				C				C			
d_I, Intersection Delay [s/veh]	33.38															
Intersection LOS	C															
Intersection V/C	0.694															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.821				2.771				3.059				3.120			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	695				695				547				632			
d_b, Bicycle Delay [s]	20.23				20.23				25.06				22.24			
I_b,int, Bicycle LOS Score for Intersection	2.141				2.168				2.342				2.044			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	37	457	415	349	1247	600	150
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	493	448	377	1346	648	162
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	133	121	102	363	175	44
Total Analysis Volume [veh/h]	43	532	483	407	1452	699	175
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	33	33	12	47	35	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0
Pedestrian Clearance [s]	0	22	0	0	24	24	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	20	56	32	32
g / C, Green / Cycle	0.20	0.20	0.25	0.70	0.40	0.40
(v / s)_j Volume / Saturation Flow Rate	0.17	0.17	0.23	0.41	0.20	0.11
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	710	578	442	2474	1413	631
d1, Uniform Delay [s]	30.33	30.53	29.35	6.30	18.13	16.37
k, delay calibration	0.11	0.11	0.16	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.27	3.29	11.78	1.03	1.24	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.81	0.84	0.92	0.59	0.49	0.28
d, Delay for Lane Group [s/veh]	32.60	33.82	41.13	7.33	19.37	17.46
Lane Group LOS	C	C	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.17	4.44	8.26	4.01	4.43	2.08
50th-Percentile Queue Length [ft/ln]	129.22	111.12	206.47	100.36	110.73	52.10
95th-Percentile Queue Length [veh/ln]	8.90	7.90	12.97	7.23	7.88	3.75
95th-Percentile Queue Length [ft/ln]	222.43	197.56	324.29	180.65	197.01	93.78



**Movement, Approach, & Intersection Results**

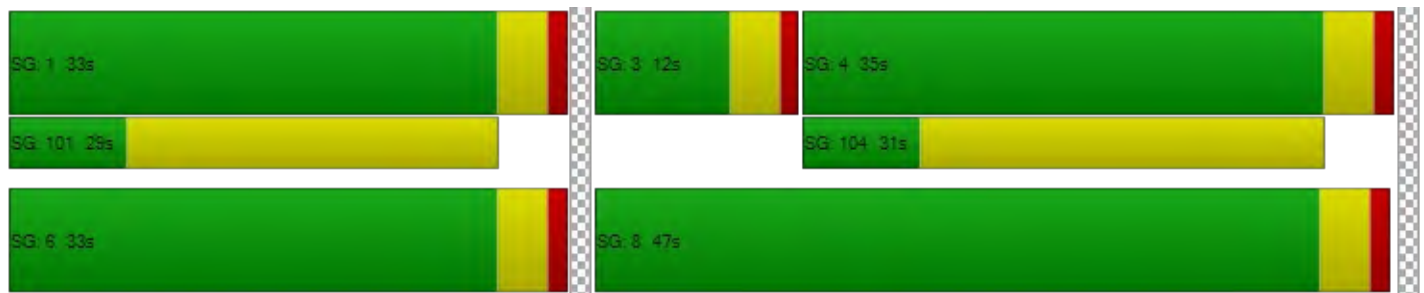
d_M, Delay for Movement [s/veh]	32.60	32.60	33.82	41.13	7.33	19.37	17.46
Movement LOS	C	C	C	D	A	B	B
d_A, Approach Delay [s/veh]	33.16			14.73		18.99	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	20.85						
Intersection LOS	C						
Intersection V/C	0.645						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.720	0.000	3.222
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	40.00	40.00	40.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.666	4.853
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑↑↑↑		↑↑↑		↑	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1179	11	0	1350	0	13
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1273	12	0	1457	0	14
Peak Hour Factor	0.9750	0.9750	1.0000	0.9750	1.0000	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	326	3	0	374	0	4
Total Analysis Volume [veh/h]	1306	12	0	1494	0	14
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.67
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	3.10
d_A, Approach Delay [s/veh]	0.00		0.00		15.67	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗↗↗		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	72	1374	66	0	813
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	77	1483	71	0	878
Peak Hour Factor	1.0000	0.9660	0.9660	0.9660	1.0000	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	20	384	18	0	227
Total Analysis Volume [veh/h]	0	80	1535	73	0	909
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**



V/C, Movement V/C Ratio	0.00	0.23	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	18.58	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.88	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	22.09	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.58		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					



**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	45.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.144

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	0	14	79	6	1393	45	104	798
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	15	85	6	1504	48	112	861
Peak Hour Factor	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	22	2	388	12	29	222
Total Analysis Volume [veh/h]	0	15	88	6	1554	50	116	889
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.14	0.26	0.02	0.02	0.00	0.29	0.01
d_M, Delay for Movement [s/veh]	45.29	45.29	19.27	17.32	0.00	0.00	17.47	0.00
Movement LOS	E	E	C	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.48	0.48	1.02	0.06	0.03	0.00	1.17	0.00
95th-Percentile Queue Length [ft/ln]	12.09	12.09	25.41	1.54	0.77	0.00	29.28	0.00
d_A, Approach Delay [s/veh]	23.06			0.06			2.02	
Approach LOS	C			A			A	
d_I, Intersection Delay [s/veh]	1.66							
Intersection LOS	E							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.295

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	35	845	154	1	39	881	103	39
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	913	166	1	42	951	111	42
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	237	43	0	11	246	29	11
Total Analysis Volume [veh/h]	39	946	172	1	44	985	115	44
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	14	64	0	0	13	63	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.05	0.77	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.19	0.11	0.03	0.19	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	76	3926	1225	81	3940	149	133
d1, Uniform Delay [s]	54.52	0.00	0.00	54.27	0.00	53.85	51.81
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.24	0.15	0.24	5.80	0.15	8.15	1.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.51	0.24	0.14	0.55	0.25	0.77	0.33
d, Delay for Lane Group [s/veh]	59.76	0.15	0.24	60.08	0.15	62.00	53.24
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.22	0.05	0.08	1.40	0.06	3.77	1.32
50th-Percentile Queue Length [ft/ln]	30.39	1.32	2.04	35.07	1.39	94.20	32.90
95th-Percentile Queue Length [veh/ln]	2.19	0.10	0.15	2.53	0.10	6.78	2.37
95th-Percentile Queue Length [ft/ln]	54.70	2.38	3.67	63.13	2.50	169.56	59.21



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.76	0.15	0.24	60.08	60.08	0.15	62.00	53.24
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	2.17			2.77			59.57	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	6.32							
Intersection LOS	A							
Intersection V/C	0.295							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.983	2.056
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.769	4.675	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	31.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.561

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	55	126	707	194	78	147	656	138	11	135	361	168	35	211	294	109
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	136	763	209	84	159	708	149	12	145	389	181	38	228	317	117
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	15	35	195	53	21	41	181	38	3	37	99	46	10	58	81	30
Total Analysis Volume [veh/h]	61	139	779	213	86	162	723	152	12	148	397	185	39	233	324	120
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	8.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	27	46	0	0	17	36	0	0	23	28	0	0	29	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	56	56	11	52	52	13	17	17	20	24	24
g / C, Green / Cycle	0.13	0.47	0.47	0.09	0.43	0.43	0.11	0.14	0.14	0.17	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.11	0.15	0.13	0.07	0.14	0.10	0.09	0.11	0.12	0.15	0.09	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	227	2392	747	304	2189	683	189	499	223	301	722	323
d1, Uniform Delay [s]	46.33	7.49	7.40	50.28	10.60	10.25	52.66	49.94	50.21	48.89	41.94	41.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.17	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.45	0.36	0.96	5.34	0.40	0.75	9.87	2.95	7.79	13.96	0.44	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.88	0.33	0.29	0.82	0.33	0.22	0.85	0.80	0.83	0.90	0.45	0.37
d, Delay for Lane Group [s/veh]	56.78	7.85	8.36	55.62	11.01	11.01	62.53	52.89	58.00	62.85	42.37	41.95
Lane Group LOS	E	A	A	E	B	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.88	1.73	1.54	3.62	2.13	1.40	5.13	5.81	5.74	8.92	4.14	3.05
50th-Percentile Queue Length [ft/ln]	146.91	43.18	38.47	90.53	53.16	35.03	128.27	145.33	143.46	222.90	103.60	76.25
95th-Percentile Queue Length [veh/ln]	9.85	3.11	2.77	6.52	3.83	2.52	8.85	9.77	9.67	13.81	7.46	5.49
95th-Percentile Queue Length [ft/ln]	246.30	77.73	69.25	162.95	95.69	63.05	221.14	244.19	241.67	345.32	186.48	137.26

**Movement, Approach, & Intersection Results**

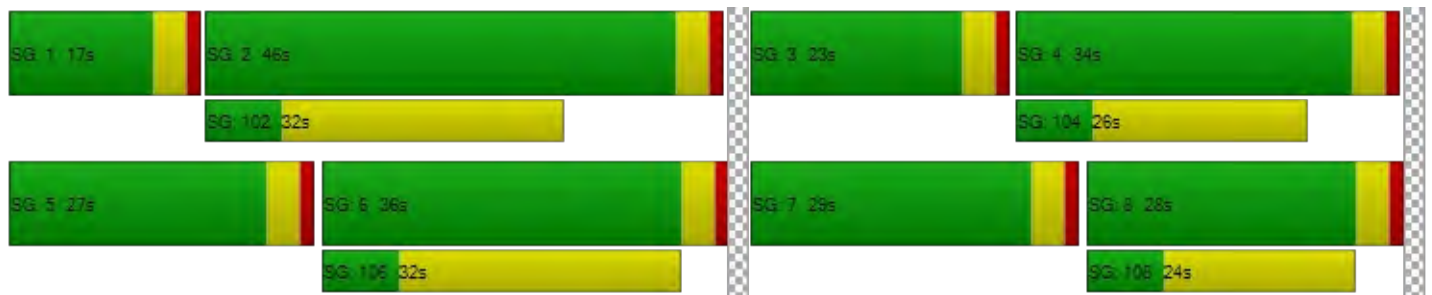
d_M, Delay for Movement [s/veh]	56.7	56.7	7.85	8.36	55.6	55.6	11.0	11.0	62.5	62.5	52.8	58.0	62.8	62.8	42.3	41.9
Movement LOS	E	E	A	A	E	E	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	16.15				20.86				56.24				50.08			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	31.88															
Intersection LOS	C															
Intersection V/C	0.561															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.071				3.227				2.987				2.919			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				533				400				500			
d_b, Bicycle Delay [s]	25.35				32.27				38.40				33.75			
I_b,int, Bicycle LOS Score for Intersection	2.182				2.088				2.050				1.958			
Bicycle LOS	B				B				B				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration									T			T			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	76	854	123	85	194	899	38	36	21	46	0	118	20	162
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	19	217	31	22	49	228	10	9	5	12	0	30	5	41
Total Analysis Volume [veh/h]	45	77	868	125	86	197	914	39	37	21	47	0	120	20	165
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	3.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	15	47	0	0	33	65	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	59	59	21	70	70	28	28	28	28
g / C, Green / Cycle	0.08	0.49	0.49	0.17	0.59	0.59	0.23	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.08	0.16	0.18	0.02	0.18	0.03	0.18	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	323	1589	766	1589
c, Capacity [veh/h]	146	2522	787	310	2989	933	124	367	233	367
d1, Uniform Delay [s]	50.99	5.74	5.47	41.75	0.56	0.55	49.72	36.55	43.13	39.58
k, delay calibration	0.11	0.50	0.50	0.18	0.50	0.50	0.16	0.11	0.17	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.55	0.37	0.43	16.02	0.27	0.08	4.07	0.16	3.86	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.83	0.34	0.16	0.91	0.31	0.04	0.47	0.13	0.60	0.45
d, Delay for Lane Group [s/veh]	62.54	6.11	5.90	57.77	0.82	0.63	53.79	36.71	46.99	40.44
Lane Group LOS	E	A	A	E	A	A	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.84	1.56	0.71	8.50	0.26	0.05	1.89	1.13	4.17	4.31
50th-Percentile Queue Length [ft/ln]	95.99	38.95	17.72	212.39	6.42	1.13	47.25	28.19	104.35	107.84
95th-Percentile Queue Length [veh/ln]	6.91	2.80	1.28	13.28	0.46	0.08	3.40	2.03	7.51	7.72
95th-Percentile Queue Length [ft/ln]	172.78	70.10	31.89	331.90	11.55	2.03	85.05	50.74	187.84	192.99

**Movement, Approach, & Intersection Results**

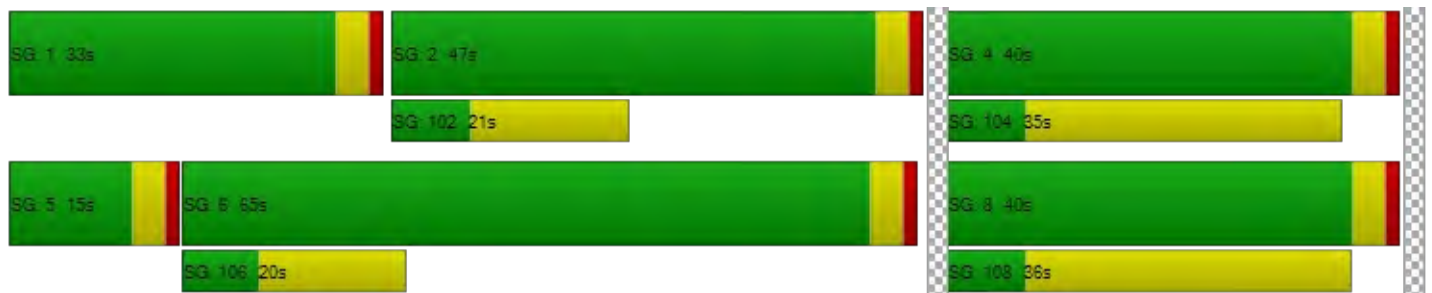
d_M, Delay for Movement [s/veh]	62.5	62.5	6.11	5.90	57.7	57.7	0.82	0.63	53.79	53.79	36.71	46.9	46.9	46.9	40.4	
Movement LOS	E	E	A	A	E	E	A	A	D	D	D	D	D	D	D	
d_A, Approach Delay [s/veh]	12.26				13.85				46.14				43.44			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	17.71															
Intersection LOS	B															
Intersection V/C	0.539															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.311				3.120				2.019				2.300			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	717				1017				600				600			
d_b, Bicycle Delay [s]	24.70				14.50				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.148				2.131				1.733				1.865			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	22.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	24	1044	549	25	137	882	28	20	5	32	7	612	8	142
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	26	1127	592	27	148	952	30	22	5	35	7	660	8	153
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9760	0.9760	0.9760	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	289	152	7	38	244	8	6	1	9	2	169	2	39
Total Analysis Volume [veh/h]	16	27	1155	607	28	152	975	31	23	5	36	7	676	8	157
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	36.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	12	59	0	0	17	64	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	59	59	13	67	67	6	6	26	26	26
g / C, Green / Cycle	0.04	0.49	0.49	0.11	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.38	0.10	0.19	0.19	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1841	1796	1589	1781	1783	1589
c, Capacity [veh/h]	80	2504	781	193	1976	1021	93	82	383	383	342
d1, Uniform Delay [s]	54.28	6.22	7.57	48.74	2.10	2.10	54.82	55.21	45.86	45.86	41.02
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.29	0.29	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.43	0.61	7.46	17.68	0.46	0.89	1.80	3.65	17.66	17.56	0.96
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.46	0.78	0.93	0.34	0.34	0.30	0.44	0.90	0.90	0.46
d, Delay for Lane Group [s/veh]	59.71	6.84	15.03	66.42	2.56	2.99	56.62	58.86	63.52	63.42	41.98
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.19	5.06	5.80	0.79	0.94	0.87	1.15	11.86	11.85	4.15
50th-Percentile Queue Length [ft/ln]	33.67	54.87	126.53	145.02	19.87	23.60	21.75	28.75	296.43	296.32	103.70
95th-Percentile Queue Length [veh/ln]	2.42	3.95	8.75	9.75	1.43	1.70	1.57	2.07	17.50	17.50	7.47
95th-Percentile Queue Length [ft/ln]	60.60	98.76	218.77	243.76	35.77	42.48	39.15	51.74	437.61	437.48	186.66

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.7	59.7	6.84	15.0	66.4	66.4	2.70	2.99	56.62	56.62	58.86	63.5	63.4	63.4	41.9
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	10.85			12.38			57.88			59.49					
Approach LOS	B			B			E			E					
d_I, Intersection Delay [s/veh]	22.65														
Intersection LOS	C														
Intersection V/C	0.750														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.182			1.989			2.538		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	917			1000			117			483		
d_b, Bicycle Delay [s]	17.60			15.00			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.538			2.128			1.665			2.947		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.341

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	1	38	215	168	1	42	207	69	65	443	56	2	100	397	41
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	41	232	181	1	45	224	74	70	478	61	2	108	428	44
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9730	0.9730	0.9730	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	11	60	47	0	12	58	19	18	123	16	1	28	110	11
Total Analysis Volume [veh/h]	1	42	238	186	1	46	230	76	72	491	63	2	111	440	45
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	12	33	0	0	14	35	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	14	14	5	14	14	6	53	53	8	54	54
g / C, Green / Cycle	0.05	0.14	0.14	0.05	0.15	0.15	0.06	0.55	0.55	0.08	0.57	0.57
(v / s)_j Volume / Saturation Flow Rate	0.02	0.07	0.12	0.03	0.06	0.05	0.04	0.10	0.11	0.06	0.09	0.09
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1764	1781	3560	1783
c, Capacity [veh/h]	91	517	231	95	525	235	113	1962	972	146	2028	1016
d1, Uniform Delay [s]	43.89	37.25	39.37	43.77	36.96	36.31	43.48	10.70	10.72	42.80	9.69	9.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.74	0.64	6.51	3.88	0.57	0.79	5.81	0.21	0.44	8.36	0.17	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.47	0.46	0.81	0.49	0.44	0.32	0.64	0.19	0.19	0.77	0.16	0.16
d, Delay for Lane Group [s/veh]	47.62	37.89	45.88	47.65	37.54	37.10	49.29	10.91	11.16	51.17	9.86	10.05
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	A	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.05	2.50	4.47	1.15	2.40	1.58	1.77	1.75	1.83	2.84	1.42	1.50
50th-Percentile Queue Length [ft/ln]	26.31	62.52	111.81	28.73	60.02	39.58	44.29	43.83	45.85	70.90	35.49	37.39
95th-Percentile Queue Length [veh/ln]	1.89	4.50	7.94	2.07	4.32	2.85	3.19	3.16	3.30	5.10	2.56	2.69
95th-Percentile Queue Length [ft/ln]	47.36	112.54	198.51	51.72	108.04	71.24	79.73	78.90	82.52	127.62	63.88	67.30

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	37.8	45.8	47.6	47.6	37.5	37.1	49.29	10.98	11.16	51.1	51.1	9.91	10.0	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	A	B	
d_A, Approach Delay [s/veh]	41.97				38.79				15.40				17.72			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	26.19															
Intersection LOS	C															
Intersection V/C	0.341															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.644				2.609				2.844				2.872			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	695				695				611				653			
d_b, Bicycle Delay [s]	20.23				20.23				22.93				21.56			
I_b,int, Bicycle LOS Score for Intersection	1.910				1.813				1.904				1.887			
Bicycle LOS	A				A				A				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	T T T T			T T		T T	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	23	111	278	304	544	508	88
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	119	300	329	587	548	95
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	32	81	89	159	149	26
Total Analysis Volume [veh/h]	27	129	326	357	637	595	103
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	17	56	35	35
g / C, Green / Cycle	0.15	0.15	0.23	0.75	0.46	0.46
(v / s)_j Volume / Saturation Flow Rate	0.05	0.12	0.20	0.18	0.17	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	515	419	407	2651	1648	736
d1, Uniform Delay [s]	28.49	30.77	27.96	2.98	13.01	11.58
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	3.16	6.15	0.21	0.62	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.30	0.78	0.88	0.24	0.36	0.14
d, Delay for Lane Group [s/veh]	28.82	33.94	34.11	3.20	13.62	11.98
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.20	2.84	6.19	0.67	2.78	0.90
50th-Percentile Queue Length [ft/ln]	30.03	71.05	154.67	16.74	69.52	22.38
95th-Percentile Queue Length [veh/ln]	2.16	5.12	10.27	1.21	5.01	1.61
95th-Percentile Queue Length [ft/ln]	54.05	127.89	256.64	30.13	125.13	40.29



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	28.82	28.82	33.94	34.11	3.20	13.62	11.98
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	32.28			14.30		13.38	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	17.99						
Intersection LOS	B						
Intersection V/C	0.525						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.510	0.000	2.744
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.952	4.708
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.086

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1054	13	0	1059	0	30
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1138	14	0	1143	0	32
Peak Hour Factor	0.9630	0.9630	1.0000	0.9630	1.0000	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	295	4	0	297	0	8
Total Analysis Volume [veh/h]	1182	15	0	1187	0	33
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	15.21
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.97
d_A, Approach Delay [s/veh]	0.00		0.00		15.21	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.21					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.108

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗↗↗		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	57	682	49	0	667
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	62	736	53	0	720
Peak Hour Factor	1.0000	0.9430	0.9430	0.9430	1.0000	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	16	195	14	0	191
Total Analysis Volume [veh/h]	0	66	780	56	0	764
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**



V/C, Movement V/C Ratio	0.00	0.11	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	11.63	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.36	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	9.07	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.63		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	B					



**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	8	71	13	683	43	85	648
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	8	76	14	737	46	92	699
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	20	4	195	12	24	185
Total Analysis Volume [veh/h]	1	8	80	15	779	49	97	739
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.03	0.13	0.04	0.01	0.00	0.12	0.01
d_M, Delay for Movement [s/veh]	20.60	20.60	11.80	14.97	0.00	0.00	10.13	0.00
Movement LOS	C	C	B	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.45	0.12	0.06	0.00	0.41	0.00
95th-Percentile Queue Length [ft/ln]	2.91	2.91	11.26	2.89	1.45	0.00	10.31	0.00
d_A, Approach Delay [s/veh]	12.69			0.27			1.17	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.32							
Intersection LOS	C							

**OPENING YEAR (2024) BASE WITH PROJECT**

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.319

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	32	953	129	3	32	810	96	41
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	6	0	0	25	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	1053	145	3	35	899	110	44
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	275	38	1	9	235	29	11
Total Analysis Volume [veh/h]	37	1099	151	3	37	938	115	46
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	66	0	0	11	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.04	0.78	0.08	0.08
(v / s)_j Volume / Saturation Flow Rate	0.02	0.22	0.09	0.02	0.18	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	74	3938	1229	77	3946	149	133
d1, Uniform Delay [s]	54.64	0.00	0.00	54.50	0.00	53.84	51.87
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	0.18	0.21	5.39	0.14	8.12	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.50	0.28	0.12	0.52	0.24	0.77	0.35
d, Delay for Lane Group [s/veh]	59.75	0.18	0.21	59.89	0.14	61.96	53.40
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.15	0.06	0.07	1.25	0.05	3.77	1.38
50th-Percentile Queue Length [ft/ln]	28.87	1.61	1.75	31.19	1.30	94.17	34.46
95th-Percentile Queue Length [veh/ln]	2.08	0.12	0.13	2.25	0.09	6.78	2.48
95th-Percentile Queue Length [ft/ln]	51.96	2.90	3.15	56.15	2.34	169.50	62.03

**Movement, Approach, & Intersection Results**

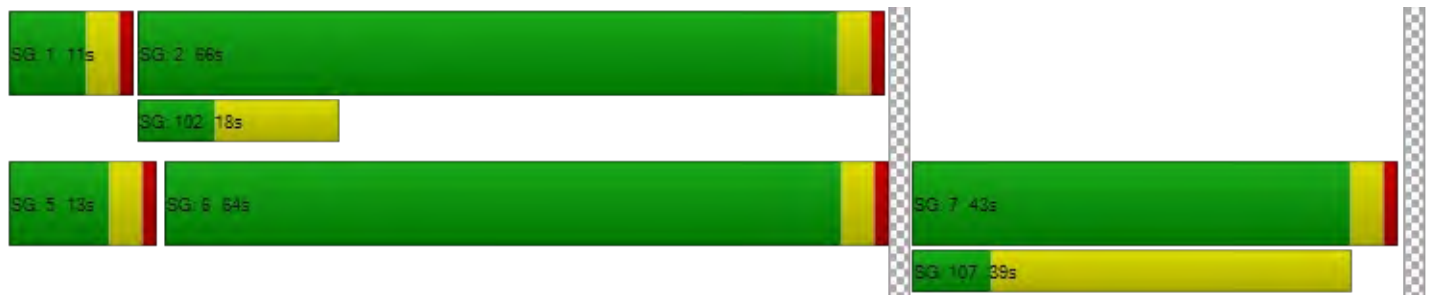
d_M, Delay for Movement [s/veh]	59.75	0.18	0.21	59.89	59.89	0.14	61.96	53.40
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.89			2.59			59.51	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	6.00							
Intersection LOS	A							
Intersection V/C	0.319							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.002	2.049
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.840	4.650	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	35	147	772	180	72	180	565	117	15	168	389	165	31	230	357	115
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	30	24	6	0	0	31	0	0	0	18	12	0	6	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	189	857	201	77	195	641	127	16	181	438	190	33	254	385	131
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	10	49	224	53	20	51	168	33	4	47	115	50	9	66	101	34
Total Analysis Volume [veh/h]	40	198	897	210	81	204	671	133	17	190	459	199	35	266	403	137
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	28	46	0	0	18	36	0	0	25	28	0	0	28	31	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	52	52	12	46	46	16	18	18	22	24	24
g / C, Green / Cycle	0.15	0.43	0.43	0.10	0.38	0.38	0.13	0.15	0.15	0.18	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.13	0.18	0.13	0.08	0.13	0.08	0.12	0.13	0.13	0.17	0.11	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	265	2198	686	341	1942	606	237	543	243	328	725	324
d1, Uniform Delay [s]	44.25	10.77	10.39	49.21	14.89	14.32	51.03	49.47	49.25	48.06	42.90	41.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.21	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.61	0.56	1.15	5.44	0.49	0.83	9.70	3.71	6.77	17.65	0.67	0.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.90	0.41	0.31	0.84	0.35	0.22	0.87	0.84	0.82	0.92	0.56	0.42
d, Delay for Lane Group [s/veh]	54.86	11.33	11.54	54.65	15.38	15.15	60.73	53.17	56.02	65.70	43.57	42.51
Lane Group LOS	D	B	B	D	B	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.87	2.67	1.97	4.11	2.58	1.58	6.58	6.79	6.07	10.17	5.29	3.52
50th-Percentile Queue Length [ft/ln]	171.83	66.70	49.29	102.81	64.57	39.50	164.38	169.64	151.84	254.20	132.22	88.11
95th-Percentile Queue Length [veh/ln]	11.17	4.80	3.55	7.40	4.65	2.84	10.78	11.06	10.12	15.40	9.06	6.34
95th-Percentile Queue Length [ft/ln]	279.32	120.06	88.72	185.05	116.23	71.09	269.52	276.45	252.88	384.94	226.51	158.59

**Movement, Approach, & Intersection Results**

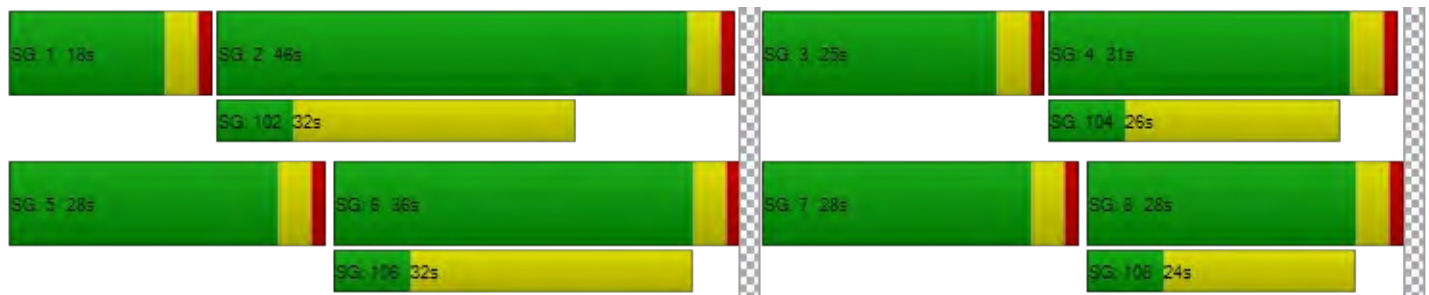
d_M, Delay for Movement [s/veh]	54.8	54.8	11.3	11.5	54.6	54.6	15.3	15.1	60.7	60.7	53.1	56.0	65.7	65.7	43.5	42.5
Movement LOS	D	D	B	B	D	D	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	19.07				25.63				55.64				51.32			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	34.98															
Intersection LOS	C															
Intersection V/C	0.604															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.092				3.243				3.032				2.966			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				533				400				450			
d_b, Bicycle Delay [s]	25.35				32.27				38.40				36.04			
I_b,int, Bicycle LOS Score for Intersection	2.277				2.046				2.116				2.034			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	25.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.677

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	31	0	49	0	0	0	0	0	0	29	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	9	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	119	901	169	88	218	842	27	48	18	90	0	144	15	219
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	32	242	45	24	59	226	7	13	5	24	0	39	4	59
Total Analysis Volume [veh/h]	34	128	969	182	95	234	905	29	52	19	97	0	155	16	235
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	67.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	17	42	0	0	32	57	0	0	46	0	0	0	46	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	45	45	24	56	56	40	40	40	40
g / C, Green / Cycle	0.10	0.37	0.37	0.20	0.47	0.47	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.19	0.11	0.18	0.18	0.02	0.24	0.06	0.27	0.15
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	290	1589	637	1589
c, Capacity [veh/h]	187	1893	591	353	2370	739	148	524	267	524
d1, Uniform Delay [s]	48.71	16.76	15.57	39.38	7.97	7.26	50.06	28.69	36.62	31.61
k, delay calibration	0.11	0.50	0.50	0.26	0.50	0.50	0.24	0.11	0.29	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.49	0.99	1.35	21.25	0.47	0.10	5.28	0.17	6.68	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.51	0.31	0.93	0.38	0.04	0.48	0.18	0.64	0.45
d, Delay for Lane Group [s/veh]	60.20	17.76	16.92	60.62	8.44	7.36	55.34	28.86	43.29	32.21
Lane Group LOS	E	B	B	E	A	A	E	C	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.95	4.12	2.34	10.23	2.12	0.20	2.34	2.06	5.09	5.51
50th-Percentile Queue Length [ft/ln]	123.83	102.98	58.38	255.69	53.00	5.03	58.60	51.42	127.20	137.81
95th-Percentile Queue Length [veh/ln]	8.60	7.41	4.20	15.47	3.82	0.36	4.22	3.70	8.79	9.36
95th-Percentile Queue Length [ft/ln]	215.08	185.37	105.08	386.81	95.40	9.05	105.48	92.55	219.68	234.07

**Movement, Approach, & Intersection Results**

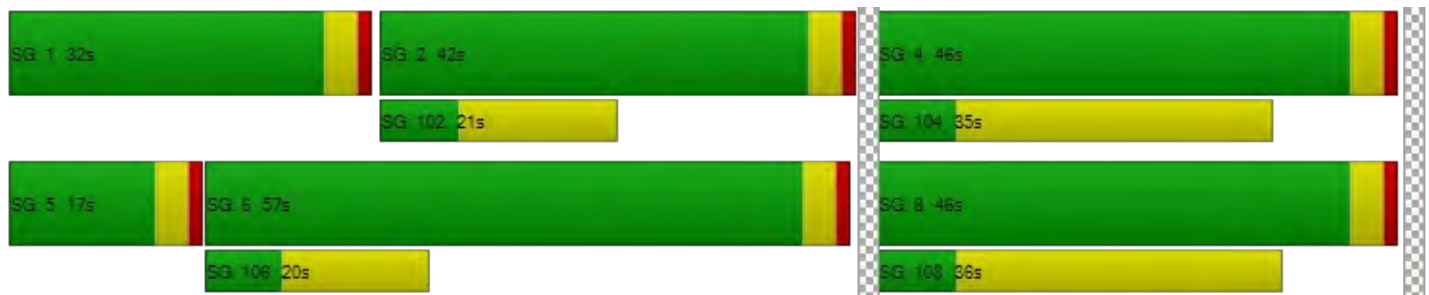
d_M, Delay for Movement [s/veh]	60.2	60.2	17.7	16.9	60.6	60.6	8.44	7.36	55.34	55.34	28.86	43.2	43.2	43.2	32.2	
Movement LOS	E	E	B	B	E	E	A	A	E	E	C	D	D	D	C	
d_A, Approach Delay [s/veh]	22.88				22.01				40.05				36.88			
Approach LOS	C				C				D				D			
d_I, Intersection Delay [s/veh]	25.25															
Intersection LOS	C															
Intersection V/C	0.677															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.396				3.171				2.046				2.402			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	633				883				700				700			
d_b, Bicycle Delay [s]	28.02				18.70				25.35				25.35			
I_b,int, Bicycle LOS Score for Intersection	2.263				2.126				1.837				1.974			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration					T				T			T			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	14	15	1027	409	19	140	872	33	20	17	39	11	542	20	161
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	25	0	0	6	23	0	0	0	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	16	1133	442	21	157	964	36	22	19	42	12	585	22	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9750	0.9750	0.9750	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	4	291	113	5	40	247	9	6	5	11	3	150	6	46
Total Analysis Volume [veh/h]	15	16	1162	453	22	161	989	37	23	19	43	12	600	23	185
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	11.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	54	0	0	22	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	59	59	14	69	69	7	7	24	24	24
g / C, Green / Cycle	0.04	0.49	0.49	0.12	0.57	0.57	0.05	0.05	0.20	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.02	0.23	0.28	0.10	0.19	0.19	0.02	0.03	0.18	0.18	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1836	1820	1589	1781	1787	1589
c, Capacity [veh/h]	68	2509	783	210	2037	1050	100	87	359	360	320
d1, Uniform Delay [s]	54.97	6.16	6.49	47.37	1.23	1.23	54.85	55.07	46.56	46.54	43.30
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.24	0.24	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.62	3.11	10.76	0.44	0.85	2.78	4.23	14.40	14.19	1.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.46	0.58	0.87	0.33	0.33	0.42	0.49	0.88	0.88	0.58
d, Delay for Lane Group [s/veh]	59.66	6.78	9.60	58.13	1.67	2.09	57.62	59.30	60.95	60.73	44.95
Lane Group LOS	E	A	A	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.18	3.11	5.47	0.53	0.67	1.32	1.38	10.60	10.60	5.12
50th-Percentile Queue Length [ft/ln]	24.45	54.60	77.87	136.67	13.36	16.79	32.93	34.43	264.96	264.91	127.95
95th-Percentile Queue Length [veh/ln]	1.76	3.93	5.61	9.30	0.96	1.21	2.37	2.48	15.94	15.93	8.83
95th-Percentile Queue Length [ft/ln]	44.00	98.28	140.17	232.54	24.05	30.22	59.28	61.98	398.44	398.37	220.70

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	6.78	9.60	58.1	58.1	1.80	2.09	57.62	57.62	59.30	60.9	60.8	60.7	44.9
Movement LOS	E	E	A	A	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	8.55			10.34			58.47			57.26					
Approach LOS	A			B			E			E					
d_I, Intersection Delay [s/veh]	20.88														
Intersection LOS	C														
Intersection V/C	0.635														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.189			1.998			2.499		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1017			117			483		
d_b, Bicycle Delay [s]	20.42			14.50			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.456			2.136			1.700			2.893		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	0	35	266	181	1	49	253	80	69	461	45	2	154	459	37
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	12	0	0	0	0	0	18	0	0	12	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	287	208	1	53	273	87	74	515	48	2	178	513	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.9630	0.9630	0.9630	0.96	0.96	0.96	0.96
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	10	75	54	0	14	71	23	19	134	12	1	46	133	10
Total Analysis Volume [veh/h]	0	39	298	216	1	55	283	90	77	535	50	2	185	533	42
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	13	39	0	0	11	37	0	11	33	0	0	12	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	16	16	5	17	17	6	46	46	12	52	52
g / C, Green / Cycle	0.05	0.17	0.17	0.06	0.17	0.17	0.06	0.48	0.48	0.13	0.54	0.54
(v / s)_j Volume / Saturation Flow Rate	0.02	0.08	0.14	0.03	0.08	0.06	0.04	0.11	0.11	0.11	0.11	0.11
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1790	1781	3560	1801
c, Capacity [veh/h]	87	589	263	103	623	278	116	1713	861	226	1935	979
d1, Uniform Delay [s]	44.03	36.16	38.34	43.59	35.18	34.33	43.49	14.37	14.39	40.51	11.11	11.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.62	0.67	6.29	4.35	0.52	0.67	6.45	0.31	0.62	7.48	0.23	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.45	0.51	0.82	0.54	0.45	0.32	0.67	0.23	0.23	0.83	0.20	0.20
d, Delay for Lane Group [s/veh]	47.65	36.83	44.63	47.94	35.70	35.00	49.94	14.68	15.01	47.99	11.34	11.57
Lane Group LOS	D	D	D	D	D	C	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.96	3.10	5.14	1.37	2.88	1.81	1.91	2.27	2.39	4.54	1.86	1.97
50th-Percentile Queue Length [ft/ln]	23.92	77.45	128.43	34.28	72.08	45.33	47.72	56.76	59.75	113.60	46.62	49.14
95th-Percentile Queue Length [veh/ln]	1.72	5.58	8.85	2.47	5.19	3.26	3.44	4.09	4.30	8.04	3.36	3.54
95th-Percentile Queue Length [ft/ln]	43.05	139.41	221.36	61.71	129.74	81.59	85.89	102.17	107.55	201.00	83.91	88.46

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	36.8	44.6	47.9	47.9	35.7	35.0	49.94	14.77	15.01	47.9	47.9	11.4	11.5
Movement LOS	D	D	D	D	D	D	D	C	D	B	B	D	D	B	B
d_A, Approach Delay [s/veh]	40.64				37.15				18.88		20.39				
Approach LOS	D				D				B		C				
d_I, Intersection Delay [s/veh]	27.62														
Intersection LOS	C														
Intersection V/C	0.418														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0		11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00		0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00		0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14		37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.687				2.638				2.873		2.924			
Crosswalk LOS	B				B				C		C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000		2000			
c_b, Capacity of the bicycle lane [bicycles/h]	737				695				611		632			
d_b, Bicycle Delay [s]	18.95				20.23				22.93		22.24			
I_b,int, Bicycle LOS Score for Intersection	1.984				1.868				1.924		1.978			
Bicycle LOS	A				A				A		A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.554

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	27	109	320	280	578	564	77
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	12	18	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	117	357	314	642	627	83
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	31	95	84	171	167	22
Total Analysis Volume [veh/h]	31	124	380	334	683	667	88
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	16	54	34	34
g / C, Green / Cycle	0.17	0.17	0.21	0.73	0.46	0.46
(v / s)_j Volume / Saturation Flow Rate	0.04	0.14	0.19	0.19	0.19	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	584	475	383	2580	1624	725
d1, Uniform Delay [s]	27.16	29.99	28.47	3.52	13.67	11.76
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	3.16	6.21	0.25	0.77	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.27	0.80	0.87	0.26	0.41	0.12
d, Delay for Lane Group [s/veh]	27.40	33.15	34.68	3.77	14.44	12.10
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.16	3.28	5.83	0.91	3.26	0.77
50th-Percentile Queue Length [ft/ln]	28.88	82.10	145.77	22.74	81.61	19.26
95th-Percentile Queue Length [veh/ln]	2.08	5.91	9.79	1.64	5.88	1.39
95th-Percentile Queue Length [ft/ln]	51.99	147.77	244.78	40.94	146.90	34.68

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.40	27.40	33.15	34.68	3.77	14.44	12.10
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	31.49			13.92		14.17	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	18.08						
Intersection LOS	B						
Intersection V/C	0.554						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.514	0.000	2.776
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.971	4.755
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.184

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1079	20	0	986	0	46
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	48	0	0	49	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	16	0	0	16	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1229	22	0	1129	0	65
Peak Hour Factor	0.9740	0.9740	1.0000	0.9740	1.0000	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	315	6	0	290	0	17
Total Analysis Volume [veh/h]	1262	23	0	1159	0	67
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.18
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	17.14
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.67
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	16.66
d_A, Approach Delay [s/veh]	0.00		0.00		17.14	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	C					



**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.207

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘		↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	91	718	81	0	728
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	6	18	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	4	2	6	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	114	783	112	0	802
Peak Hour Factor	1.0000	0.9420	0.9420	0.9420	1.0000	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	208	30	0	213
Total Analysis Volume [veh/h]	0	121	831	119	0	851
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0



**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.21	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.74	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.77	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	19.26	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.74		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	26.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.130

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	15	81	10	745	53	113	706
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	12	0	18	0	24	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	4	0	6	0	8	2
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	24	104	10	828	58	154	770
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	27	3	214	15	40	199
Total Analysis Volume [veh/h]	1	25	108	10	856	60	159	796
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.13	0.19	0.03	0.01	0.00	0.21	0.01
d_M, Delay for Movement [s/veh]	26.68	26.68	12.70	15.77	0.00	0.00	11.19	0.00
Movement LOS	D	D	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.46	0.46	0.69	0.09	0.04	0.00	0.81	0.00
95th-Percentile Queue Length [ft/ln]	11.50	11.50	17.14	2.24	1.12	0.00	20.29	0.00
d_A, Approach Delay [s/veh]	15.41			0.17			1.86	
Approach LOS	C			A			A	
d_I, Intersection Delay [s/veh]	1.99							
Intersection LOS	D							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.312

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	26	1003	182	2	0	1003	89	48
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	3	0	0	12	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	1094	200	2	0	1095	99	52
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	283	52	1	0	283	26	13
Total Analysis Volume [veh/h]	29	1133	207	2	0	1134	102	54
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	11	58	0	0	19	66	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	98	98	0	95	9	9
g / C, Green / Cycle	0.04	0.82	0.82	0.00	0.79	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.22	0.13	0.00	0.22	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	65	4176	1303	8	4013	135	121
d1, Uniform Delay [s]	55.22	0.00	0.00	59.39	0.00	54.34	53.03
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.16	0.26	17.66	0.18	8.19	2.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.27	0.16	0.27	0.28	0.75	0.45
d, Delay for Lane Group [s/veh]	60.05	0.16	0.26	77.05	0.18	62.53	55.61
Lane Group LOS	E	A	A	E	A	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.91	0.06	0.09	0.10	0.07	3.35	1.66
50th-Percentile Queue Length [ft/ln]	22.84	1.55	2.36	2.42	1.64	83.85	41.50
95th-Percentile Queue Length [veh/ln]	1.64	0.11	0.17	0.17	0.12	6.04	2.99
95th-Percentile Queue Length [ft/ln]	41.11	2.79	4.25	4.35	2.95	150.92	74.71

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.05	0.16	0.26	77.05	77.05	0.18	62.53	55.61
Movement LOS	E	A	A	E	E	A	E	E
d_A, Approach Delay [s/veh]	1.44			0.31			60.13	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	4.40							
Intersection LOS	A							
Intersection V/C	0.312							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.039	2.052
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.885	4.757	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.828

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	29	127	868	182	82	224	837	232	4	156	960	273	33	218	470	105
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	13	11	3	0	0	15	0	0	0	9	6	0	3	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	150	948	200	89	242	918	250	4	168	1045	301	36	238	508	116
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	0.92	0.92	0.92	0.92
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	41	256	54	24	65	248	68	1	45	282	81	10	64	137	31
Total Analysis Volume [veh/h]	34	162	1025	216	96	262	992	270	4	182	1130	325	39	257	549	125
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	19.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	19	37	0	0	18	36	0	0	18	42	0	0	23	47	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	33	33	14	32	32	14	38	38	19	43	43
g / C, Green / Cycle	0.12	0.28	0.28	0.12	0.27	0.27	0.12	0.32	0.32	0.16	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.11	0.20	0.14	0.10	0.19	0.17	0.10	0.30	0.20	0.17	0.15	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3740	1589	1781	3560	1589
c, Capacity [veh/h]	220	1406	439	404	1370	428	208	1180	502	282	1272	568
d1, Uniform Delay [s]	46.82	28.74	26.52	47.56	29.46	28.52	52.28	40.28	35.33	50.50	29.31	26.91
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.20	0.20	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	11.49	3.35	3.91	6.70	3.35	6.92	12.61	5.72	2.56	48.06	0.23	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.89	0.73	0.49	0.89	0.72	0.63	0.90	0.96	0.65	1.05	0.43	0.22
d, Delay for Lane Group [s/veh]	58.31	32.09	30.42	54.26	32.82	35.45	64.89	46.00	37.89	98.56	29.54	27.10
Lane Group LOS	E	C	C	D	C	D	E	D	D	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.85	7.02	4.24	5.12	6.88	5.79	6.10	16.53	8.22	11.97	5.84	2.45
50th-Percentile Queue Length [ft/ln]	146.29	175.42	106.05	128.06	172.07	144.75	152.57	413.15	205.57	299.23	145.98	61.36
95th-Percentile Queue Length [veh/ln]	9.82	11.36	7.62	8.83	11.19	9.74	10.15	23.19	12.93	18.06	9.80	4.42
95th-Percentile Queue Length [ft/ln]	245.46	284.02	190.49	220.85	279.64	243.41	253.86	579.82	323.14	451.49	245.05	110.44

**Movement, Approach, & Intersection Results**

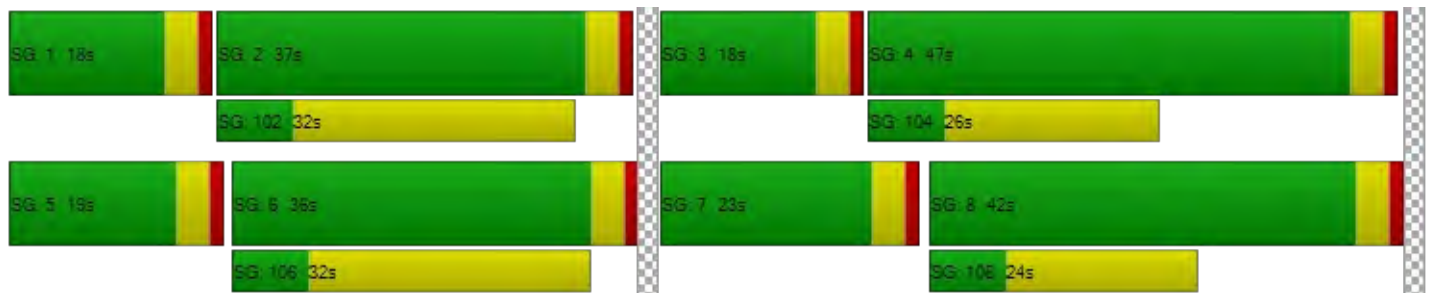
d_M, Delay for Movement [s/veh]	58.3	58.3	32.0	30.4	54.2	54.2	32.8	35.4	64.8	64.8	46.0	37.8	98.5	98.5	29.5	27.1
Movement LOS	E	E	C	C	D	D	C	D	E	E	D	D	F	F	C	C
d_A, Approach Delay [s/veh]	35.41				37.99				46.53				50.29			
Approach LOS	D				D				D				D			
d_I, Intersection Delay [s/veh]	41.92															
Intersection LOS	D															
Intersection V/C	0.828															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.167				3.316				3.219				3.146			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	550				533				633				717			
d_b, Bicycle Delay [s]	31.54				32.27				28.02				24.70			
I_b,int, Bicycle LOS Score for Intersection	2.331				2.307				2.763				2.148			
Bicycle LOS	B				B				C				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.627

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	15	0	24	0	0	0	0	0	0	14	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	15	0	24	0	0	0	0	0	0	13	0	22
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	54	971	107	109	234	1208	10	65	31	134	0	118	13	186
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	14	244	27	27	59	304	3	16	8	34	0	30	3	47
Total Analysis Volume [veh/h]	18	54	977	108	110	235	1215	10	65	31	135	0	119	13	187
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	33	0	0	31	53	0	0	56	0	0	0	56	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	49	49	25	67	67	35	35	35	35
g / C, Green / Cycle	0.05	0.40	0.40	0.21	0.56	0.56	0.29	0.29	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.04	0.19	0.07	0.19	0.24	0.01	0.21	0.08	0.21	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	457	1589	632	1589
c, Capacity [veh/h]	94	2062	643	367	2842	887	182	459	240	459
d1, Uniform Delay [s]	53.96	13.42	12.11	38.63	1.97	1.86	49.65	33.15	38.59	34.38
k, delay calibration	0.11	0.50	0.50	0.29	0.50	0.50	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.88	0.78	0.56	23.27	0.47	0.02	2.35	0.35	1.97	0.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.76	0.47	0.17	0.94	0.43	0.01	0.53	0.29	0.55	0.41
d, Delay for Lane Group [s/veh]	65.83	14.20	12.68	61.90	2.44	1.88	52.00	33.50	40.56	34.96
Lane Group LOS	E	B	B	E	A	A	D	C	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.36	3.48	1.13	10.88	0.90	0.02	2.97	3.15	3.68	4.53
50th-Percentile Queue Length [ft/ln]	59.09	87.02	28.19	271.91	22.53	0.60	74.14	78.72	92.01	113.32
95th-Percentile Queue Length [veh/ln]	4.25	6.27	2.03	16.29	1.62	0.04	5.34	5.67	6.62	8.02
95th-Percentile Queue Length [ft/ln]	106.37	156.63	50.74	407.13	40.56	1.09	133.45	141.70	165.61	200.61

**Movement, Approach, & Intersection Results**

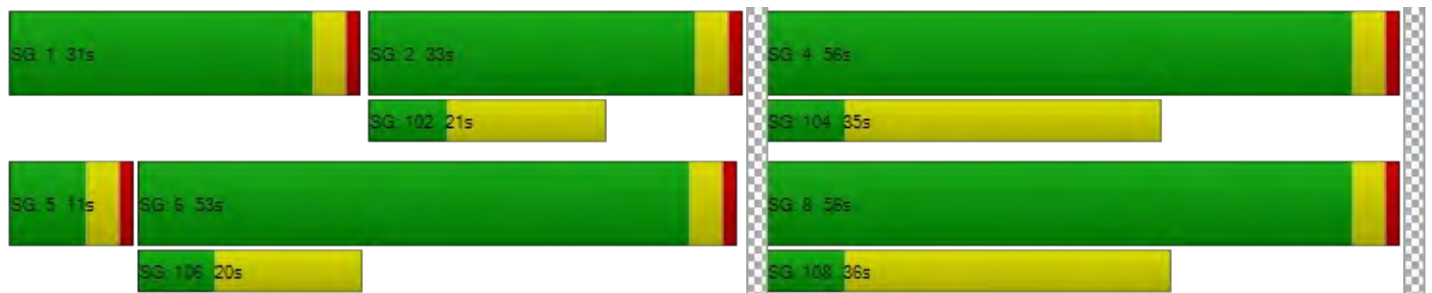
d_M, Delay for Movement [s/veh]	65.8	65.8	14.2	12.6	61.9	61.9	2.44	1.88	52.00	52.00	33.50	40.5	40.5	40.5	34.9	
Movement LOS	E	E	B	B	E	E	A	A	D	D	C	D	D	D	C	
d_A, Approach Delay [s/veh]	17.27				15.51				41.19				37.28			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	20.06															
Intersection LOS	C															
Intersection V/C	0.627															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.364				3.230				2.037				2.311			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	483				817				867				867			
d_b, Bicycle Delay [s]	34.50				21.00				19.27				19.27			
I_b,int, Bicycle LOS Score for Intersection	2.186				2.294				1.941				1.890			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	23	921	382	32	170	1143	24	11	14	34	8	578	9	139
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	0	3	11	0	0	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	25	1006	412	35	186	1245	26	12	15	37	8	624	9	153
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9550	0.9550	0.9550	0.95	0.95	0.95	0.95
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	263	108	9	49	326	7	3	4	10	2	163	2	40
Total Analysis Volume [veh/h]	17	26	1053	431	37	195	1304	27	13	16	39	8	653	9	160
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	21.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	49	0	0	24	62	0	0	11	0	0	0	36	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	55	55	17	67	67	6	6	25	25	25
g / C, Green / Cycle	0.04	0.46	0.46	0.14	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_j Volume / Saturation Flow Rate	0.02	0.21	0.27	0.13	0.25	0.25	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1851	1829	1589	1781	1783	1589
c, Capacity [veh/h]	80	2329	727	257	1982	1030	96	83	379	379	338
d1, Uniform Delay [s]	54.32	8.83	9.44	44.74	2.05	2.05	54.74	55.22	45.81	45.80	41.36
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.24	0.24	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.64	3.54	11.13	0.72	1.38	1.74	4.03	13.60	13.52	1.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.45	0.59	0.90	0.44	0.44	0.30	0.47	0.88	0.88	0.47
d, Delay for Lane Group [s/veh]	59.85	9.47	12.98	55.87	2.77	3.43	56.48	59.25	59.41	59.32	42.39
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.66	3.92	6.76	1.05	1.28	0.90	1.25	11.07	11.07	4.25
50th-Percentile Queue Length [ft/ln]	33.71	66.61	97.93	169.03	26.28	32.03	22.47	31.25	276.76	276.72	106.36
95th-Percentile Queue Length [veh/ln]	2.43	4.80	7.05	11.03	1.89	2.31	1.62	2.25	16.53	16.52	7.64
95th-Percentile Queue Length [ft/ln]	60.68	119.89	176.28	275.64	47.30	57.65	40.45	56.25	413.17	413.12	190.93

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	9.47	12.9	55.8	55.8	2.98	3.43	56.48	56.48	59.25	59.4	59.3	59.3	42.3	
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	11.88				10.84				58.07				56.09			
Approach LOS	B				B				E				E			
d_I, Intersection Delay [s/veh]	21.46															
Intersection LOS	C															
Intersection V/C	0.658															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.215				1.989				2.504			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	750				967				117				533			
d_b, Bicycle Delay [s]	23.44				16.02				53.20				32.27			
I_b,int, Bicycle LOS Score for Intersection	2.385				2.312				1.672				2.916			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	33.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	2	38	369	271	0	136	551	121	109	1074	113	0	197	564	43
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	6	0	0	0	0	0	9	0	0	5	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	41	399	299	0	147	594	131	117	1169	122	0	217	617	46
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	1	10	101	76	0	37	151	33	30	297	31	0	55	157	12
Total Analysis Volume [veh/h]	2	42	405	304	0	149	604	133	119	1188	124	0	221	627	47
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	13	30	0	0	11	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	21	21	7	23	23	8	37	37	14	43	43
g / C, Green / Cycle	0.05	0.22	0.22	0.07	0.24	0.24	0.09	0.39	0.39	0.14	0.45	0.45
(v / s)_j Volume / Saturation Flow Rate	0.02	0.11	0.19	0.08	0.17	0.08	0.07	0.25	0.25	0.12	0.13	0.13
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1781	1781	3560	1804
c, Capacity [veh/h]	92	791	353	133	872	389	152	1391	696	257	1601	811
d1, Uniform Delay [s]	43.86	32.48	35.59	44.04	32.68	29.61	42.65	23.42	23.42	39.75	16.47	16.49
k, delay calibration	0.11	0.11	0.13	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.77	0.51	7.12	75.06	1.00	0.52	8.44	2.16	4.27	8.13	0.43	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.48	0.51	0.86	1.12	0.69	0.34	0.78	0.63	0.63	0.86	0.28	0.28
d, Delay for Lane Group [s/veh]	47.63	33.00	42.72	119.09	33.68	30.13	51.09	25.58	27.69	47.89	16.91	17.35
Lane Group LOS	D	C	D	F	C	C	D	C	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.08	3.99	7.17	5.79	6.16	2.47	2.98	7.67	8.08	5.38	2.89	3.04
50th-Percentile Queue Length [ft/ln]	26.91	99.75	179.24	144.85	154.07	61.68	74.60	191.74	202.00	134.58	72.23	76.04
95th-Percentile Queue Length [veh/ln]	1.94	7.18	11.56	10.10	10.23	4.44	5.37	12.21	12.74	9.19	5.20	5.48
95th-Percentile Queue Length [ft/ln]	48.45	179.55	289.03	252.57	255.85	111.02	134.27	305.28	318.55	229.70	130.02	136.88

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	33.0	42.7	119.	119.	33.6	30.1	51.09	26.14	27.69	47.8	47.8	17.0	17.3	
Movement LOS	D	D	C	D	F	F	C	C	D	C	C	D	D	B	B	
d_A, Approach Delay [s/veh]	37.77				47.51				28.35				24.67			
Approach LOS	D				D				C				C			
d_I, Intersection Delay [s/veh]	33.59															
Intersection LOS	C															
Intersection V/C	0.704															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.824				2.771				3.063				3.126			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	695				695				547				632			
d_b, Bicycle Delay [s]	20.23				20.23				25.06				22.24			
I_b,int, Bicycle LOS Score for Intersection	2.146				2.168				2.347				2.052			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	37	457	415	349	1247	600	150
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	6	5	8	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	493	454	382	1354	657	162
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	133	122	103	365	177	44
Total Analysis Volume [veh/h]	43	532	490	412	1461	709	175
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	33	33	12	47	35	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0
Pedestrian Clearance [s]	0	22	0	0	24	24	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	20	55	31	31
g / C, Green / Cycle	0.21	0.21	0.25	0.69	0.39	0.39
(v / s)_j Volume / Saturation Flow Rate	0.17	0.17	0.23	0.41	0.20	0.11
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	719	585	444	2465	1400	625
d1, Uniform Delay [s]	30.14	30.42	29.37	6.43	18.41	16.57
k, delay calibration	0.11	0.11	0.17	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.11	3.29	12.83	1.06	1.31	1.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.84	0.93	0.59	0.51	0.28
d, Delay for Lane Group [s/veh]	32.25	33.71	42.21	7.49	19.72	17.68
Lane Group LOS	C	C	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.14	4.50	8.48	4.13	4.56	2.11
50th-Percentile Queue Length [ft/ln]	128.40	112.61	212.05	103.30	113.95	52.64
95th-Percentile Queue Length [veh/ln]	8.85	7.98	13.26	7.44	8.06	3.79
95th-Percentile Queue Length [ft/ln]	221.31	199.62	331.46	185.94	201.49	94.75

**Movement, Approach, & Intersection Results**

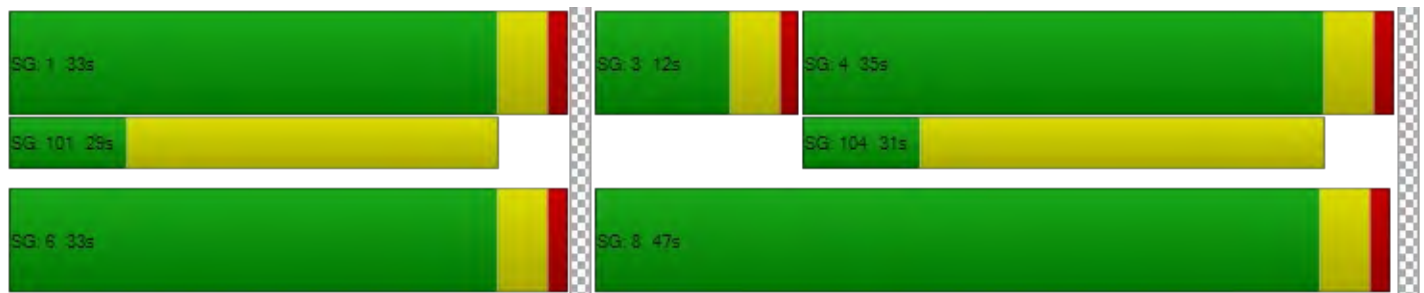
d_M, Delay for Movement [s/veh]	32.25	32.25	33.71	42.21	7.49	19.72	17.68
Movement LOS	C	C	C	D	A	B	B
d_A, Approach Delay [s/veh]	32.92			15.13		19.32	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	21.05						
Intersection LOS	C						
Intersection V/C	0.654						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	29.76	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.723	0.000	3.228
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	40.00	40.00	40.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.678	4.862
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1179	11	0	1350	0	13
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	0	0	24	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	22	0	0	24	0	6
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1317	12	0	1505	0	25
Peak Hour Factor	0.9750	0.9750	1.0000	0.9750	1.0000	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	338	3	0	386	0	6
Total Analysis Volume [veh/h]	1351	12	0	1544	0	26
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.47
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.25
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.18
d_A, Approach Delay [s/veh]	0.00		0.00		16.47	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.15					
Intersection LOS	C					



**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.262

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	72	1374	66	0	813
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	3	9	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	5	3	9	0	6
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	87	1489	89	0	890
Peak Hour Factor	1.0000	0.9660	0.9660	0.9660	1.0000	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	23	385	23	0	230
Total Analysis Volume [veh/h]	0	90	1541	92	0	921
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.26	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	19.19	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	1.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	25.84	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	19.19		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	52.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.227

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	0	14	79	6	1393	45	104	798
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	5	0	8	0	12	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	3	6	0	8	0	12	3
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	21	96	6	1520	48	136	867
Peak Hour Factor	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	25	2	393	12	35	224
Total Analysis Volume [veh/h]	0	22	99	6	1570	50	140	896
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.23	0.30	0.02	0.02	0.00	0.35	0.01
d_M, Delay for Movement [s/veh]	52.84	52.84	20.16	17.46	0.00	0.00	18.87	0.00
Movement LOS	F	F	C	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.81	0.81	1.21	0.06	0.03	0.00	1.55	0.00
95th-Percentile Queue Length [ft/ln]	20.31	20.31	30.16	1.55	0.78	0.00	38.83	0.00
d_A, Approach Delay [s/veh]	26.10			0.06			2.55	
Approach LOS	D			A			A	
d_I, Intersection Delay [s/veh]	2.12							
Intersection LOS	F							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	6.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.303

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	35	845	154	1	39	881	103	39
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	6	0	0	25	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	937	172	1	42	976	117	42
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	243	45	0	11	253	30	11
Total Analysis Volume [veh/h]	39	971	178	1	44	1011	121	44
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	14	64	0	0	13	63	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	92	92	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.05	0.77	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.02	0.19	0.11	0.03	0.20	0.07	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	76	3908	1220	81	3923	155	139
d1, Uniform Delay [s]	54.52	0.00	0.00	54.27	0.00	53.64	51.42
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.24	0.15	0.25	5.80	0.16	8.19	1.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.51	0.25	0.15	0.55	0.26	0.78	0.32
d, Delay for Lane Group [s/veh]	59.76	0.15	0.25	60.08	0.16	61.83	52.72
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.22	0.06	0.09	1.40	0.06	3.96	1.31
50th-Percentile Queue Length [ft/ln]	30.39	1.38	2.13	35.07	1.45	99.02	32.69
95th-Percentile Queue Length [veh/ln]	2.19	0.10	0.15	2.53	0.10	7.13	2.35
95th-Percentile Queue Length [ft/ln]	54.70	2.48	3.84	63.13	2.60	178.23	58.84

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.76	0.15	0.25	60.08	60.08	0.16	61.83	52.72
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	2.12			2.71			59.40	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	6.30							
Intersection LOS	A							
Intersection V/C	0.303							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.992	2.059
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.786	4.689	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	55	126	707	194	78	147	656	138	11	135	361	168	35	211	294	109
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	30	24	6	0	0	31	0	0	0	19	13	0	7	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	166	787	215	84	159	739	149	12	145	408	194	38	235	317	123
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	15	42	201	55	21	41	189	38	3	37	104	50	10	60	81	31
Total Analysis Volume [veh/h]	61	170	804	220	86	162	755	152	12	148	417	198	39	240	324	126
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	7.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	28	47	0	0	17	36	0	0	23	28	0	0	28	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	55	55	11	48	48	13	18	18	21	26	26
g / C, Green / Cycle	0.14	0.46	0.46	0.09	0.40	0.40	0.11	0.15	0.15	0.17	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.13	0.16	0.14	0.07	0.15	0.10	0.09	0.12	0.12	0.16	0.09	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	258	2331	727	304	2041	637	190	528	236	307	763	341
d1, Uniform Delay [s]	44.61	8.45	8.33	50.25	13.25	12.70	52.60	49.29	49.71	48.70	40.75	40.23
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.18	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	10.46	0.41	1.07	5.28	0.52	0.88	9.57	2.68	7.79	14.92	0.38	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.89	0.34	0.30	0.81	0.37	0.24	0.84	0.79	0.84	0.91	0.42	0.37
d, Delay for Lane Group [s/veh]	55.08	8.85	9.40	55.53	13.77	13.59	62.17	51.97	57.50	63.62	41.13	40.90
Lane Group LOS	E	A	A	E	B	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.68	1.96	1.74	3.62	2.65	1.65	5.12	6.06	6.13	9.22	4.07	3.16
50th-Percentile Queue Length [ft/ln]	166.90	49.04	43.51	90.46	66.25	41.26	127.91	151.55	153.19	230.51	101.81	79.00
95th-Percentile Queue Length [veh/ln]	10.91	3.53	3.13	6.51	4.77	2.97	8.83	10.10	10.19	14.20	7.33	5.69
95th-Percentile Queue Length [ft/ln]	272.84	88.27	78.33	162.82	119.24	74.27	220.64	252.50	254.68	355.01	183.26	142.19

**Movement, Approach, & Intersection Results**

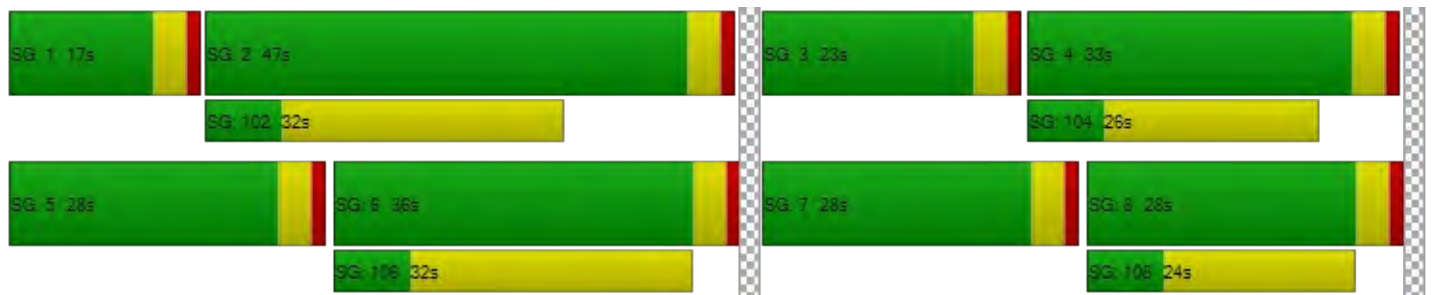
d_M, Delay for Movement [s/veh]	55.0	55.0	8.85	9.40	55.5	55.5	13.7	13.5	62.1	62.1	51.9	57.5	63.6	63.6	41.1	40.9
Movement LOS	E	E	A	A	E	E	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	17.46				22.71				55.49				49.69			
Approach LOS	B				C				E				D			
d_I, Intersection Delay [s/veh]	32.54															
Intersection LOS	C															
Intersection V/C	0.599															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.087				3.234				2.999				2.927			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	717				533				400				483			
d_b, Bicycle Delay [s]	24.70				32.27				38.40				34.50			
I_b,int, Bicycle LOS Score for Intersection	2.216				2.106				2.077				1.963			
Bicycle LOS	B				B				B				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	31	0	51	0	0	0	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	11	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	76	854	164	85	261	899	38	36	21	46	0	160	20	226
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	19	217	42	22	66	228	10	9	5	12	0	41	5	57
Total Analysis Volume [veh/h]	45	77	868	167	86	265	914	39	37	21	47	0	163	20	230
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	65.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	15	41	0	0	35	61	0	0	44	0	0	0	44	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	47	47	25	63	63	35	35	35	35
g / C, Green / Cycle	0.08	0.39	0.39	0.21	0.52	0.52	0.30	0.30	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.07	0.17	0.11	0.20	0.18	0.02	0.24	0.03	0.25	0.14
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	241	1589	727	1589
c, Capacity [veh/h]	146	2007	626	376	2663	831	120	469	271	469
d1, Uniform Delay [s]	50.99	14.17	13.38	38.10	3.94	3.71	47.58	30.73	39.64	34.87
k, delay calibration	0.11	0.50	0.50	0.28	0.50	0.50	0.26	0.11	0.28	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.55	0.68	1.04	21.78	0.35	0.11	6.95	0.09	7.34	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.83	0.43	0.27	0.93	0.34	0.05	0.48	0.10	0.67	0.49
d, Delay for Lane Group [s/veh]	62.54	14.85	14.42	59.87	4.29	3.81	54.53	30.82	46.97	35.66
Lane Group LOS	E	B	B	E	A	A	D	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.84	3.23	1.90	10.86	1.20	0.16	1.99	1.02	5.64	5.70
50th-Percentile Queue Length [ft/ln]	95.99	80.84	47.60	271.49	29.93	4.02	49.68	25.52	140.98	142.62
95th-Percentile Queue Length [veh/ln]	6.91	5.82	3.43	16.26	2.15	0.29	3.58	1.84	9.53	9.62
95th-Percentile Queue Length [ft/ln]	172.78	145.52	85.68	406.60	53.87	7.23	89.43	45.94	238.34	240.54

**Movement, Approach, & Intersection Results**

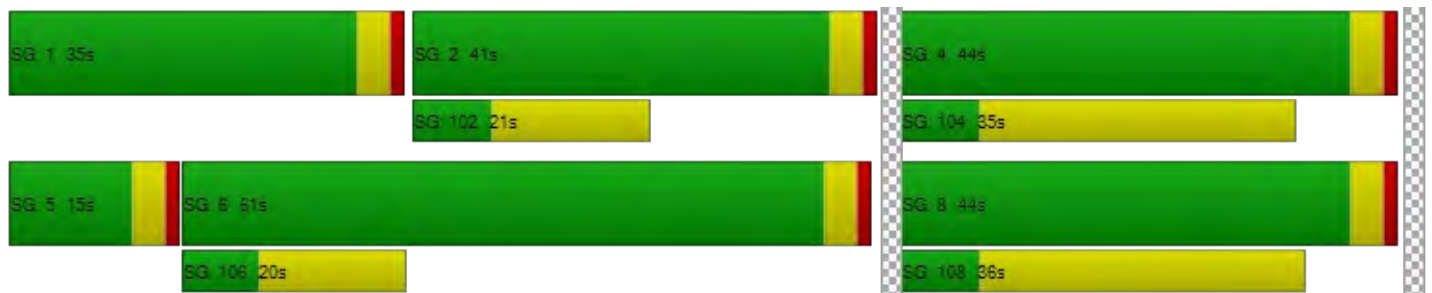
d_M, Delay for Movement [s/veh]	62.5	62.5	14.8	14.4	59.8	59.8	4.29	3.81	54.53	54.53	30.82	46.9	46.9	46.9	35.6	
Movement LOS	E	E	B	B	E	E	A	A	D	D	C	D	D	D	D	
d_A, Approach Delay [s/veh]	19.81				19.24				43.92				40.67			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	23.30															
Intersection LOS	C															
Intersection V/C	0.652															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.383				3.139				2.019				2.420			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	617				950				667				667			
d_b, Bicycle Delay [s]	28.70				16.54				26.67				26.67			
I_b,int, Bicycle LOS Score for Intersection	2.171				2.131				1.733				1.972			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	22.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.753

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	24	1044	549	25	137	882	28	20	5	32	7	612	8	142
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	25	0	0	6	25	0	0	0	0	0	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	26	1152	592	27	154	977	30	22	5	35	7	660	8	159
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9760	0.9760	0.9760	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	295	152	7	39	250	8	6	1	9	2	169	2	41
Total Analysis Volume [veh/h]	16	27	1180	607	28	158	1001	31	23	5	36	7	676	8	163
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	35.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	59	0	0	17	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	59	59	13	67	67	6	6	26	26	26
g / C, Green / Cycle	0.04	0.49	0.49	0.11	0.56	0.56	0.05	0.05	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.38	0.10	0.19	0.19	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1841	1796	1589	1781	1783	1589
c, Capacity [veh/h]	80	2504	781	193	1976	1022	93	82	383	384	342
d1, Uniform Delay [s]	54.32	6.25	7.57	48.93	2.09	2.09	54.82	55.21	45.86	45.85	41.18
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.29	0.29	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.64	7.47	22.57	0.48	0.92	1.80	3.65	17.62	17.53	1.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.47	0.78	0.96	0.34	0.34	0.30	0.44	0.90	0.90	0.48
d, Delay for Lane Group [s/veh]	59.85	6.89	15.04	71.51	2.57	3.02	56.62	58.86	63.48	63.38	42.22
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.25	5.06	6.24	0.82	0.97	0.87	1.15	11.85	11.85	4.33
50th-Percentile Queue Length [ft/ln]	33.71	56.26	126.61	156.03	20.41	24.28	21.75	28.75	296.33	296.21	108.17
95th-Percentile Queue Length [veh/ln]	2.43	4.05	8.76	10.34	1.47	1.75	1.57	2.07	17.50	17.49	7.74
95th-Percentile Queue Length [ft/ln]	60.68	101.27	218.88	258.46	36.74	43.70	39.15	51.74	437.49	437.34	193.46

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	6.89	15.0	71.5	71.5	2.71	3.02	56.62	56.62	58.86	63.4	63.4	63.3	42.2
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	10.84			13.23			57.88			59.38					
Approach LOS	B			B			E			E					
d_I, Intersection Delay [s/veh]	22.78														
Intersection LOS	C														
Intersection V/C	0.753														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.190			1.989			2.541		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	917			1017			117			483		
d_b, Bicycle Delay [s]	17.60			14.50			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.551			2.143			1.665			2.957		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.361

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	1	38	215	168	1	42	207	69	65	443	56	2	100	397	41
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	13	0	0	0	0	0	19	0	0	12	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	41	232	194	1	45	224	74	70	497	61	2	120	446	44
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9730	0.9730	0.9730	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	11	60	50	0	12	58	19	18	128	16	1	31	115	11
Total Analysis Volume [veh/h]	1	42	238	199	1	46	230	76	72	511	63	2	123	458	45
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	12	33	0	0	14	35	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	15	15	5	15	15	6	51	51	8	53	53
g / C, Green / Cycle	0.05	0.15	0.15	0.05	0.16	0.16	0.06	0.54	0.54	0.09	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.02	0.07	0.13	0.03	0.06	0.05	0.04	0.11	0.11	0.07	0.09	0.09
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1768	1781	3560	1786
c, Capacity [veh/h]	91	546	244	95	555	248	113	1905	946	160	1998	1003
d1, Uniform Delay [s]	43.89	36.54	38.98	43.77	36.25	35.61	43.48	11.52	11.54	42.40	10.10	10.12
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	3.74	0.55	6.55	3.88	0.50	0.69	5.81	0.24	0.49	8.06	0.18	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.47	0.44	0.82	0.49	0.41	0.31	0.64	0.20	0.20	0.78	0.17	0.17
d, Delay for Lane Group [s/veh]	47.62	37.09	45.53	47.65	36.75	36.31	49.29	11.76	12.03	50.46	10.28	10.48
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.05	2.47	4.77	1.15	2.37	1.56	1.77	1.92	2.00	3.11	1.52	1.60
50th-Percentile Queue Length [ft/ln]	26.31	61.72	119.33	28.73	59.26	39.05	44.29	47.90	50.10	77.80	37.96	39.98
95th-Percentile Queue Length [veh/ln]	1.89	4.44	8.36	2.07	4.27	2.81	3.19	3.45	3.61	5.60	2.73	2.88
95th-Percentile Queue Length [ft/ln]	47.36	111.09	208.91	51.72	106.67	70.28	79.73	86.23	90.18	140.04	68.34	71.97

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	47.6	47.6	37.0	45.5	47.6	47.6	36.7	36.3	49.29	11.83	12.03	50.4	50.4	10.3	10.4	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	B	B	
d_A, Approach Delay [s/veh]	41.53				38.10				16.02				18.33			
Approach LOS	D				D				B				B			
d_I, Intersection Delay [s/veh]	26.22															
Intersection LOS	C															
Intersection V/C	0.361															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.649				2.609				2.851				2.885			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	695				695				611				653			
d_b, Bicycle Delay [s]	20.23				20.23				22.93				21.56			
I_b,int, Bicycle LOS Score for Intersection	1.921				1.813				1.915				1.904			
Bicycle LOS	A				A				A				A			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	18.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.545

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	23	111	278	304	544	508	88
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	13	12	18	19	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	119	313	341	605	567	95
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	32	85	93	164	154	26
Total Analysis Volume [veh/h]	27	129	340	370	657	616	103
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	18	56	34	34
g / C, Green / Cycle	0.15	0.15	0.24	0.74	0.45	0.45
(v / s)_j Volume / Saturation Flow Rate	0.05	0.12	0.21	0.18	0.17	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	533	433	419	2633	1605	716
d1, Uniform Delay [s]	28.14	30.57	27.71	3.13	13.70	12.11
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	3.16	6.23	0.23	0.70	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.29	0.78	0.88	0.25	0.38	0.14
d, Delay for Lane Group [s/veh]	28.45	33.73	33.94	3.35	14.39	12.53
Lane Group LOS	C	C	C	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.19	2.96	6.40	0.74	3.00	0.93
50th-Percentile Queue Length [ft/ln]	29.78	73.93	160.05	18.50	75.05	23.14
95th-Percentile Queue Length [veh/ln]	2.14	5.32	10.55	1.33	5.40	1.67
95th-Percentile Queue Length [ft/ln]	53.60	133.08	263.79	33.30	135.10	41.66

**Movement, Approach, & Intersection Results**

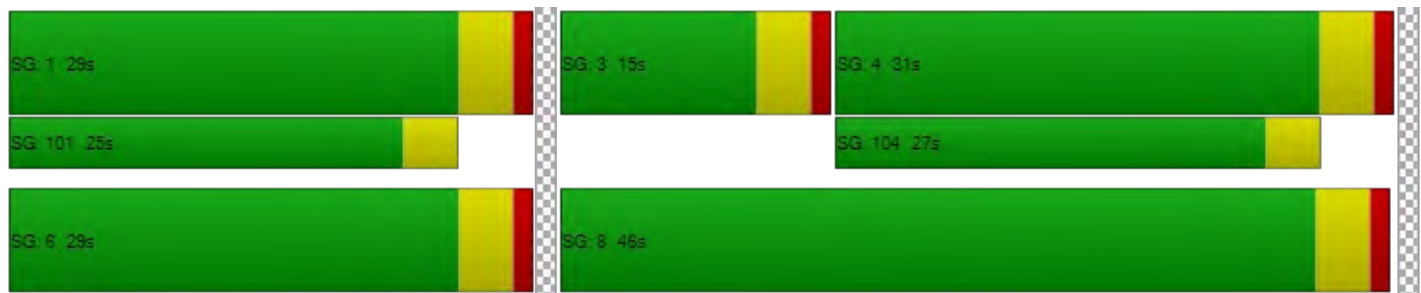
d_M, Delay for Movement [s/veh]	28.45	28.45	33.73	33.94	3.35	14.39	12.53
Movement LOS	C	C	C	C	A	B	B
d_A, Approach Delay [s/veh]	32.07			14.37		14.13	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	18.21						
Intersection LOS	B						
Intersection V/C	0.545						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.517	0.000	2.757
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	4.980	4.726
Bicycle LOS	D	E	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1054	13	0	1059	0	30
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	48	0	0	51	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	16	0	0	16	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1202	14	0	1210	0	48
Peak Hour Factor	0.9630	0.9630	1.0000	0.9630	1.0000	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	312	4	0	314	0	12
Total Analysis Volume [veh/h]	1248	15	0	1256	0	50
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.14
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.35
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.47
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	11.69
d_A, Approach Delay [s/veh]	0.00		0.00		16.35	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	C					



**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗			
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	57	682	49	0	667
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	6	19	0	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	4	2	6	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	78	744	78	0	737
Peak Hour Factor	1.0000	0.9430	0.9430	0.9430	1.0000	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	21	197	21	0	195
Total Analysis Volume [veh/h]	0	83	789	83	0	782
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.14	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	11.90	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.47	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	11.85	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.90		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	8	71	13	683	43	85	648
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	12	0	18	0	26	7
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	4	0	6	0	8	2
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	16	92	14	761	46	126	708
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	24	4	201	12	33	187
Total Analysis Volume [veh/h]	1	17	97	15	804	49	133	748
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.08	0.16	0.04	0.01	0.00	0.17	0.01
d_M, Delay for Movement [s/veh]	23.32	23.32	12.18	15.12	0.00	0.00	10.55	0.00
Movement LOS	C	C	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.58	0.12	0.06	0.00	0.61	0.00
95th-Percentile Queue Length [ft/ln]	6.80	6.80	14.39	2.94	1.47	0.00	15.26	0.00
d_A, Approach Delay [s/veh]	13.93			0.26			1.59	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.73							
Intersection LOS	C							

**OPENING YEAR (2024) WITHOUT PROJECT**

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	5.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.324

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	32	953	129	3	32	810	96	41
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	56	2	0	0	37	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	1085	141	3	35	911	107	44
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	283	37	1	9	238	28	11
Total Analysis Volume [veh/h]	37	1133	147	3	37	951	112	46
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	66	0	0	11	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.78	0.78	0.04	0.78	0.08	0.08
(v / s)_j Volume / Saturation Flow Rate	0.02	0.22	0.09	0.02	0.19	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	74	3947	1232	77	3954	146	130
d1, Uniform Delay [s]	54.64	0.00	0.00	54.50	0.00	53.95	52.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	0.18	0.20	5.39	0.14	8.09	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.50	0.29	0.12	0.52	0.24	0.77	0.35
d, Delay for Lane Group [s/veh]	59.75	0.18	0.20	59.89	0.14	62.04	53.67
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.15	0.07	0.07	1.25	0.05	3.67	1.38
50th-Percentile Queue Length [ft/ln]	28.87	1.68	1.69	31.19	1.32	91.76	34.57
95th-Percentile Queue Length [veh/ln]	2.08	0.12	0.12	2.25	0.09	6.61	2.49
95th-Percentile Queue Length [ft/ln]	51.96	3.02	3.05	56.15	2.37	165.16	62.23

**Movement, Approach, & Intersection Results**

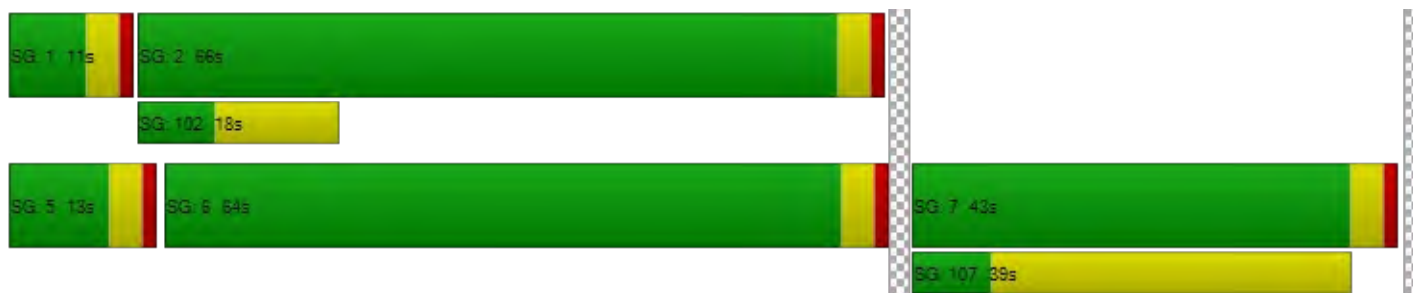
d_M, Delay for Movement [s/veh]	59.75	0.18	0.20	59.89	59.89	0.14	62.04	53.67
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.86			2.56			59.60	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	5.84							
Intersection LOS	A							
Intersection V/C	0.324							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.011	2.047
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.857	4.657	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	36.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	35	147	772	180	72	180	565	117	15	168	389	165	31	230	357	115
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	48	41	0	3	29	8	0	6	42	26	0	28	37	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	204	881	236	77	198	639	135	16	187	462	204	33	276	422	129
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	10	53	231	62	20	52	167	35	4	49	121	53	9	72	110	34
Total Analysis Volume [veh/h]	40	214	923	247	81	207	669	141	17	196	484	214	35	289	442	135
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	10.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	28	46	0	0	18	36	0	0	25	28	0	0	28	31	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	50	50	12	43	43	16	19	19	24	26	26
g / C, Green / Cycle	0.16	0.41	0.41	0.10	0.36	0.36	0.14	0.16	0.16	0.20	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.16	0.08	0.13	0.09	0.12	0.14	0.13	0.18	0.12	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	280	2102	656	343	1806	564	243	565	252	349	778	347
d1, Uniform Delay [s]	43.41	12.52	12.23	49.14	17.52	16.88	50.84	49.14	49.07	47.41	41.84	40.05
k, delay calibration	0.14	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.25	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	12.90	0.67	1.65	5.47	0.58	1.06	9.77	3.87	7.98	20.51	0.66	0.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.91	0.44	0.38	0.84	0.37	0.25	0.88	0.86	0.85	0.93	0.57	0.39
d, Delay for Lane Group [s/veh]	56.32	13.19	13.88	54.61	18.11	17.94	60.61	53.01	57.05	67.92	42.50	40.76
Lane Group LOS	E	B	B	D	B	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.47	3.10	2.65	4.15	2.93	1.90	6.76	7.16	6.61	11.19	5.74	3.39
50th-Percentile Queue Length [ft/ln]	186.85	77.54	66.26	103.82	73.19	47.61	169.11	179.05	165.37	279.77	143.62	84.65
95th-Percentile Queue Length [veh/ln]	11.96	5.58	4.77	7.48	5.27	3.43	11.03	11.55	10.83	16.68	9.68	6.09
95th-Percentile Queue Length [ft/ln]	298.94	139.58	119.26	186.88	131.75	85.70	275.75	288.77	270.82	416.93	241.89	152.37



**Movement, Approach, & Intersection Results**

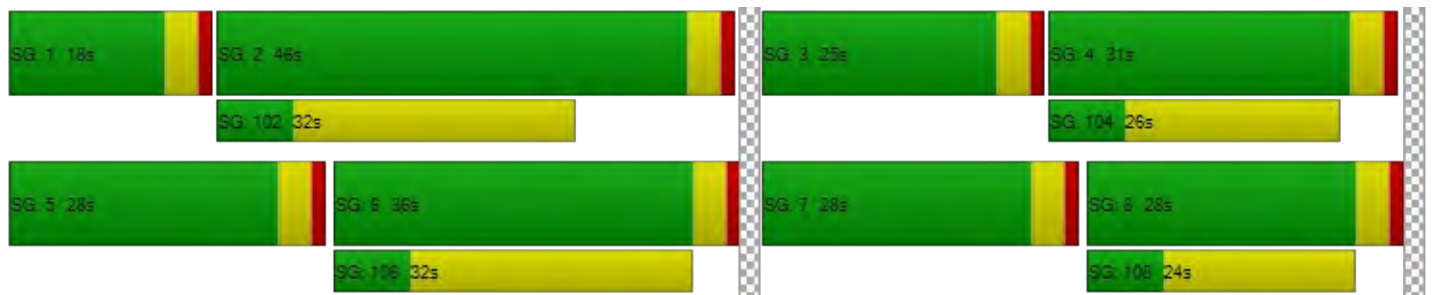
d_M, Delay for Movement [s/veh]	56.3	56.3	13.1	13.8	54.6	54.6	18.1	17.9	60.6	60.6	53.0	57.0	67.9	67.9	42.5	40.7
Movement LOS	E	E	B	B	D	D	B	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	21.00				27.66				55.74				51.38			
Approach LOS	C				C				E				D			
d_I, Intersection Delay [s/veh]	36.31															
Intersection LOS	D															
Intersection V/C	0.634															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.108				3.248				3.051				2.992			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				533				400				450			
d_b, Bicycle Delay [s]	25.35				32.27				38.40				36.04			
I_b,int, Bicycle LOS Score for Intersection	2.321				2.050				2.149				2.065			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	115	0	0	0	97	0	19	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	142	1016	128	88	153	939	27	67	18	90	0	106	15	155
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	38	273	34	24	41	252	7	18	5	24	0	28	4	42
Total Analysis Volume [veh/h]	34	153	1092	138	95	165	1010	29	72	19	97	0	114	16	167
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	68.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	20	48	0	0	32	60	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	60	60	19	65	65	28	28	28	28
g / C, Green / Cycle	0.12	0.50	0.50	0.16	0.54	0.54	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.11	0.21	0.09	0.15	0.20	0.02	0.18	0.06	0.16	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	508	1589	820	1589
c, Capacity [veh/h]	212	2559	799	287	2774	865	174	376	250	376
d1, Uniform Delay [s]	47.28	5.39	5.02	43.01	2.68	2.54	52.26	37.25	41.49	39.09
k, delay calibration	0.11	0.50	0.50	0.15	0.50	0.50	0.16	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.31	0.52	0.47	13.35	0.37	0.07	3.55	0.36	1.67	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.88	0.43	0.17	0.91	0.36	0.03	0.52	0.26	0.52	0.44
d, Delay for Lane Group [s/veh]	58.58	5.91	5.49	56.35	3.05	2.61	55.81	37.61	43.16	39.91
Lane Group LOS	E	A	A	E	A	A	E	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.61	1.85	0.73	7.66	0.95	0.09	2.88	2.39	3.64	4.34
50th-Percentile Queue Length [ft/ln]	140.13	46.15	18.23	191.50	23.84	2.21	72.09	59.81	91.09	108.50
95th-Percentile Queue Length [veh/ln]	9.49	3.32	1.31	12.20	1.72	0.16	5.19	4.31	6.56	7.76
95th-Percentile Queue Length [ft/ln]	237.19	83.07	32.82	304.97	42.91	3.98	129.76	107.67	163.97	193.92

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	58.5	58.5	5.91	5.49	56.3	56.3	3.05	2.61	55.81	55.81	37.61	43.1	43.1	43.1	39.9	
Movement LOS	E	E	A	A	E	E	A	A	E	E	D	D	D	D	D	
d_A, Approach Delay [s/veh]	12.82				13.71				46.42				41.33			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	17.80															
Intersection LOS	B															
Intersection V/C	0.568															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.359				3.216				2.059				2.284			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	733				933				600				600			
d_b, Bicycle Delay [s]	24.07				17.07				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.320				2.183				1.870				1.862			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	14	15	1027	409	19	140	872	33	20	17	39	11	542	20	161
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	132	20	0	8	89	0	0	0	0	0	14	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	16	1240	462	21	159	1030	36	22	19	42	12	599	22	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9750	0.9750	0.9750	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	4	318	118	5	41	264	9	6	5	11	3	154	6	46
Total Analysis Volume [veh/h]	15	16	1272	474	22	163	1056	37	23	19	43	12	614	23	185
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	9.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	54	0	0	22	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	59	59	14	68	68	7	7	25	25	25
g / C, Green / Cycle	0.04	0.49	0.49	0.12	0.57	0.57	0.05	0.05	0.20	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.02	0.25	0.30	0.10	0.20	0.20	0.02	0.03	0.18	0.18	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1838	1820	1589	1781	1787	1589
c, Capacity [veh/h]	68	2486	776	211	2024	1045	100	87	365	366	326
d1, Uniform Delay [s]	54.97	6.63	6.98	47.26	1.41	1.41	54.85	55.07	46.37	46.35	42.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.25	0.25	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.76	3.57	10.79	0.49	0.95	2.78	4.23	15.14	14.91	1.56
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.51	0.61	0.87	0.36	0.36	0.42	0.49	0.89	0.89	0.57
d, Delay for Lane Group [s/veh]	59.66	7.39	10.55	58.05	1.90	2.36	57.62	59.30	61.50	61.25	44.48
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.54	3.46	5.52	0.64	0.79	1.32	1.38	10.90	10.89	5.09
50th-Percentile Queue Length [ft/ln]	24.45	63.42	86.60	138.01	15.88	19.73	32.93	34.43	272.48	272.34	127.18
95th-Percentile Queue Length [veh/ln]	1.76	4.57	6.23	9.37	1.14	1.42	2.37	2.48	16.31	16.31	8.79
95th-Percentile Queue Length [ft/ln]	44.00	114.16	155.87	234.34	28.58	35.51	59.28	61.98	407.84	407.66	219.65

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	7.39	10.5	58.0	58.0	2.05	2.36	57.62	57.62	59.30	61.5	61.3	61.2	44.4
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	9.14			10.16			58.47			57.63					
Approach LOS	A			B			E			E					
d_I, Intersection Delay [s/veh]	20.70														
Intersection LOS	C														
Intersection V/C	0.655														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.212			1.998			2.508		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1017			117			483		
d_b, Bicycle Delay [s]	20.42			14.50			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.528			2.173			1.700			2.916		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	28.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	0	35	266	181	1	49	253	80	69	461	45	2	154	459	37
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	41	23	0	3	32	2	0	48	8	0	24	87	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	64	328	219	1	56	305	89	74	545	56	2	190	582	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.9630	0.9630	0.9630	0.96	0.96	0.96	0.96
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	17	85	57	0	15	79	23	19	141	15	1	49	151	11
Total Analysis Volume [veh/h]	0	66	341	227	1	58	317	92	77	566	58	2	197	604	44
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	13	39	0	0	11	37	0	11	33	0	0	12	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	16	16	6	16	16	6	44	44	13	51	51
g / C, Green / Cycle	0.06	0.17	0.17	0.06	0.17	0.17	0.06	0.47	0.47	0.13	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.14	0.03	0.09	0.06	0.04	0.12	0.12	0.11	0.12	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1783	1781	3560	1806
c, Capacity [veh/h]	110	617	276	106	608	271	116	1657	830	238	1902	965
d1, Uniform Delay [s]	43.48	35.95	37.93	43.54	35.91	34.72	43.49	15.40	15.42	40.18	11.73	11.74
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	5.11	0.77	6.12	4.55	0.69	0.73	6.45	0.36	0.73	7.48	0.28	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.60	0.55	0.82	0.56	0.52	0.34	0.67	0.25	0.25	0.83	0.23	0.23
d, Delay for Lane Group [s/veh]	48.60	36.73	44.05	48.09	36.61	35.46	49.94	15.76	16.16	47.66	12.01	12.29
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.63	3.56	5.37	1.45	3.29	1.87	1.91	2.55	2.67	4.82	2.20	2.31
50th-Percentile Queue Length [ft/ln]	40.67	88.90	134.23	36.17	82.26	46.73	47.72	63.73	66.86	120.58	54.88	57.86
95th-Percentile Queue Length [veh/ln]	2.93	6.40	9.17	2.60	5.92	3.36	3.44	4.59	4.81	8.42	3.95	4.17
95th-Percentile Queue Length [ft/ln]	73.21	160.02	229.24	65.11	148.07	84.11	85.89	114.71	120.36	210.62	98.78	104.15



**Movement, Approach, & Intersection Results**

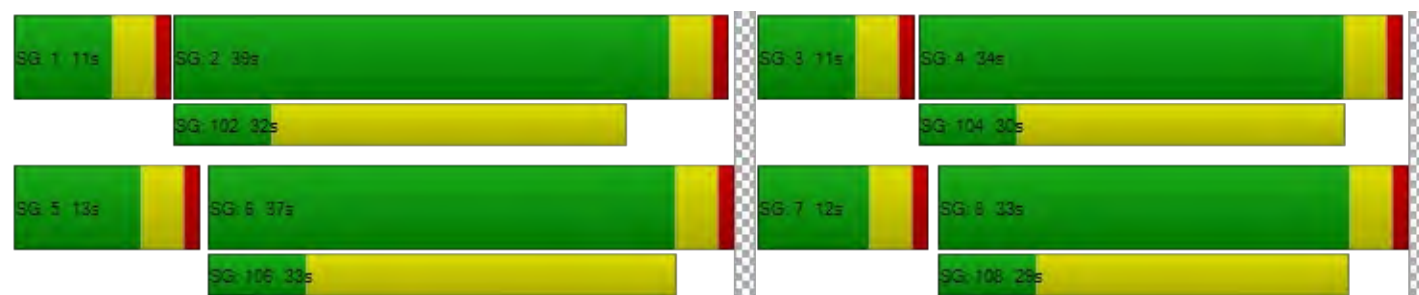
d_M, Delay for Movement [s/veh]	48.6	48.6	36.7	44.0	48.0	48.0	36.6	35.4	49.94	15.86	16.16	47.6	47.6	12.0	12.2	
Movement LOS	D	D	D	D	D	D	D	D	D	B	B	D	D	B	B	
d_A, Approach Delay [s/veh]	40.59				37.83				19.63				20.46			
Approach LOS	D				D				B				C			
d_I, Intersection Delay [s/veh]	28.12															
Intersection LOS	C															
Intersection V/C	0.443															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.716				2.657				2.902				2.951			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	737				695				611				632			
d_b, Bicycle Delay [s]	18.95				20.23				22.93				22.24			
I_b,int, Bicycle LOS Score for Intersection	2.028				1.898				1.945				2.024			
Bicycle LOS	B				A				A				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	T T T T			T T		T T	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	27	109	320	280	578	564	77
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	31	26	60	38	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	117	376	328	684	647	83
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	31	100	87	182	172	22
Total Analysis Volume [veh/h]	31	124	400	349	728	688	88
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	20	51	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	18	58	36	36
g / C, Green / Cycle	0.17	0.17	0.22	0.73	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.20	0.20	0.19	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	601	489	397	2586	1615	721
d1, Uniform Delay [s]	28.62	31.87	30.09	3.77	14.82	12.65
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	3.44	6.42	0.27	0.82	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.26	0.82	0.88	0.28	0.43	0.12
d, Delay for Lane Group [s/veh]	28.84	35.30	36.51	4.04	15.64	13.00
Lane Group LOS	C	D	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.24	3.74	6.57	1.14	3.74	0.85
50th-Percentile Queue Length [ft/ln]	30.98	93.50	164.13	28.58	93.54	21.16
95th-Percentile Queue Length [veh/ln]	2.23	6.73	10.77	2.06	6.73	1.52
95th-Percentile Queue Length [ft/ln]	55.76	168.30	269.18	51.45	168.37	38.09

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	28.84	28.84	35.30	36.51	4.04	15.64	13.00
Movement LOS	C	C	D	D	A	B	B
d_A, Approach Delay [s/veh]	33.50			14.56		15.34	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	19.18						
Intersection LOS	B						
Intersection V/C	0.574						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.90	0.00	18.23
I_p,int, Pedestrian LOS Score for Intersection	2.528	0.000	2.803
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	40.00	40.00	40.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.021	4.773
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.145

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1079	20	0	986	0	46
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	134	0	0	83	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1299	22	0	1147	0	49
Peak Hour Factor	0.9740	0.9740	1.0000	0.9740	1.0000	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	333	6	0	294	0	13
Total Analysis Volume [veh/h]	1334	23	0	1178	0	50
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	17.23
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.50
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	12.58
d_A, Approach Delay [s/veh]	0.00		0.00		17.23	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.189

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	91	718	81	0	728
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	86	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	98	861	88	0	855
Peak Hour Factor	1.0000	0.9420	0.9420	0.9420	1.0000	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	26	229	23	0	227
Total Analysis Volume [veh/h]	0	104	914	93	0	908
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.19	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	13.05	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.69	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	17.25	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.05		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.67					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	25.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	15	81	10	745	53	113	706
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	86	0	0	69
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	16	88	10	890	58	122	831
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	23	3	230	15	32	215
Total Analysis Volume [veh/h]	1	17	91	10	920	60	126	859
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.09	0.17	0.03	0.01	0.00	0.18	0.01
d_M, Delay for Movement [s/veh]	25.74	25.74	12.87	16.91	0.00	0.00	11.27	0.00
Movement LOS	D	D	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.31	0.31	0.59	0.10	0.05	0.00	0.65	0.00
95th-Percentile Queue Length [ft/ln]	7.67	7.67	14.78	2.47	1.24	0.00	16.31	0.00
d_A, Approach Delay [s/veh]	14.99			0.17			1.44	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.55							
Intersection LOS	D							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	4.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.327

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	26	1003	182	2	0	1003	89	48
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	65	2	0	0	85	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	1148	199	2	0	1168	98	52
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	297	52	1	0	302	25	13
Total Analysis Volume [veh/h]	29	1188	206	2	0	1209	101	54
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	11	59	0	0	18	66	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	99	99	0	95	9	9
g / C, Green / Cycle	0.04	0.82	0.82	0.00	0.79	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.13	0.00	0.24	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	65	4179	1304	7	4016	134	120
d1, Uniform Delay [s]	55.22	0.00	0.00	59.40	0.00	54.38	53.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.17	0.26	17.96	0.19	8.18	2.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.28	0.16	0.27	0.30	0.75	0.45
d, Delay for Lane Group [s/veh]	60.05	0.17	0.26	77.36	0.19	62.56	55.73
Lane Group LOS	E	A	A	E	A	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.91	0.07	0.09	0.10	0.07	3.32	1.66
50th-Percentile Queue Length [ft/ln]	22.84	1.65	2.34	2.42	1.79	83.04	41.56
95th-Percentile Queue Length [veh/ln]	1.64	0.12	0.17	0.17	0.13	5.98	2.99
95th-Percentile Queue Length [ft/ln]	41.11	2.98	4.22	4.36	3.23	149.47	74.81

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.05	0.17	0.26	77.36	77.36	0.19	62.56	55.73
Movement LOS	E	A	A	E	E	A	E	E
d_A, Approach Delay [s/veh]	1.40			0.32			60.18	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	4.20							
Intersection LOS	A							
Intersection V/C	0.327							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.063	2.052
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.915	4.798	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	53.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.913

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	29	127	868	182	82	224	837	232	4	156	960	273	33	218	470	105
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	49	53	47	0	8	63	16	0	4	50	46	0	60	60	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	186	990	244	89	250	966	266	4	172	1086	341	36	295	568	123
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	0.92	0.92	0.92	0.92
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	50	268	66	24	68	261	72	1	46	294	92	10	80	154	33
Total Analysis Volume [veh/h]	34	201	1070	264	96	270	1044	288	4	186	1174	369	39	319	614	133
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	18.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	20	38	0	0	18	36	0	0	22	39	0	0	25	42	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	34	34	14	32	32	15	35	35	21	41	41
g / C, Green / Cycle	0.13	0.28	0.28	0.12	0.27	0.27	0.12	0.29	0.29	0.18	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.13	0.21	0.17	0.11	0.20	0.18	0.11	0.31	0.23	0.20	0.17	0.08
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3740	1589	1781	3560	1589
c, Capacity [veh/h]	237	1443	450	404	1358	424	220	1091	464	312	1222	546
d1, Uniform Delay [s]	46.58	28.10	26.53	47.70	30.21	29.25	51.61	42.50	39.21	49.50	31.27	28.24
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.31	0.31	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	24.78	3.47	5.50	7.91	4.23	8.50	9.74	39.03	8.49	87.79	0.32	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.99	0.74	0.59	0.91	0.77	0.68	0.86	1.08	0.80	1.15	0.50	0.24
d, Delay for Lane Group [s/veh]	71.36	31.57	32.03	55.61	34.44	37.75	61.36	81.53	47.70	137.29	31.59	28.47
Lane Group LOS	E	C	C	E	C	D	E	F	D	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.88	7.27	5.29	5.31	7.58	6.50	6.06	21.35	10.73	16.64	6.85	2.69
50th-Percentile Queue Length [ft/ln]	197.07	181.84	132.27	132.69	189.49	162.56	151.39	533.70	268.18	416.05	171.14	67.30
95th-Percentile Queue Length [veh/ln]	12.49	11.70	9.06	9.09	12.09	10.68	10.09	30.28	16.10	24.96	11.14	4.85
95th-Percentile Queue Length [ft/ln]	312.18	292.41	226.57	227.14	302.37	267.11	252.28	757.10	402.46	623.98	278.41	121.13



**Movement, Approach, & Intersection Results**

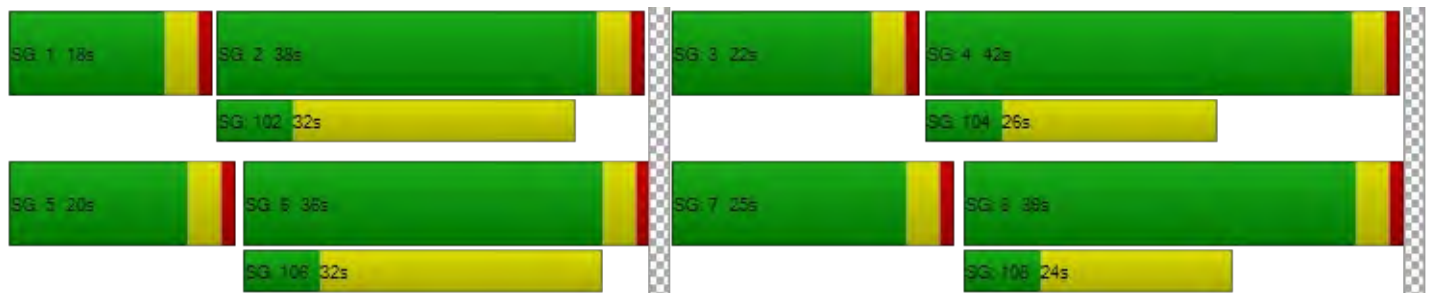
d_M, Delay for Movement [s/veh]	71.3	71.3	31.5	32.0	55.6	55.6	34.4	37.7	61.3	61.3	81.5	47.7	137.	137.	31.5	28.4
Movement LOS	E	E	C	C	E	E	C	D	E	E	F	D	F	F	C	C
d_A, Approach Delay [s/veh]	37.61				39.56				72.11				65.46			
Approach LOS	D				D				E				E			
d_I, Intersection Delay [s/veh]	52.99															
Intersection LOS	D															
Intersection V/C	0.913															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.209				3.331				3.258				3.195			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	567				533				583				633			
d_b, Bicycle Delay [s]	30.82				32.27				30.10				28.02			
I_b,int, Bicycle LOS Score for Intersection	2.404				2.345				2.836				2.208			
Bicycle LOS	B				B				C				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.606

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	133	0	0	0	179	0	16	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	72	1104	77	109	186	1387	10	81	31	134	0	91	13	142
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	18	278	19	27	47	349	3	20	8	34	0	23	3	36
Total Analysis Volume [veh/h]	18	72	1111	77	110	187	1395	10	81	31	135	0	92	13	143
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	76.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	13	46	0	0	34	67	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	57	57	22	71	71	29	29	29	29
g / C, Green / Cycle	0.06	0.48	0.48	0.18	0.59	0.59	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.05	0.22	0.05	0.17	0.27	0.01	0.19	0.08	0.15	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	586	1589	709	1589
c, Capacity [veh/h]	112	2427	757	323	3032	946	194	385	228	385
d1, Uniform Delay [s]	52.99	7.34	6.60	40.97	0.20	0.20	51.28	37.68	40.18	37.89
k, delay calibration	0.11	0.50	0.50	0.21	0.50	0.50	0.19	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.45	0.62	0.27	17.47	0.51	0.02	4.70	0.55	1.45	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.46	0.10	0.92	0.46	0.01	0.58	0.35	0.46	0.37
d, Delay for Lane Group [s/veh]	65.44	7.97	6.87	58.44	0.70	0.22	55.99	38.22	41.63	38.48
Lane Group LOS	E	A	A	E	A	A	E	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.93	2.43	0.50	9.00	0.24	0.01	3.58	3.39	2.87	3.62
50th-Percentile Queue Length [ft/ln]	73.20	60.74	12.50	224.93	6.05	0.19	89.60	84.83	71.75	90.40
95th-Percentile Queue Length [veh/ln]	5.27	4.37	0.90	13.92	0.44	0.01	6.45	6.11	5.17	6.51
95th-Percentile Queue Length [ft/ln]	131.77	109.33	22.50	347.91	10.89	0.34	161.27	152.69	129.15	162.71

**Movement, Approach, & Intersection Results**

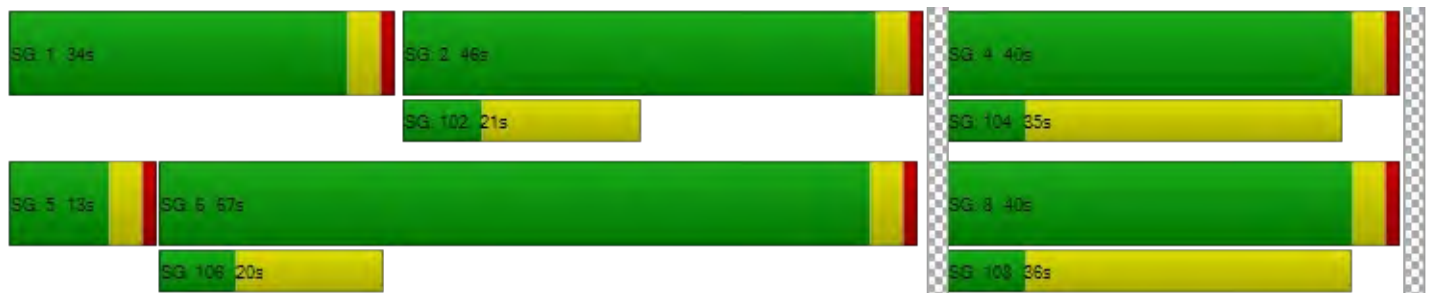
d_M, Delay for Movement [s/veh]	65.4	65.4	7.97	6.87	58.4	58.4	0.70	0.22	55.99	55.99	38.22	41.6	41.6	41.6	38.4	
Movement LOS	E	E	A	A	E	E	A	A	E	E	D	D	D	D	D	
d_A, Approach Delay [s/veh]	11.95				10.78				46.28				39.82			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	15.80															
Intersection LOS	B															
Intersection V/C	0.606															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.360				3.286				2.047				2.232			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				1050				600				600			
d_b, Bicycle Delay [s]	25.35				13.54				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.253				2.393				1.967				1.817			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.683

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	23	921	382	32	170	1143	24	11	14	34	8	578	9	139
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	143	22	0	8	171	0	0	0	0	0	22	0	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	25	1137	434	35	191	1405	26	12	15	37	8	646	9	158
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9550	0.9550	0.9550	0.95	0.95	0.95	0.95
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	298	114	9	50	368	7	3	4	10	2	169	2	41
Total Analysis Volume [veh/h]	17	26	1191	454	37	200	1471	27	13	16	39	8	676	9	165
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	55.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	49	0	0	24	62	0	0	11	0	0	0	36	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	54	54	18	66	66	6	6	26	26	26
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.55	0.55	0.05	0.05	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.23	0.29	0.13	0.28	0.28	0.02	0.02	0.19	0.19	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1853	1829	1589	1781	1783	1589
c, Capacity [veh/h]	80	2284	713	262	1960	1020	96	83	390	390	348
d1, Uniform Delay [s]	54.32	9.83	10.45	44.48	2.43	2.43	54.74	55.22	45.46	45.46	40.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.25	0.25	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.86	4.32	11.22	0.92	1.77	1.74	4.03	14.58	14.49	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.52	0.64	0.91	0.50	0.50	0.30	0.47	0.89	0.89	0.47
d, Delay for Lane Group [s/veh]	59.85	10.68	14.77	55.70	3.35	4.20	56.48	59.25	60.05	59.95	41.87
Lane Group LOS	E	B	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	3.28	4.50	6.90	1.37	1.66	0.90	1.25	11.54	11.54	4.36
50th-Percentile Queue Length [ft/ln]	33.71	82.03	112.43	172.56	34.15	41.54	22.47	31.25	288.53	288.41	109.06
95th-Percentile Queue Length [veh/ln]	2.43	5.91	7.97	11.21	2.46	2.99	1.62	2.25	17.11	17.11	7.79
95th-Percentile Queue Length [ft/ln]	60.68	147.66	199.37	280.27	61.47	74.78	40.45	56.25	427.81	427.67	194.69

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	10.6	14.7	55.7	55.7	3.63	4.20	56.48	56.48	59.25	60.0	60.0	59.9	41.8	
Movement LOS	E	E	B	B	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	13.03				10.75				58.07				56.51			
Approach LOS	B				B				E				E			
d_I, Intersection Delay [s/veh]	21.41															
Intersection LOS	C															
Intersection V/C	0.683															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.255				1.989				2.517			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	750				967				117				533			
d_b, Bicycle Delay [s]	23.44				16.02				53.20				32.27			
I_b,int, Bicycle LOS Score for Intersection	2.474				2.404				1.672				2.962			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.768

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	2	38	369	271	0	136	551	121	109	1074	113	0	197	564	43
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	47	22	0	2	45	6	0	116	26	0	38	82	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	57	446	315	0	149	639	137	117	1276	148	0	250	691	48
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	1	14	113	80	0	38	162	35	30	324	38	0	64	176	12
Total Analysis Volume [veh/h]	2	58	453	320	0	151	649	139	119	1297	150	0	254	702	49
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	16	33	0	0	17	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	21	21	7	23	23	8	31	31	15	38	38
g / C, Green / Cycle	0.06	0.23	0.23	0.08	0.25	0.25	0.09	0.34	0.34	0.17	0.42	0.42
(v / s)_j Volume / Saturation Flow Rate	0.03	0.13	0.20	0.08	0.18	0.09	0.07	0.27	0.27	0.14	0.14	0.14
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1772	1781	3560	1808
c, Capacity [veh/h]	110	837	374	140	898	401	154	1220	607	296	1504	764
d1, Uniform Delay [s]	41.08	30.22	33.02	41.54	30.84	27.64	40.34	26.75	26.75	36.56	17.48	17.49
k, delay calibration	0.11	0.11	0.12	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.17	0.55	6.49	58.39	1.12	0.51	8.03	5.32	10.19	7.15	0.59	1.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.55	0.54	0.86	1.08	0.72	0.35	0.77	0.79	0.79	0.86	0.33	0.33
d, Delay for Lane Group [s/veh]	45.25	30.76	39.51	99.93	31.96	28.15	48.37	32.06	36.94	43.71	18.07	18.66
Lane Group LOS	D	C	D	F	C	C	D	C	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.38	4.17	7.01	5.27	6.24	2.40	2.81	9.43	10.21	5.72	3.26	3.45
50th-Percentile Queue Length [ft/ln]	34.47	104.18	175.24	131.73	156.12	60.02	70.14	235.63	255.24	142.90	81.58	86.22
95th-Percentile Queue Length [veh/ln]	2.48	7.50	11.35	9.26	10.34	4.32	5.05	14.46	15.45	9.64	5.87	6.21
95th-Percentile Queue Length [ft/ln]	62.05	187.52	283.79	231.42	258.58	108.03	126.26	361.51	386.25	240.92	146.84	155.19



**Movement, Approach, & Intersection Results**

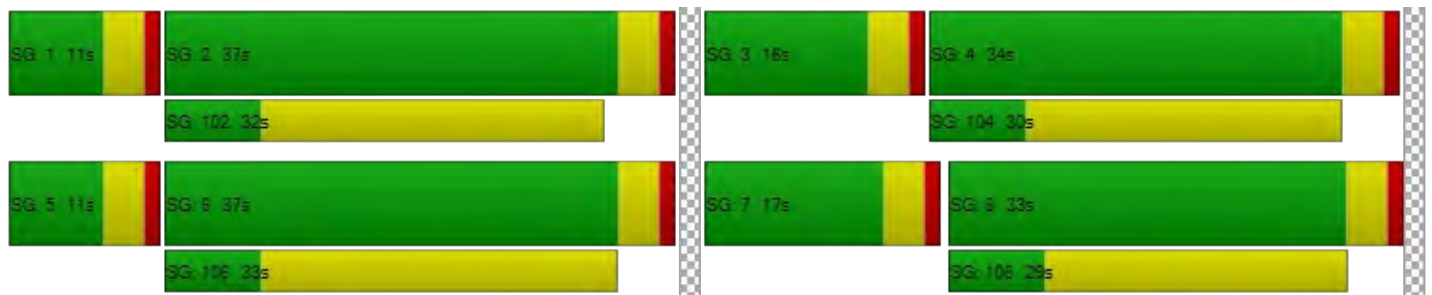
d_M, Delay for Movement [s/veh]	45.2	45.2	30.7	39.5	99.9	99.9	31.9	28.1	48.37	33.31	36.94	43.7	43.7	18.2	18.6	
Movement LOS	D	D	C	D	F	F	C	C	D	C	D	D	D	B	B	
d_A, Approach Delay [s/veh]	35.17				42.33				34.80				24.70			
Approach LOS	D				D				C				C			
d_I, Intersection Delay [s/veh]	34.16															
Intersection LOS	C															
Intersection V/C	0.768															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	34.67				34.67				34.67				34.67			
I_p,int, Pedestrian LOS Score for Intersection	2.861				2.790				3.108				3.173			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	733				733				644				667			
d_b, Bicycle Delay [s]	18.05				18.05				20.67				20.00			
I_b,int, Bicycle LOS Score for Intersection	2.199				2.210				2.421				2.112			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	23.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	37	457	415	349	1247	600	150
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	46	44	61	84	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	493	494	421	1407	732	162
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	133	133	114	379	197	44
Total Analysis Volume [veh/h]	43	532	533	454	1518	790	175
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	33	33	25	56	35	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0
Pedestrian Clearance [s]	0	22	0	0	24	24	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	24	58	30	30
g / C, Green / Cycle	0.22	0.22	0.28	0.69	0.36	0.36
(v / s)_j Volume / Saturation Flow Rate	0.17	0.19	0.25	0.43	0.22	0.11
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	765	622	498	2438	1275	569
d1, Uniform Delay [s]	30.95	31.84	29.61	7.36	22.52	19.69
k, delay calibration	0.11	0.11	0.23	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.52	3.55	12.86	1.21	2.27	1.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.75	0.86	0.91	0.62	0.62	0.31
d, Delay for Lane Group [s/veh]	32.47	35.39	42.48	8.57	24.79	21.09
Lane Group LOS	C	D	D	A	C	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.36	5.26	9.84	5.23	6.17	2.45
50th-Percentile Queue Length [ft/ln]	133.93	131.52	245.96	130.79	154.20	61.37
95th-Percentile Queue Length [veh/ln]	9.15	9.02	14.98	8.98	10.24	4.42
95th-Percentile Queue Length [ft/ln]	228.83	225.56	374.56	224.57	256.02	110.46

**Movement, Approach, & Intersection Results**

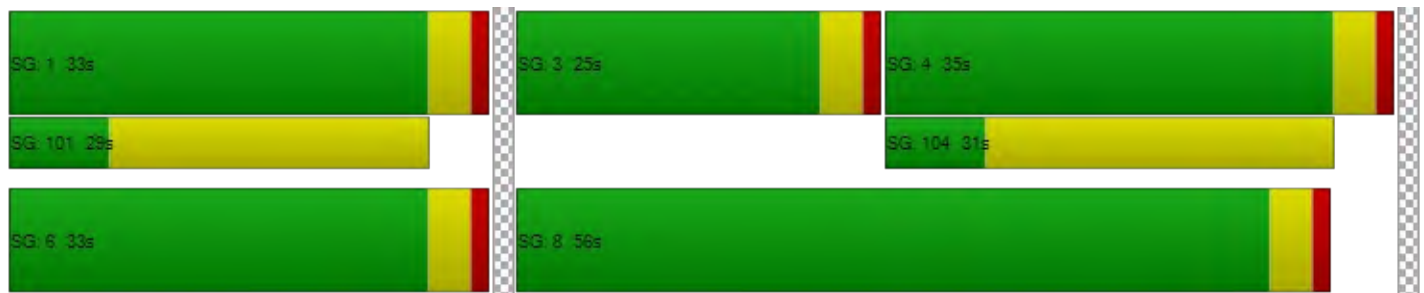
d_M, Delay for Movement [s/veh]	32.47	32.47	35.39	42.48	8.57	24.79	21.09
Movement LOS	C	C	D	D	A	C	C
d_A, Approach Delay [s/veh]	33.88			16.38		24.12	
Approach LOS	C			B		C	
d_I, Intersection Delay [s/veh]	23.02						
Intersection LOS	C						
Intersection V/C	0.717						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.748	0.000	3.276
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	4.132	5.759	4.929
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1179	11	0	1350	0	13
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	149	0	0	169	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1422	12	0	1626	0	14
Peak Hour Factor	0.9750	0.9750	1.0000	0.9750	1.0000	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	365	3	0	417	0	4
Total Analysis Volume [veh/h]	1458	12	0	1668	0	14
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	17.02
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	3.49
d_A, Approach Delay [s/veh]	0.00		0.00		17.02	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.252

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	72	1374	66	0	813
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	105	0	0	130
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	77	1588	71	0	1008
Peak Hour Factor	1.0000	0.9660	0.9660	0.9660	1.0000	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	20	411	18	0	261
Total Analysis Volume [veh/h]	0	80	1644	73	0	1043
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.25	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	20.14	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.98	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	24.49	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.14		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.57					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	53.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.168

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	0	14	79	6	1393	45	104	798
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	105	0	0	130
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	15	85	6	1609	48	112	991
Peak Hour Factor	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	22	2	416	12	29	256
Total Analysis Volume [veh/h]	0	15	88	6	1662	50	116	1024
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.17	0.28	0.02	0.02	0.00	0.32	0.01
d_M, Delay for Movement [s/veh]	53.41	53.41	20.95	20.27	0.00	0.00	19.30	0.00
Movement LOS	F	F	C	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.57	0.57	1.13	0.08	0.04	0.00	1.33	0.00
95th-Percentile Queue Length [ft/ln]	14.30	14.30	28.23	1.90	0.95	0.00	33.30	0.00
d_A, Approach Delay [s/veh]	25.68			0.07			1.96	
Approach LOS	D			A			A	
d_I, Intersection Delay [s/veh]	1.69							
Intersection LOS	F							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	5.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.331

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	35	845	154	1	39	881	103	39
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	116	5	0	0	156	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	1029	171	1	42	1107	116	42
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	267	44	0	11	287	30	11
Total Analysis Volume [veh/h]	39	1066	177	1	44	1147	120	44
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	65	0	0	12	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	92	92	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.05	0.77	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.02	0.21	0.11	0.03	0.23	0.07	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	76	3912	1221	81	3926	154	138
d1, Uniform Delay [s]	54.53	0.00	0.00	54.28	0.00	53.68	51.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.26	0.17	0.25	5.83	0.19	8.18	1.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.51	0.27	0.15	0.56	0.29	0.78	0.32
d, Delay for Lane Group [s/veh]	59.79	0.17	0.25	60.11	0.19	61.86	52.81
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.22	0.06	0.08	1.40	0.07	3.93	1.31
50th-Percentile Queue Length [ft/ln]	30.40	1.56	2.12	35.08	1.72	98.21	32.72
95th-Percentile Queue Length [veh/ln]	2.19	0.11	0.15	2.53	0.12	7.07	2.36
95th-Percentile Queue Length [ft/ln]	54.72	2.81	3.81	63.15	3.09	176.79	58.90

**Movement, Approach, & Intersection Results**

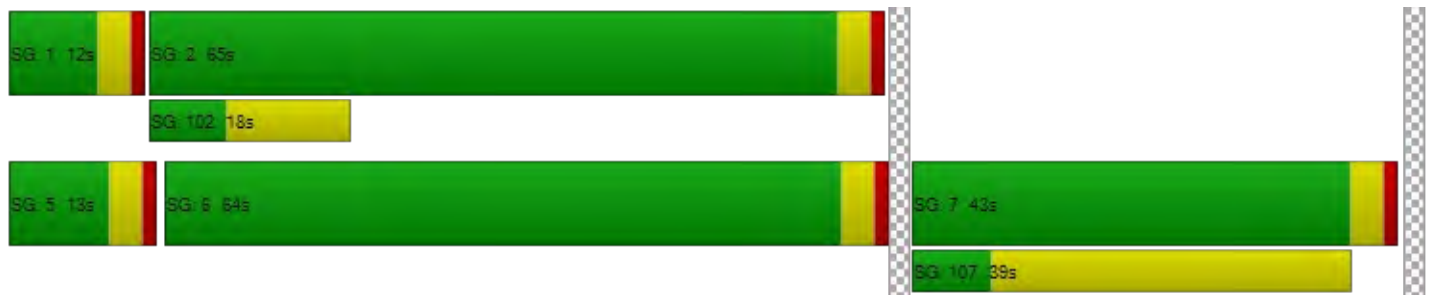
d_M, Delay for Movement [s/veh]	59.79	0.17	0.25	60.11	60.11	0.19	61.86	52.81
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	2.00			2.45			59.43	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	5.77							
Intersection LOS	A							
Intersection V/C	0.331							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.035	2.058
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.838	4.764	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	36.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	55	126	707	194	78	147	656	138	11	135	361	168	35	211	294	109
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	81	96	66	0	14	90	57	0	7	102	58	0	68	110	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	217	859	275	84	173	798	206	12	152	491	239	38	296	427	135
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	15	55	219	70	21	44	204	53	3	39	125	61	10	76	109	34
Total Analysis Volume [veh/h]	61	222	877	281	86	177	815	210	12	155	502	244	39	302	436	138
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	12.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	27	43	0	0	20	36	0	0	22	28	0	0	29	35	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	47	47	11	38	38	13	21	21	25	32	32
g / C, Green / Cycle	0.17	0.39	0.39	0.09	0.31	0.31	0.11	0.17	0.17	0.21	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.16	0.17	0.18	0.08	0.16	0.13	0.09	0.14	0.15	0.19	0.12	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	307	2003	625	324	1603	500	196	621	277	366	959	428
d1, Uniform Delay [s]	41.99	14.26	14.32	49.62	22.52	21.86	52.41	47.61	48.31	46.87	36.50	35.07
k, delay calibration	0.18	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.17	0.28	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	17.10	0.70	2.33	4.90	1.16	2.58	9.80	2.56	12.87	22.05	0.34	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.92	0.44	0.45	0.81	0.51	0.42	0.85	0.81	0.88	0.93	0.45	0.32
d, Delay for Lane Group [s/veh]	59.09	14.96	16.65	54.52	23.68	24.44	62.21	50.17	61.18	68.92	36.83	35.50
Lane Group LOS	E	B	B	D	C	C	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.61	3.27	3.43	3.79	4.35	3.52	5.35	7.22	7.90	11.91	5.21	3.19
50th-Percentile Queue Length [ft/ln]	215.23	81.70	85.76	94.86	108.81	88.04	133.63	180.56	197.44	297.71	130.19	79.80
95th-Percentile Queue Length [veh/ln]	13.42	5.88	6.17	6.83	7.77	6.34	9.14	11.63	12.51	17.57	8.95	5.75
95th-Percentile Queue Length [ft/ln]	335.53	147.06	154.36	170.75	194.35	158.47	228.43	290.74	312.66	439.19	223.75	143.63

**Movement, Approach, & Intersection Results**

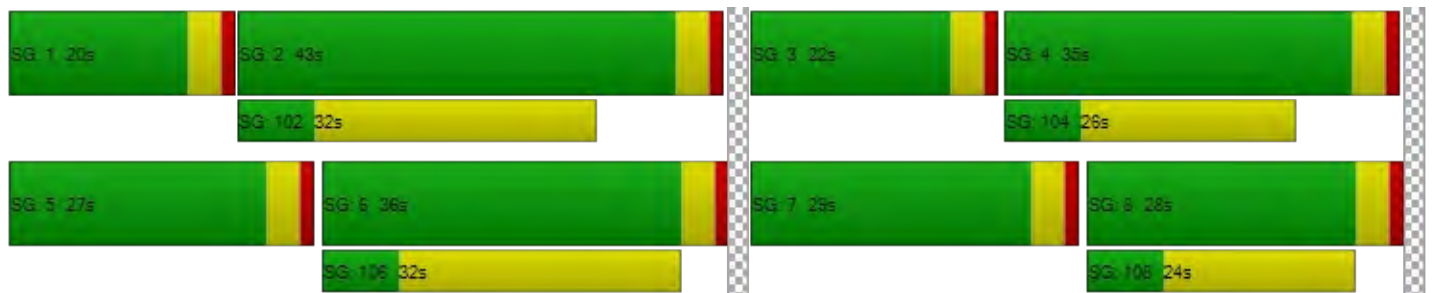
d_M, Delay for Movement [s/veh]	59.0	59.0	14.9	16.6	54.5	54.5	23.6	24.4	62.2	62.2	50.1	61.1	68.9	68.9	36.8	35.5
Movement LOS	E	E	B	B	D	D	C	C	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	23.95				30.10				55.31				48.59			
Approach LOS	C				C				E				D			
d_I, Intersection Delay [s/veh]	36.92															
Intersection LOS	D															
Intersection V/C	0.711															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.138				3.260				3.065				2.999			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	650				533				400				517			
d_b, Bicycle Delay [s]	27.34				32.27				38.40				33.00			
I_b,int, Bicycle LOS Score for Intersection	2.319				2.171				2.185				2.065			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	203	0	0	0	243	0	40	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	121	1057	123	85	194	1142	38	76	21	46	0	118	20	162
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	31	269	31	22	49	290	10	19	5	12	0	30	5	41
Total Analysis Volume [veh/h]	45	123	1074	125	86	197	1161	39	77	21	47	0	120	20	165
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	67.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	19	50	0	0	30	61	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	61	61	21	69	69	26	26	26	26
g / C, Green / Cycle	0.11	0.51	0.51	0.17	0.57	0.57	0.22	0.22	0.22	0.22
(v / s)_j Volume / Saturation Flow Rate	0.09	0.21	0.08	0.16	0.23	0.02	0.18	0.03	0.13	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	558	1589	1079	1589
c, Capacity [veh/h]	193	2587	807	308	2917	910	176	348	292	348
d1, Uniform Delay [s]	48.32	4.99	4.66	41.85	1.22	1.17	52.63	37.72	41.91	40.85
k, delay calibration	0.11	0.50	0.50	0.18	0.50	0.50	0.15	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.24	0.49	0.41	16.47	0.41	0.09	3.81	0.17	1.22	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.42	0.15	0.92	0.40	0.04	0.56	0.14	0.48	0.47
d, Delay for Lane Group [s/veh]	59.56	5.48	5.07	58.32	1.62	1.26	56.43	37.90	43.13	41.85
Lane Group LOS	E	A	A	E	A	A	E	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.10	1.72	0.63	8.54	0.59	0.07	3.11	1.15	3.85	4.40
50th-Percentile Queue Length [ft/ln]	127.50	43.00	15.68	213.57	14.87	1.75	77.84	28.70	96.26	109.93
95th-Percentile Queue Length [veh/ln]	8.80	3.10	1.13	13.34	1.07	0.13	5.60	2.07	6.93	7.84
95th-Percentile Queue Length [ft/ln]	220.09	77.41	28.22	333.41	26.76	3.16	140.10	51.66	173.28	195.90

**Movement, Approach, & Intersection Results**

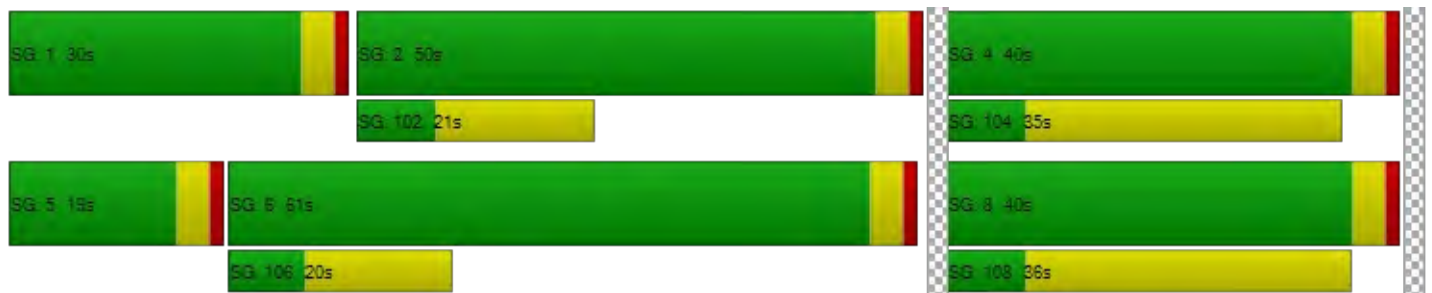
d_M, Delay for Movement [s/veh]	59.5	59.5	5.48	5.07	58.3	58.3	1.62	1.26	56.43	56.43	37.90	43.1	43.1	43.1	41.8	
Movement LOS	E	E	A	A	E	E	A	A	E	E	D	D	D	D	D	
d_A, Approach Delay [s/veh]	12.09				12.43				50.43				42.44			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	16.73															
Intersection LOS	B															
Intersection V/C	0.574															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.374				3.247				2.043				2.300			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	767				950				600				600			
d_b, Bicycle Delay [s]	22.82				16.54				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.287				2.267				1.799				1.865			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	24	1044	549	25	137	882	28	20	5	32	7	612	8	142
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	237	29	0	11	232	0	0	0	0	0	22	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	26	1364	621	27	159	1184	30	22	5	35	7	682	8	164
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9760	0.9760	0.9760	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	349	159	7	41	303	8	6	1	9	2	175	2	42
Total Analysis Volume [veh/h]	16	27	1398	636	28	163	1213	31	23	5	36	7	699	8	168
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	4.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	59	0	0	17	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	58	58	13	66	66	6	6	26	26	26
g / C, Green / Cycle	0.04	0.49	0.49	0.11	0.55	0.55	0.05	0.05	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.40	0.11	0.23	0.23	0.02	0.02	0.20	0.20	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1846	1796	1589	1781	1783	1589
c, Capacity [veh/h]	80	2476	773	193	1957	1015	93	82	393	393	351
d1, Uniform Delay [s]	54.32	6.95	8.45	49.10	2.43	2.43	54.82	55.21	45.58	45.57	40.75
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.31	0.30	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.94	9.67	27.80	0.66	1.27	1.80	3.65	18.99	18.88	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.56	0.82	0.99	0.42	0.42	0.30	0.44	0.91	0.91	0.48
d, Delay for Lane Group [s/veh]	59.85	7.89	18.13	76.90	3.09	3.70	56.62	58.86	64.57	64.45	41.77
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.90	5.93	6.67	1.12	1.34	0.87	1.15	12.38	12.38	4.44
50th-Percentile Queue Length [ft/ln]	33.71	72.38	148.31	166.79	28.04	33.38	21.75	28.75	309.60	309.40	110.96
95th-Percentile Queue Length [veh/ln]	2.43	5.21	9.93	10.91	2.02	2.40	1.57	2.07	18.16	18.15	7.89
95th-Percentile Queue Length [ft/ln]	60.68	130.28	248.17	272.69	50.47	60.09	39.15	51.74	453.89	453.64	197.33



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	7.89	18.1	76.9	76.9	3.29	3.70	56.62	56.62	58.86	64.5	64.5	64.4	41.7
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	12.10			13.10			57.88			60.18					
Approach LOS	B			B			E			E					
d_I, Intersection Delay [s/veh]	22.59														
Intersection LOS	C														
Intersection V/C	0.783														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.245			1.989			2.556		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	917			1017			117			483		
d_b, Bicycle Delay [s]	17.60			14.50			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.687			2.259			1.665			3.003		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	27.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	1	38	215	168	1	42	207	69	65	443	56	2	100	397	41
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	85	67	0	5	41	10	0	138	26	0	124	123	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	67	317	248	1	50	265	84	70	616	87	2	232	551	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9730	0.9730	0.9730	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	17	81	64	0	13	68	22	18	158	22	1	60	142	13
Total Analysis Volume [veh/h]	1	69	326	255	1	51	272	86	72	633	89	2	238	566	50
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	12	33	0	0	17	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	17	17	5	17	17	6	37	37	14	46	46
g / C, Green / Cycle	0.06	0.19	0.19	0.06	0.18	0.18	0.07	0.41	0.41	0.16	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.16	0.03	0.08	0.05	0.04	0.14	0.14	0.13	0.11	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1755	1781	3560	1794
c, Capacity [veh/h]	117	685	306	103	658	294	117	1471	725	283	1803	908
d1, Uniform Delay [s]	40.99	32.37	35.03	41.22	32.44	31.68	41.00	17.96	17.99	36.85	12.41	12.42
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.87	0.51	5.91	3.77	0.42	0.55	5.11	0.59	1.23	6.91	0.29	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.60	0.48	0.83	0.50	0.41	0.29	0.61	0.33	0.33	0.85	0.23	0.23
d, Delay for Lane Group [s/veh]	45.86	32.89	40.94	44.99	32.86	32.22	46.11	18.55	19.22	43.76	12.70	13.01
Lane Group LOS	D	C	D	D	C	C	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	3.08	5.63	1.19	2.55	1.60	1.65	3.21	3.34	5.39	2.09	2.20
50th-Percentile Queue Length [ft/ln]	40.49	76.97	140.78	29.82	63.81	39.93	41.35	80.20	83.40	134.86	52.34	54.98
95th-Percentile Queue Length [veh/ln]	2.92	5.54	9.52	2.15	4.59	2.87	2.98	5.77	6.00	9.20	3.77	3.96
95th-Percentile Queue Length [ft/ln]	72.89	138.54	238.07	53.68	114.86	71.87	74.43	144.36	150.11	230.09	94.20	98.97

**Movement, Approach, & Intersection Results**

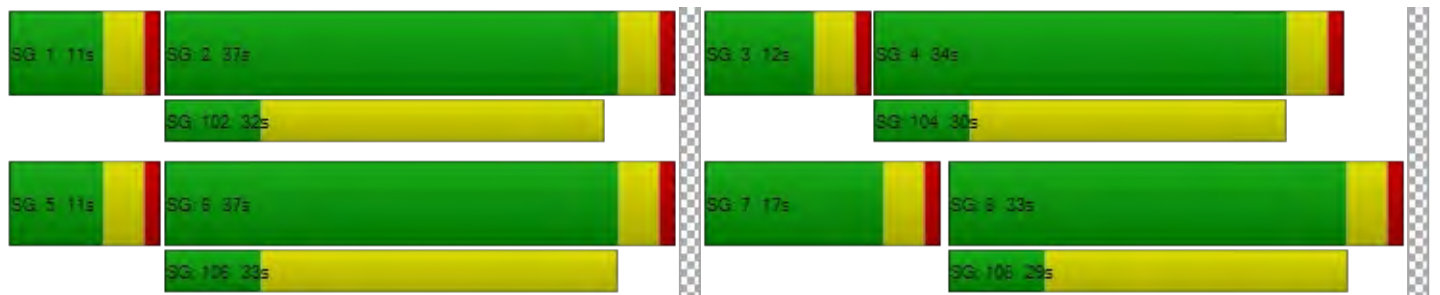
d_M, Delay for Movement [s/veh]	45.8	45.8	32.8	40.9	44.9	44.9	32.8	32.2	46.11	18.71	19.22	43.7	43.7	12.7	13.0
Movement LOS	D	D	C	D	D	D	C	C	D	B	B	D	D	B	B
d_A, Approach Delay [s/veh]	37.44			34.26			21.25			21.48					
Approach LOS	D			C			C			C					
d_I, Intersection Delay [s/veh]	27.18														
Intersection LOS	C														
Intersection V/C	0.506														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	34.67			34.67			34.67			34.67		
I_p,int, Pedestrian LOS Score for Intersection	2.723			2.638			2.910			2.968		
Crosswalk LOS	B			B			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			733			644			667		
d_b, Bicycle Delay [s]	18.05			18.05			20.67			20.00		
I_b,int, Bicycle LOS Score for Intersection	2.040			1.856			1.996			2.029		
Bicycle LOS	B			A			A			B		

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.629

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	23	111	278	304	544	508	88
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	51	51	131	145	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	119	351	380	718	693	95
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	32	95	103	195	188	26
Total Analysis Volume [veh/h]	27	129	381	413	780	752	103
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	19	54	31	31
g / C, Green / Cycle	0.17	0.17	0.26	0.72	0.41	0.41
(v / s)_j Volume / Saturation Flow Rate	0.05	0.14	0.23	0.22	0.21	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	585	476	459	2579	1472	657
d1, Uniform Delay [s]	27.14	29.98	26.95	3.66	16.38	13.82
k, delay calibration	0.11	0.11	0.14	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	3.16	8.50	0.30	1.27	0.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.27	0.80	0.90	0.30	0.51	0.16
d, Delay for Lane Group [s/veh]	27.38	33.14	35.45	3.96	17.65	14.33
Lane Group LOS	C	C	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.16	3.29	7.37	1.08	4.28	1.02
50th-Percentile Queue Length [ft/ln]	29.06	82.30	184.19	27.03	106.91	25.52
95th-Percentile Queue Length [veh/ln]	2.09	5.93	11.82	1.95	7.67	1.84
95th-Percentile Queue Length [ft/ln]	52.31	148.14	295.48	48.65	191.70	45.94

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.38	27.38	33.14	35.45	3.96	17.65	14.33
Movement LOS	C	C	C	D	A	B	B
d_A, Approach Delay [s/veh]	31.47			14.86		17.25	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	19.10						
Intersection LOS	B						
Intersection V/C	0.629						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.539	0.000	2.842
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	5.117	4.838
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.103

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1054	13	0	1059	0	30
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	243	0	0	216	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1381	14	0	1359	0	32
Peak Hour Factor	0.9630	0.9630	1.0000	0.9630	1.0000	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	359	4	0	353	0	8
Total Analysis Volume [veh/h]	1434	15	0	1411	0	33
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	17.58
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.34
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	8.57
d_A, Approach Delay [s/veh]	0.00		0.00		17.58	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.125

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↗↗↗		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	57	682	49	0	667
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	182	0	0	196
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	62	918	53	0	916
Peak Hour Factor	1.0000	0.9430	0.9430	0.9430	1.0000	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	16	243	14	0	243
Total Analysis Volume [veh/h]	0	66	973	56	0	971
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.13	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.81	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.43	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	10.66	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.81		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.41					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	25.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.044

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	8	71	13	683	43	85	648
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	182	0	0	196
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	8	76	14	919	46	92	895
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	20	4	243	12	24	237
Total Analysis Volume [veh/h]	1	8	80	15	971	49	97	946
Pedestrian Volume [ped/h]	0			0			0	



**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.04	0.15	0.05	0.01	0.00	0.14	0.01
d_M, Delay for Movement [s/veh]	25.68	25.68	13.04	18.96	0.00	0.00	11.22	0.00
Movement LOS	D	D	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.15	0.15	0.53	0.16	0.08	0.00	0.50	0.00
95th-Percentile Queue Length [ft/ln]	3.85	3.85	13.28	4.03	2.02	0.00	12.48	0.00
d_A, Approach Delay [s/veh]	14.32			0.27			1.04	
Approach LOS	B			A			A	
d_I, Intersection Delay [s/veh]	1.22							
Intersection LOS	D							

## **OPENING YEAR (2024) WITH PROJECT**

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	5.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.333

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	32	953	129	3	32	810	96	41
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	80	8	0	0	62	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	1109	147	3	35	936	113	44
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	289	38	1	9	244	29	11
Total Analysis Volume [veh/h]	37	1158	153	3	37	977	118	46
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	66	0	0	11	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	93	93	5	93	10	10
g / C, Green / Cycle	0.04	0.77	0.77	0.04	0.77	0.08	0.08
(v / s)_j Volume / Saturation Flow Rate	0.02	0.23	0.10	0.02	0.19	0.07	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	74	3929	1226	77	3937	152	136
d1, Uniform Delay [s]	54.64	0.00	0.00	54.50	0.00	53.74	51.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.12	0.19	0.21	5.39	0.15	8.14	1.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.50	0.29	0.12	0.52	0.25	0.77	0.34
d, Delay for Lane Group [s/veh]	59.75	0.19	0.21	59.89	0.15	61.88	53.13
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	No	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.15	0.07	0.07	1.25	0.05	3.86	1.37
50th-Percentile Queue Length [ft/ln]	28.87	1.74	1.78	31.19	1.37	96.58	34.35
95th-Percentile Queue Length [veh/ln]	2.08	0.13	0.13	2.25	0.10	6.95	2.47
95th-Percentile Queue Length [ft/ln]	51.96	3.13	3.21	56.15	2.47	173.84	61.83

**Movement, Approach, & Intersection Results**

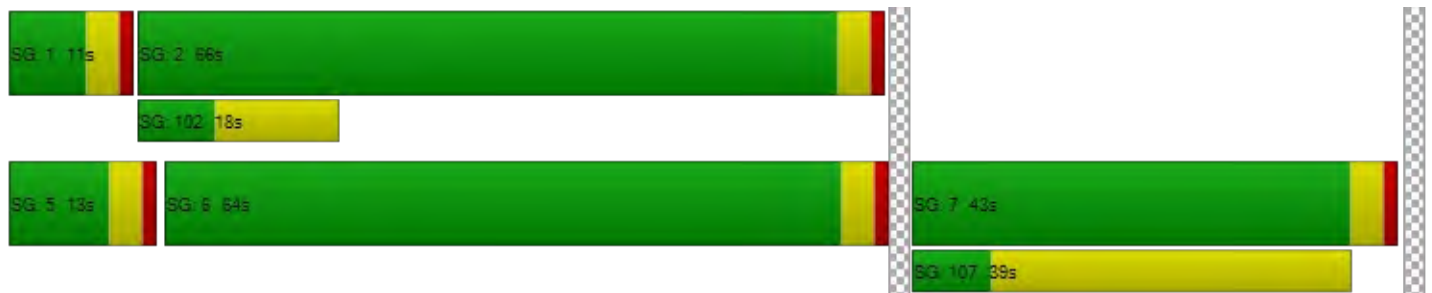
d_M, Delay for Movement [s/veh]	59.75	0.19	0.21	59.89	59.89	0.15	61.88	53.13
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.83			2.50			59.42	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	5.83							
Intersection LOS	A							
Intersection V/C	0.333							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.020	2.050
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.874	4.671	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	37.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	35	147	772	180	72	180	565	117	15	168	389	165	31	230	357	115
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	75	72	47	0	3	60	8	0	6	60	38	0	34	37	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	234	905	242	77	198	670	135	16	187	480	216	33	282	422	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	10	61	237	63	20	52	175	35	4	49	126	57	9	74	110	35
Total Analysis Volume [veh/h]	40	245	948	253	81	207	702	141	17	196	503	226	35	295	442	141
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	9.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	29	47	0	0	18	36	0	0	25	28	0	0	27	30	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	49	49	12	40	40	16	20	20	23	26	26
g / C, Green / Cycle	0.17	0.41	0.41	0.10	0.34	0.34	0.14	0.16	0.16	0.19	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.16	0.19	0.16	0.08	0.14	0.09	0.12	0.14	0.14	0.19	0.12	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	310	2096	654	343	1715	535	243	585	261	341	782	349
d1, Uniform Delay [s]	41.77	12.70	12.38	49.14	19.54	18.68	50.84	48.80	48.85	48.12	41.71	40.09
k, delay calibration	0.19	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.13	0.26	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	16.82	0.71	1.73	5.47	0.73	1.20	9.77	3.85	10.18	27.91	0.64	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.92	0.45	0.39	0.84	0.41	0.26	0.88	0.86	0.87	0.97	0.57	0.40
d, Delay for Lane Group [s/veh]	58.59	13.41	14.11	54.61	20.27	19.88	60.61	52.65	59.04	76.03	42.36	40.84
Lane Group LOS	E	B	B	D	C	B	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	8.63	3.22	2.74	4.15	3.35	2.06	6.76	7.43	7.14	12.12	5.73	3.55
50th-Percentile Queue Length [ft/ln]	215.79	80.55	68.62	103.82	83.69	51.47	169.11	185.76	178.53	302.91	143.33	88.64
95th-Percentile Queue Length [veh/ln]	13.45	5.80	4.94	7.48	6.03	3.71	11.03	11.90	11.52	17.83	9.66	6.38
95th-Percentile Queue Length [ft/ln]	336.25	145.00	123.51	186.88	150.64	92.65	275.75	297.52	288.10	445.63	241.50	159.55

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	58.5	58.5	13.4	14.1	54.6	54.6	20.2	19.8	60.6	60.6	52.6	59.0	76.0	76.0	42.3	40.8
Movement LOS	E	E	B	B	D	D	C	B	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	22.19				28.96				55.98				54.29			
Approach LOS	C				C				E				D			
d_I, Intersection Delay [s/veh]	37.58															
Intersection LOS	D															
Intersection V/C	0.670															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.124				3.255				3.063				3.000			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	717				533				400				433			
d_b, Bicycle Delay [s]	24.70				32.27				38.40				36.82			
I_b,int, Bicycle LOS Score for Intersection	2.355				2.068				2.175				2.069			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	115	31	0	49	97	0	19	0	0	0	29	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	9	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	142	1016	169	88	218	939	27	67	18	90	0	144	15	219
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	38	273	45	24	59	252	7	18	5	24	0	39	4	59
Total Analysis Volume [veh/h]	34	153	1092	182	95	234	1010	29	72	19	97	0	155	16	235
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	19	44	0	0	31	56	0	0	45	0	0	0	45	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	49	49	24	59	59	35	35	35	35
g / C, Green / Cycle	0.12	0.41	0.41	0.20	0.49	0.49	0.29	0.29	0.29	0.29
(v / s)_j Volume / Saturation Flow Rate	0.11	0.21	0.11	0.18	0.20	0.02	0.22	0.06	0.22	0.15
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	418	1589	790	1589
c, Capacity [veh/h]	212	2098	655	353	2501	781	175	461	286	461
d1, Uniform Delay [s]	47.32	13.03	11.90	39.43	6.13	5.58	51.59	32.20	38.62	35.48
k, delay calibration	0.11	0.50	0.50	0.26	0.50	0.50	0.19	0.11	0.19	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.49	0.93	1.06	21.52	0.49	0.09	4.19	0.22	3.47	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.88	0.52	0.28	0.93	0.40	0.04	0.52	0.21	0.60	0.51
d, Delay for Lane Group [s/veh]	58.80	13.96	12.96	60.96	6.62	5.67	55.78	32.42	42.10	36.35
Lane Group LOS	E	B	B	E	A	A	E	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.62	3.78	1.89	10.26	1.90	0.16	2.91	2.20	4.88	5.91
50th-Percentile Queue Length [ft/ln]	140.43	94.61	47.30	256.51	47.38	4.07	72.85	55.00	122.04	147.70
95th-Percentile Queue Length [veh/ln]	9.50	6.81	3.41	15.51	3.41	0.29	5.25	3.96	8.51	9.89
95th-Percentile Queue Length [ft/ln]	237.60	170.30	85.14	387.84	85.29	7.33	131.13	99.00	212.63	247.35

**Movement, Approach, & Intersection Results**

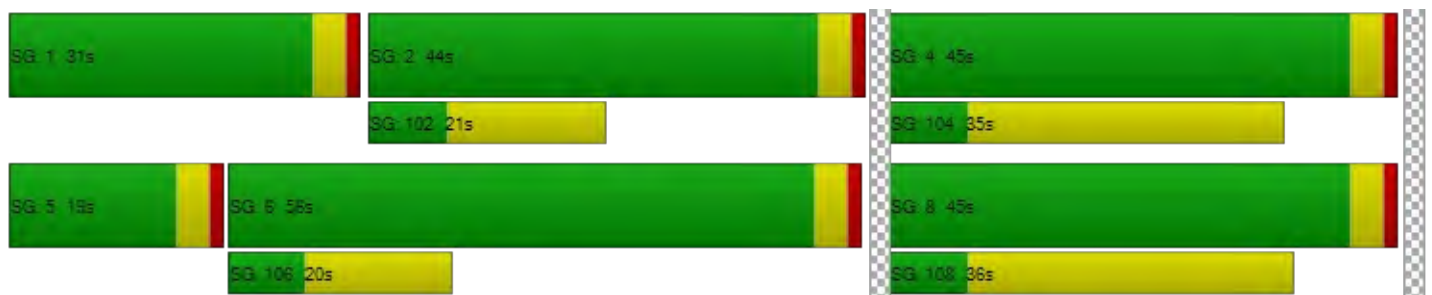
d_M, Delay for Movement [s/veh]	58.8	58.8	13.9	12.9	60.9	60.9	6.62	5.67	55.78	55.78	32.42	42.1	42.1	42.1	36.3	
Movement LOS	E	E	B	B	E	E	A	A	E	E	C	D	D	D	D	
d_A, Approach Delay [s/veh]	19.58				19.67				43.73				38.77			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	23.21															
Intersection LOS	C															
Intersection V/C	0.649															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.428				3.235				2.059				2.402			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	667				867				683				683			
d_b, Bicycle Delay [s]	26.67				19.27				26.00				26.00			
I_b,int, Bicycle LOS Score for Intersection	2.344				2.183				1.870				1.974			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.658

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	14	15	1027	409	19	140	872	33	20	17	39	11	542	20	161
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	157	20	0	14	112	0	0	0	0	0	14	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	16	1265	462	21	165	1053	36	22	19	42	12	599	22	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9750	0.9750	0.9750	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	4	324	118	5	42	270	9	6	5	11	3	154	6	48
Total Analysis Volume [veh/h]	15	16	1297	474	22	169	1080	37	23	19	43	12	614	23	191
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	13.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	54	0	0	22	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	58	58	15	68	68	7	7	25	25	25
g / C, Green / Cycle	0.04	0.49	0.49	0.12	0.57	0.57	0.05	0.05	0.20	0.20	0.20
(v / s)_j Volume / Saturation Flow Rate	0.02	0.25	0.30	0.11	0.21	0.21	0.02	0.03	0.18	0.18	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1838	1820	1589	1781	1787	1589
c, Capacity [veh/h]	68	2469	770	217	2024	1045	100	87	365	366	326
d1, Uniform Delay [s]	54.97	6.92	7.26	46.95	1.42	1.42	54.85	55.07	46.36	46.34	43.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.25	0.25	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.69	0.80	3.66	10.88	0.51	0.98	2.78	4.23	15.10	14.86	1.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.46	0.53	0.62	0.88	0.36	0.36	0.42	0.49	0.89	0.89	0.59
d, Delay for Lane Group [s/veh]	59.66	7.73	10.92	57.83	1.93	2.40	57.62	59.30	61.46	61.20	44.77
Lane Group LOS	E	A	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.98	2.68	3.57	5.68	0.65	0.81	1.32	1.38	10.90	10.89	5.28
50th-Percentile Queue Length [ft/ln]	24.45	66.98	89.23	142.01	16.31	20.29	32.93	34.43	272.39	272.21	131.99
95th-Percentile Queue Length [veh/ln]	1.76	4.82	6.42	9.59	1.17	1.46	2.37	2.48	16.31	16.30	9.05
95th-Percentile Queue Length [ft/ln]	44.00	120.57	160.61	239.73	29.36	36.52	59.28	61.98	407.72	407.50	226.20

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.6	59.6	7.73	10.9	57.8	57.8	2.08	2.40	57.62	57.62	59.30	61.4	61.3	61.2	44.7
Movement LOS	E	E	A	B	E	E	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	9.46			10.23			58.47			57.56					
Approach LOS	A			B			E			E					
d_I, Intersection Delay [s/veh]	20.76														
Intersection LOS	C														
Intersection V/C	0.658														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.219			1.998			2.511		
Crosswalk LOS	F			C			A			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	833			1017			117			483		
d_b, Bicycle Delay [s]	20.42			14.50			53.20			34.50		
I_b,int, Bicycle LOS Score for Intersection	2.542			2.186			1.700			2.926		
Bicycle LOS	B			B			A			C		

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.463

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	0	35	266	181	1	49	253	80	69	461	45	2	154	459	37
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	41	35	0	3	32	2	0	66	8	0	36	105	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	64	328	231	1	56	305	89	74	563	56	2	202	600	42
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.9630	0.9630	0.9630	0.96	0.96	0.96	0.96
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	17	85	60	0	15	79	23	19	146	15	1	52	156	11
Total Analysis Volume [veh/h]	0	66	341	240	1	58	317	92	77	585	58	2	210	623	44
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	13	39	0	0	11	37	0	11	33	0	0	12	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	17	17	6	17	17	6	43	43	13	50	50
g / C, Green / Cycle	0.06	0.18	0.18	0.06	0.18	0.18	0.06	0.45	0.45	0.14	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.04	0.10	0.15	0.03	0.09	0.06	0.04	0.12	0.12	0.12	0.12	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1786	1781	3560	1808
c, Capacity [veh/h]	110	646	289	106	637	284	116	1601	803	252	1873	951
d1, Uniform Delay [s]	43.48	35.25	37.54	43.54	35.21	34.04	43.49	16.37	16.40	39.83	12.20	12.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	5.11	0.67	6.15	4.55	0.60	0.65	6.45	0.41	0.83	7.49	0.30	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.60	0.53	0.83	0.56	0.50	0.32	0.67	0.27	0.27	0.84	0.24	0.24
d, Delay for Lane Group [s/veh]	48.60	35.92	43.69	48.09	35.81	34.69	49.94	16.78	17.22	47.32	12.50	12.79
Lane Group LOS	D	D	D	D	D	C	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.63	3.51	5.66	1.45	3.25	1.84	1.91	2.74	2.88	5.12	2.32	2.45
50th-Percentile Queue Length [ft/ln]	40.67	87.72	141.59	36.17	81.19	46.11	47.72	68.53	71.95	128.12	58.12	61.28
95th-Percentile Queue Length [veh/ln]	2.93	6.32	9.57	2.60	5.85	3.32	3.44	4.93	5.18	8.84	4.18	4.41
95th-Percentile Queue Length [ft/ln]	73.21	157.90	239.17	65.11	146.14	82.99	85.89	123.36	129.51	220.94	104.62	110.31



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	48.6	48.6	35.9	43.6	48.0	48.0	35.8	34.6	49.94	16.90	17.22	47.3	47.3	12.5	12.7	
Movement LOS	D	D	D	D	D	D	D	C	D	B	B	D	D	B	B	
d_A, Approach Delay [s/veh]	40.09				37.14				20.46				20.97			
Approach LOS	D				D				C				C			
d_I, Intersection Delay [s/veh]	28.18															
Intersection LOS	C															
Intersection V/C	0.463															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	37.14				37.14				37.14				37.14			
I_p,int, Pedestrian LOS Score for Intersection	2.722				2.657				2.910				2.964			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	737				695				611				632			
d_b, Bicycle Delay [s]	18.95				20.23				22.93				22.24			
I_b,int, Bicycle LOS Score for Intersection	2.039				1.898				1.956				2.042			
Bicycle LOS	B				A				A				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.593

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	27	109	320	280	578	564	77
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	43	38	78	56	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	117	388	340	702	665	83
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	31	103	90	187	177	22
Total Analysis Volume [veh/h]	31	124	413	362	747	707	88
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	20	51	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	14	18	58	35	35
g / C, Green / Cycle	0.18	0.18	0.23	0.72	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.04	0.15	0.20	0.21	0.20	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	617	502	409	2569	1573	702
d1, Uniform Delay [s]	28.29	31.67	29.82	3.93	15.56	13.20
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	3.44	6.84	0.29	0.93	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.25	0.82	0.88	0.29	0.45	0.13
d, Delay for Lane Group [s/veh]	28.50	35.11	36.66	4.21	16.49	13.57
Lane Group LOS	C	D	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.23	3.85	6.84	1.23	4.00	0.87
50th-Percentile Queue Length [ft/ln]	30.75	96.37	170.96	30.80	99.96	21.83
95th-Percentile Queue Length [veh/ln]	2.21	6.94	11.13	2.22	7.20	1.57
95th-Percentile Queue Length [ft/ln]	55.35	173.46	278.18	55.44	179.93	39.29

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	28.50	28.50	35.11	36.66	4.21	16.49	13.57
Movement LOS	C	C	D	D	A	B	B
d_A, Approach Delay [s/veh]	33.31			14.81		16.17	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	19.50						
Intersection LOS	B						
Intersection V/C	0.593						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.90	0.00	18.23
I_p,int, Pedestrian LOS Score for Intersection	2.535	0.000	2.815
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	40.00	40.00	40.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.047	4.788
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.204

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	lr				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1079	20	0	986	0	46
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	182	0	0	132	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	16	0	0	16	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1363	22	0	1212	0	65
Peak Hour Factor	0.9740	0.9740	1.0000	0.9740	1.0000	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	350	6	0	311	0	17
Total Analysis Volume [veh/h]	1399	23	0	1244	0	67
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.20
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	18.79
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.75
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	18.84
d_A, Approach Delay [s/veh]	0.00		0.00		18.79	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	C					



**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.221

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	91	718	81	0	728
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	92	18	0	81
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	4	2	6	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	114	869	112	0	871
Peak Hour Factor	1.0000	0.9420	0.9420	0.9420	1.0000	0.9420
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	30	231	30	0	231
Total Analysis Volume [veh/h]	0	121	923	119	0	925
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.22	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	13.44	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.84	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	20.98	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.44		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.78					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.146

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	15	81	10	745	53	113	706
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	12	0	104	0	24	75
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	4	0	6	0	8	2
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	24	104	10	914	58	154	839
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	27	3	236	15	40	217
Total Analysis Volume [veh/h]	1	25	108	10	945	60	159	868
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.15	0.20	0.03	0.01	0.00	0.23	0.01
d_M, Delay for Movement [s/veh]	29.69	29.69	13.36	17.08	0.00	0.00	11.84	0.00
Movement LOS	D	D	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.52	0.52	0.74	0.10	0.05	0.00	0.89	0.00
95th-Percentile Queue Length [ft/ln]	13.02	13.02	18.58	2.51	1.25	0.00	22.37	0.00
d_A, Approach Delay [s/veh]	16.53			0.17			1.83	
Approach LOS	C			A			A	
d_I, Intersection Delay [s/veh]	1.96							
Intersection LOS	D							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	4.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.332

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	26	1003	182	2	0	1003	89	48
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	76	5	0	0	97	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	1159	202	2	0	1180	101	52
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	300	52	1	0	305	26	13
Total Analysis Volume [veh/h]	29	1200	209	2	0	1222	105	54
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	11	59	0	0	18	66	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	98	98	0	94	9	9
g / C, Green / Cycle	0.04	0.82	0.82	0.00	0.79	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.13	0.00	0.24	0.06	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	65	4167	1300	7	4004	138	124
d1, Uniform Delay [s]	55.22	0.00	0.00	59.40	0.00	54.23	52.83
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.83	0.17	0.26	17.96	0.20	8.21	2.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.45	0.29	0.16	0.27	0.31	0.76	0.44
d, Delay for Lane Group [s/veh]	60.05	0.17	0.26	77.36	0.20	62.45	55.25
Lane Group LOS	E	A	A	E	A	E	E
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.91	0.07	0.10	0.10	0.07	3.45	1.65
50th-Percentile Queue Length [ft/ln]	22.84	1.68	2.39	2.42	1.83	86.26	41.34
95th-Percentile Queue Length [veh/ln]	1.64	0.12	0.17	0.17	0.13	6.21	2.98
95th-Percentile Queue Length [ft/ln]	41.11	3.03	4.31	4.36	3.29	155.27	74.41



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	60.05	0.17	0.26	77.36	77.36	0.20	62.45	55.25
Movement LOS	E	A	A	E	E	A	E	E
d_A, Approach Delay [s/veh]	1.40			0.32			60.00	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	4.23							
Intersection LOS	A							
Intersection V/C	0.332							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.068	2.054
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.923	4.806	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	54.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.929

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	29	127	868	182	82	224	837	232	4	156	960	273	33	218	470	105
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	62	64	50	0	8	78	16	0	4	59	52	0	63	60	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	199	1001	247	89	250	981	266	4	172	1095	347	36	298	568	126
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	0.92	0.92	0.92	0.92
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	8	54	271	67	24	68	265	72	1	46	296	94	10	81	154	34
Total Analysis Volume [veh/h]	34	215	1082	267	96	270	1061	288	4	186	1184	375	39	322	614	136
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	18.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	20	38	0	0	18	36	0	0	22	39	0	0	25	42	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	34	34	14	32	32	15	35	35	21	41	41
g / C, Green / Cycle	0.13	0.28	0.28	0.12	0.27	0.27	0.12	0.29	0.29	0.18	0.34	0.34
(v / s)_j Volume / Saturation Flow Rate	0.14	0.21	0.17	0.11	0.21	0.18	0.11	0.32	0.24	0.20	0.17	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3740	1589	1781	3560	1589
c, Capacity [veh/h]	237	1443	450	404	1358	424	220	1091	464	312	1222	546
d1, Uniform Delay [s]	46.67	28.19	26.59	47.70	30.35	29.25	51.61	42.50	39.40	49.50	31.27	28.30
k, delay calibration	0.13	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.32	0.31	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	43.01	3.62	5.65	7.91	4.52	8.50	9.74	42.89	9.36	91.71	0.32	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	1.05	0.75	0.59	0.91	0.78	0.68	0.86	1.09	0.81	1.16	0.50	0.25
d, Delay for Lane Group [s/veh]	89.68	31.81	32.24	55.61	34.87	37.75	61.36	85.39	48.76	141.21	31.59	28.53
Lane Group LOS	F	C	C	E	C	D	E	F	D	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.17	7.41	5.37	5.31	7.79	6.50	6.06	21.93	11.04	16.98	6.85	2.76
50th-Percentile Queue Length [ft/ln]	229.24	185.29	134.22	132.69	194.80	162.56	151.39	548.34	276.10	424.55	171.14	68.96
95th-Percentile Queue Length [veh/ln]	14.43	11.88	9.17	9.09	12.37	10.68	10.09	31.16	16.49	25.49	11.14	4.97
95th-Percentile Queue Length [ft/ln]	360.77	296.90	229.21	227.14	309.25	267.11	252.28	779.10	412.36	637.30	278.41	124.13

**Movement, Approach, & Intersection Results**

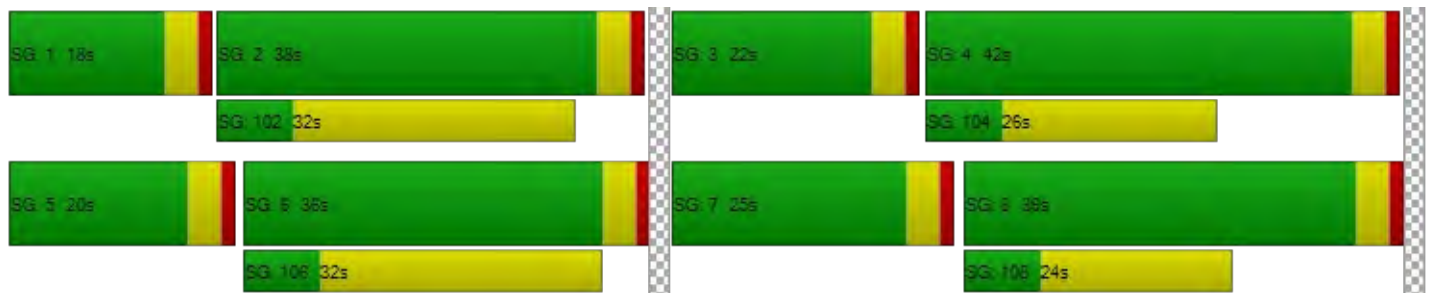
d_M, Delay for Movement [s/veh]	89.6	89.6	31.8	32.2	55.6	55.6	34.8	37.7	61.3	61.3	85.3	48.7	141.	141.	31.5	28.5
Movement LOS	F	F	C	C	E	E	C	D	E	E	F	D	F	F	C	C
d_A, Approach Delay [s/veh]	40.90				39.78				74.93				66.84			
Approach LOS	D				D				E				E			
d_I, Intersection Delay [s/veh]	54.90															
Intersection LOS	D															
Intersection V/C	0.929															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.216				3.335				3.263				3.199			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	567				533				583				633			
d_b, Bicycle Delay [s]	30.82				32.27				30.10				28.02			
I_b,int, Bicycle LOS Score for Intersection	2.420				2.354				2.849				2.211			
Bicycle LOS	B				B				C				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	133	15	0	24	179	0	16	0	0	0	14	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	15	0	24	0	0	0	0	0	0	13	0	22
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	72	1104	107	109	234	1387	10	81	31	134	0	118	13	186
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	18	278	27	27	59	349	3	20	8	34	0	30	3	47
Total Analysis Volume [veh/h]	18	72	1111	108	110	235	1395	10	81	31	135	0	119	13	187
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	76.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	13	39	0	0	34	60	0	0	47	0	0	0	47	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	50	50	25	68	68	33	33	33	33
g / C, Green / Cycle	0.06	0.42	0.42	0.21	0.56	0.56	0.27	0.27	0.27	0.27
(v / s)_j Volume / Saturation Flow Rate	0.05	0.22	0.07	0.19	0.27	0.01	0.21	0.08	0.19	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	528	1589	708	1589
c, Capacity [veh/h]	112	2130	665	370	2866	894	196	436	251	436
d1, Uniform Delay [s]	52.99	12.47	11.01	38.45	1.75	1.63	50.67	34.52	38.90	35.80
k, delay calibration	0.11	0.50	0.50	0.29	0.50	0.50	0.16	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.45	0.92	0.52	22.38	0.59	0.02	3.81	0.40	1.70	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.52	0.16	0.93	0.49	0.01	0.57	0.31	0.53	0.43
d, Delay for Lane Group [s/veh]	65.44	13.39	11.53	60.83	2.34	1.66	54.48	34.92	40.60	36.47
Lane Group LOS	E	B	B	E	A	A	D	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.93	3.73	1.05	10.77	0.95	0.02	3.53	3.22	3.63	4.64
50th-Percentile Queue Length [ft/ln]	73.20	93.22	26.19	269.15	23.73	0.55	88.28	80.59	90.77	116.06
95th-Percentile Queue Length [veh/ln]	5.27	6.71	1.89	16.15	1.71	0.04	6.36	5.80	6.54	8.18
95th-Percentile Queue Length [ft/ln]	131.77	167.79	47.14	403.68	42.71	0.99	158.91	145.07	163.39	204.40

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	65.4	65.4	13.3	11.5	60.8	60.8	2.34	1.66	54.48	54.48	34.92	40.6	40.6	40.6	36.4	
Movement LOS	E	E	B	B	E	E	A	A	D	D	C	D	D	D	D	
d_A, Approach Delay [s/veh]	16.82				13.87				43.79				38.18			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	19.11															
Intersection LOS	B															
Intersection V/C	0.657															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.406				3.299				2.047				2.311			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	583				933				717				717			
d_b, Bicycle Delay [s]	30.10				17.07				24.70				24.70			
I_b,int, Bicycle LOS Score for Intersection	2.270				2.393				1.967				1.890			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.685

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	23	921	382	32	170	1143	24	11	14	34	8	578	9	139
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	155	22	0	11	182	0	0	0	0	0	22	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	25	1149	434	35	194	1416	26	12	15	37	8	646	9	161
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.9550	0.9550	0.9550	0.95	0.95	0.95	0.95
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	301	114	9	51	371	7	3	4	10	2	169	2	42
Total Analysis Volume [veh/h]	17	26	1203	454	37	203	1483	27	13	16	39	8	676	9	169
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	27.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	49	0	0	24	62	0	0	11	0	0	0	36	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	54	54	18	66	66	6	6	26	26	26
g / C, Green / Cycle	0.04	0.45	0.45	0.15	0.55	0.55	0.05	0.05	0.22	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.24	0.29	0.13	0.28	0.28	0.02	0.02	0.19	0.19	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1853	1829	1589	1781	1783	1589
c, Capacity [veh/h]	80	2276	710	265	1960	1020	96	83	390	390	348
d1, Uniform Delay [s]	54.32	10.00	10.61	44.33	2.44	2.44	54.74	55.22	45.46	45.45	40.97
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.25	0.25	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.88	4.38	11.63	0.94	1.80	1.74	4.03	14.56	14.46	1.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.53	0.64	0.91	0.51	0.51	0.30	0.47	0.89	0.89	0.49
d, Delay for Lane Group [s/veh]	59.85	10.88	14.99	55.96	3.38	4.24	56.48	59.25	60.01	59.91	42.02
Lane Group LOS	E	B	B	E	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	3.36	4.55	7.01	1.38	1.68	0.90	1.25	11.54	11.53	4.48
50th-Percentile Queue Length [ft/ln]	33.71	84.02	113.79	175.33	34.52	42.03	22.47	31.25	288.45	288.33	112.05
95th-Percentile Queue Length [veh/ln]	2.43	6.05	8.05	11.36	2.49	3.03	1.62	2.25	17.11	17.10	7.95
95th-Percentile Queue Length [ft/ln]	60.68	151.24	201.26	283.91	62.14	75.66	40.45	56.25	427.72	427.56	198.86

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	10.8	14.9	55.9	55.9	3.66	4.24	56.48	56.48	59.25	60.0	59.9	59.9	42.0	
Movement LOS	E	E	B	B	E	E	A	A	E	E	E	E	E	E	D	
d_A, Approach Delay [s/veh]	13.22				10.84				58.07				56.45			
Approach LOS	B				B				E				E			
d_I, Intersection Delay [s/veh]	21.47															
Intersection LOS	C															
Intersection V/C	0.685															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	0.00				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000				3.259				1.989				2.519			
Crosswalk LOS	F				C				A				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	750				967				117				533			
d_b, Bicycle Delay [s]	23.44				16.02				53.20				32.27			
I_b,int, Bicycle LOS Score for Intersection	2.480				2.410				1.672				2.969			
Bicycle LOS	B				B				A				C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.777

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	2	38	369	271	0	136	551	121	109	1074	113	0	197	564	43
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	16	47	28	0	2	45	6	0	125	26	0	43	90	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	57	446	321	0	149	639	137	117	1285	148	0	255	699	48
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	1	14	113	82	0	38	162	35	30	326	38	0	65	178	12
Total Analysis Volume [veh/h]	2	58	453	326	0	151	649	139	119	1306	150	0	259	710	49
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	16	33	0	0	17	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	21	21	7	23	23	8	30	30	15	38	38
g / C, Green / Cycle	0.06	0.24	0.24	0.08	0.26	0.26	0.09	0.34	0.34	0.17	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.03	0.13	0.21	0.08	0.18	0.09	0.07	0.27	0.27	0.15	0.14	0.14
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1773	1781	3560	1809
c, Capacity [veh/h]	110	850	380	140	911	407	154	1197	596	301	1491	758
d1, Uniform Delay [s]	41.08	29.93	32.86	41.54	30.54	27.37	40.34	27.33	27.33	36.44	17.74	17.74
k, delay calibration	0.11	0.11	0.13	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.17	0.52	6.88	58.39	1.05	0.50	8.04	6.06	11.50	7.18	0.61	1.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.55	0.53	0.86	1.08	0.71	0.34	0.77	0.81	0.81	0.86	0.34	0.34
d, Delay for Lane Group [s/veh]	45.25	30.45	39.75	99.93	31.59	27.86	48.38	33.39	38.83	43.62	18.35	18.95
Lane Group LOS	D	C	D	F	C	C	D	C	D	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.38	4.14	7.17	5.27	6.20	2.39	2.81	9.71	10.58	5.83	3.33	3.52
50th-Percentile Queue Length [ft/ln]	34.47	103.53	179.33	131.73	155.04	59.64	70.15	242.77	264.39	145.63	83.31	88.07
95th-Percentile Queue Length [veh/ln]	2.48	7.45	11.57	9.26	10.29	4.29	5.05	14.82	15.91	9.78	6.00	6.34
95th-Percentile Queue Length [ft/ln]	62.05	186.36	289.14	231.42	257.14	107.34	126.28	370.53	397.73	244.59	149.95	158.53

**Movement, Approach, & Intersection Results**

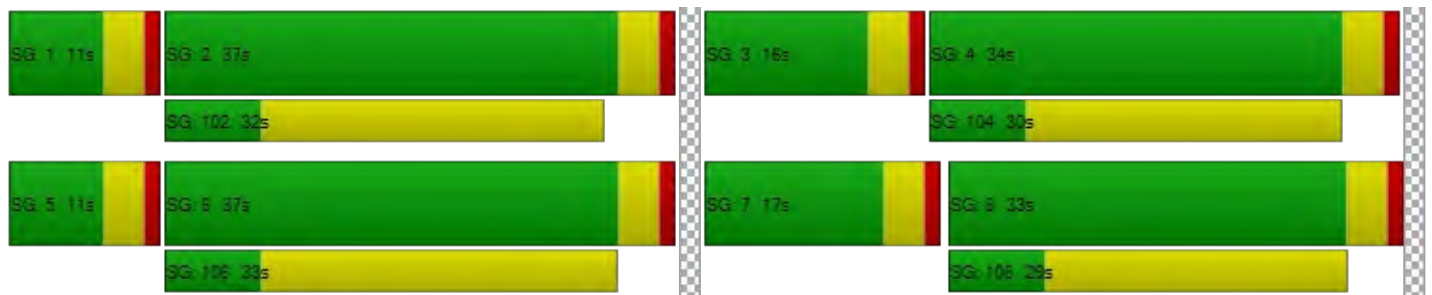
d_M, Delay for Movement [s/veh]	45.2	45.2	30.4	39.7	99.9	99.9	31.5	27.8	48.38	34.78	38.83	43.6	43.6	18.5	18.9	
Movement LOS	D	D	C	D	F	F	C	C	D	C	D	D	D	B	B	
d_A, Approach Delay [s/veh]	35.12				42.03				36.20				24.93			
Approach LOS	D				D				D				C			
d_I, Intersection Delay [s/veh]	34.62															
Intersection LOS	C															
Intersection V/C	0.777															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	34.67				34.67				34.67				34.67			
I_p,int, Pedestrian LOS Score for Intersection	2.863				2.790				3.112				3.179			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	733				733				644				667			
d_b, Bicycle Delay [s]	18.05				18.05				20.67				20.00			
I_b,int, Bicycle LOS Score for Intersection	2.204				2.210				2.426				2.120			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.725

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	37	457	415	349	1247	600	150
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	52	49	69	93	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	493	500	426	1415	741	162
Peak Hour Factor	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270	0.9270
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	133	135	115	382	200	44
Total Analysis Volume [veh/h]	43	532	539	460	1526	799	175
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	33	33	25	56	35	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0
Pedestrian Clearance [s]	0	22	0	0	24	24	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	19	24	58	30	30
g / C, Green / Cycle	0.22	0.22	0.28	0.68	0.35	0.35
(v / s)_j Volume / Saturation Flow Rate	0.17	0.19	0.26	0.43	0.22	0.11
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	772	628	504	2431	1256	561
d1, Uniform Delay [s]	30.78	31.75	29.49	7.49	22.97	20.02
k, delay calibration	0.11	0.11	0.24	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.45	3.55	13.35	1.24	2.47	1.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.74	0.86	0.91	0.63	0.64	0.31
d, Delay for Lane Group [s/veh]	32.23	35.30	42.84	8.73	25.44	21.47
Lane Group LOS	C	D	D	A	C	C
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.33	5.32	10.02	5.35	6.35	2.48
50th-Percentile Queue Length [ft/ln]	133.34	132.89	250.61	133.84	158.65	62.10
95th-Percentile Queue Length [veh/ln]	9.12	9.10	15.22	9.15	10.48	4.47
95th-Percentile Queue Length [ft/ln]	228.03	227.42	380.42	228.70	261.93	111.79

**Movement, Approach, & Intersection Results**

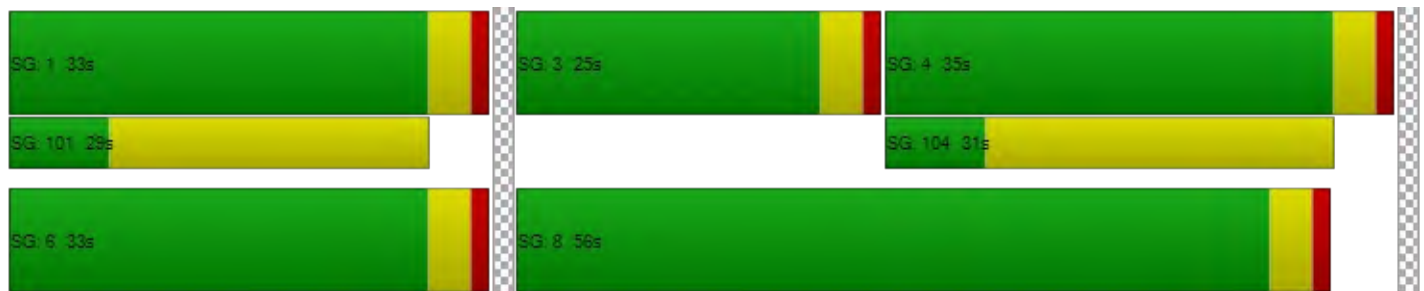
d_M, Delay for Movement [s/veh]	32.23	32.23	35.30	42.84	8.73	25.44	21.47
Movement LOS	C	C	D	D	A	C	C
d_A, Approach Delay [s/veh]	33.71			16.63		24.72	
Approach LOS	C			B		C	
d_I, Intersection Delay [s/veh]	23.24						
Intersection LOS	C						
Intersection V/C	0.725						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	32.21	0.00	32.21
I_p,int, Pedestrian LOS Score for Intersection	2.751	0.000	3.282
Crosswalk LOS	C	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	42.50	42.50	42.50
I_b,int, Bicycle LOS Score for Intersection	4.132	5.771	4.936
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report  
Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.086

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1179	11	0	1350	0	13
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	171	0	0	193	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	22	0	0	24	0	6
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1466	12	0	1674	0	25
Peak Hour Factor	0.9750	0.9750	1.0000	0.9750	1.0000	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	376	3	0	429	0	6
Total Analysis Volume [veh/h]	1504	12	0	1717	0	26
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.02	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	18.01
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	6.99
d_A, Approach Delay [s/veh]	0.00		0.00		18.01	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.14					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.285

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	72	1374	66	0	813
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	108	9	0	136
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	5	3	9	0	6
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	87	1594	89	0	1020
Peak Hour Factor	1.0000	0.9660	0.9660	0.9660	1.0000	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	23	413	23	0	264
Total Analysis Volume [veh/h]	0	90	1650	92	0	1056
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.29	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	20.89	0.00	0.00	0.00	0.00
Movement LOS		C	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	1.15	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	28.74	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.89		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	64.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.267

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	0	14	79	6	1393	45	104	798
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	5	0	113	0	12	133
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	3	6	0	8	0	12	3
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	21	96	6	1625	48	136	997
Peak Hour Factor	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680	0.9680
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	25	2	420	12	35	257
Total Analysis Volume [veh/h]	0	22	99	6	1679	50	140	1030
Pedestrian Volume [ped/h]	0			0			0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.27	0.32	0.03	0.02	0.00	0.39	0.01
d_M, Delay for Movement [s/veh]	63.97	63.97	22.07	20.42	0.00	0.00	21.15	0.00
Movement LOS	F	F	C	C	A	A	C	A
95th-Percentile Queue Length [veh/ln]	0.97	0.97	1.35	0.08	0.04	0.00	1.78	0.00
95th-Percentile Queue Length [ft/ln]	24.24	24.24	33.67	1.92	0.96	0.00	44.62	0.00
d_A, Approach Delay [s/veh]	29.69			0.07			2.53	
Approach LOS	D			A			A	
d_I, Intersection Delay [s/veh]	2.21							
Intersection LOS	F							

**Intersection Level Of Service Report**  
**Intersection 1: Avalon Blvd (NS) at Turmont St (EW)**

Control Type:	Signalized	Delay (sec / veh):	5.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.340

**Intersection Setup**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Approach	Northbound			Southbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Thru	Right	U-turn	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0
Pocket Length [ft]	45.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00	
Grade [%]	0.00			0.00			0.00	
Curb Present	No			No			No	
Crosswalk	No			Yes			Yes	

**Volumes**

Name	Avalon Blvd			Avalon Blvd			Turmont St	
Base Volume Input [veh/h]	35	845	154	1	39	881	103	39
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	140	11	0	0	181	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	1053	177	1	42	1132	122	42
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	273	46	0	11	293	32	11
Total Analysis Volume [veh/h]	39	1091	183	1	44	1173	126	44
Presence of On-Street Parking	No		No	No		No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0	
v_di, Inbound Pedestrian Volume crossing major street	0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0	
Bicycle Volume [bicycles/h]	0			0			0	



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Protected	Permissiv	Permissiv	Permissiv	Protected	Permissiv	Permissive	Permissive
Signal group	5	2	0	0	1	6	7	0
Auxiliary Signal Groups								
Lead / Lag	Lead	-	-	-	Lead	-	Lead	-
Minimum Green [s]	7	7	0	0	7	7	7	0
Maximum Green [s]	30	30	0	0	30	30	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0
Split [s]	13	65	0	0	12	64	43	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	0	7	7	0
Pedestrian Clearance [s]	0	11	0	0	0	11	32	0
Rest In Walk		No				No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No			No	No	No	
Maximum Recall	No	No			No	No	No	
Pedestrian Recall	No	No			No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	L	R
C, Cycle Length [s]	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	92	92	5	92	11	11
g / C, Green / Cycle	0.04	0.77	0.77	0.05	0.77	0.09	0.09
(v / s)_j Volume / Saturation Flow Rate	0.02	0.21	0.12	0.03	0.23	0.07	0.03
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1781	1589
c, Capacity [veh/h]	76	3894	1215	81	3909	160	143
d1, Uniform Delay [s]	54.53	0.00	0.00	54.28	0.00	53.47	51.10
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.26	0.18	0.26	5.83	0.20	8.22	1.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.51	0.28	0.15	0.56	0.30	0.79	0.31
d, Delay for Lane Group [s/veh]	59.79	0.18	0.26	60.11	0.20	61.69	52.30
Lane Group LOS	E	A	A	E	A	E	D
Critical Lane Group	Yes	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.22	0.06	0.09	1.40	0.07	4.12	1.30
50th-Percentile Queue Length [ft/ln]	30.40	1.62	2.21	35.08	1.79	103.03	32.53
95th-Percentile Queue Length [veh/ln]	2.19	0.12	0.16	2.53	0.13	7.42	2.34
95th-Percentile Queue Length [ft/ln]	54.72	2.92	3.99	63.15	3.21	185.45	58.55

**Movement, Approach, & Intersection Results**

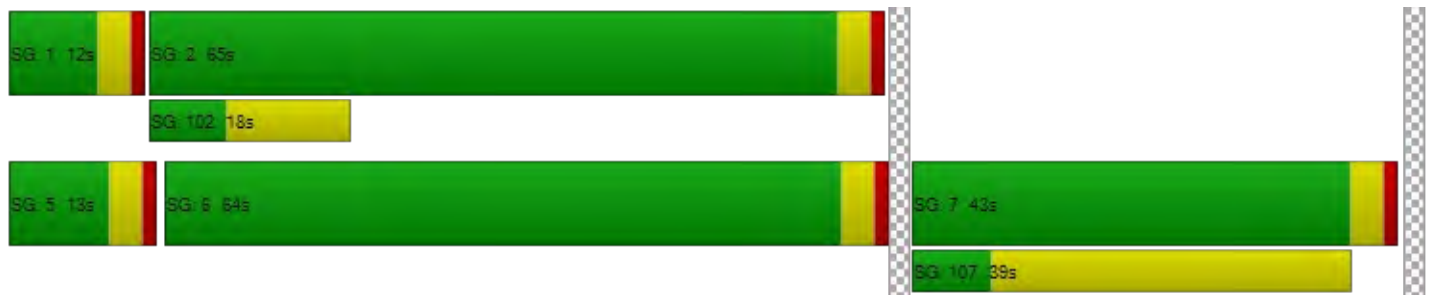
d_M, Delay for Movement [s/veh]	59.79	0.18	0.26	60.11	60.11	0.20	61.69	52.30
Movement LOS	E	A	A	E	E	A	E	D
d_A, Approach Delay [s/veh]	1.96			2.41			59.26	
Approach LOS	A			A			E	
d_I, Intersection Delay [s/veh]	5.77							
Intersection LOS	A							
Intersection V/C	0.340							

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	49.50	49.50
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.045	2.062
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.855	4.778	4.132
Bicycle LOS	E	E	D

**Sequence**

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 2: Avalon Blvd (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	38.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.749

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration																
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	2	0	0	0	1	0	0	0	1	0	0	1
Pocket Length [ft]	180.	100.	100.	309.	115.	100.	100.	100.	160.	100.	100.	100.	194.	100.	100.	205.
Speed [mph]	35.00				35.00				45.00				45.00			
Grade [%]	0.00				0.00				0.00				0.00			
Curb Present	No				No				No				No			
Crosswalk	Yes				Yes				Yes				Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd			
Base Volume Input [veh/h]	55	126	707	194	78	147	656	138	11	135	361	168	35	211	294	109
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	111	120	72	0	14	121	57	0	7	121	71	0	75	110	24
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	247	883	281	84	173	829	206	12	152	510	252	38	303	427	141
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Other Adjustment 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	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	15	63	225	72	21	44	212	53	3	39	130	64	10	77	109	36
Total Analysis Volume [veh/h]	61	252	902	287	86	177	847	210	12	155	521	257	39	309	436	144
Presence of On-Street Parking	No			No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0				0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0				0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0				0			
Bicycle Volume [bicycles/h]	0				0				0				0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	8.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	3	8	0	0	7	4	0
Auxiliary Signal Groups																
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	28	47	0	0	17	36	0	0	22	28	0	0	28	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	25	0	0	0	17	0	0	0	19	0
Rest In Walk			No			No				No				No		
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No			No	No			No	No	
Maximum Recall		No	No			No	No			No	No			No	No	
Pedestrian Recall		No	No			No	No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23	47	47	11	36	36	13	22	22	24	33	33
g / C, Green / Cycle	0.19	0.39	0.39	0.09	0.30	0.30	0.11	0.18	0.18	0.20	0.27	0.27
(v / s)_j Volume / Saturation Flow Rate	0.18	0.18	0.18	0.08	0.17	0.13	0.09	0.15	0.16	0.20	0.12	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	1781	3560	1589	1781	3560	1589
c, Capacity [veh/h]	335	2005	626	318	1514	472	196	645	288	356	964	430
d1, Uniform Delay [s]	40.43	14.31	14.36	49.87	24.80	23.87	52.41	47.13	48.00	47.73	36.36	35.08
k, delay calibration	0.23	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.19	0.29	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	20.65	0.73	2.42	5.43	1.50	3.01	9.80	2.47	15.17	31.13	0.33	0.45
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.93	0.45	0.46	0.83	0.56	0.44	0.85	0.81	0.89	0.98	0.45	0.33
d, Delay for Lane Group [s/veh]	61.08	15.04	16.77	55.30	26.29	26.88	62.21	49.60	63.16	78.85	36.69	35.54
Lane Group LOS	E	B	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	9.75	3.37	3.52	3.82	4.88	3.78	5.35	7.46	8.49	13.07	5.20	3.34
50th-Percentile Queue Length [ft/ln]	243.83	84.37	87.96	95.62	122.11	94.45	133.63	186.61	212.24	326.79	129.88	83.43
95th-Percentile Queue Length [veh/ln]	14.87	6.07	6.33	6.88	8.51	6.80	9.14	11.94	13.27	19.00	8.93	6.01
95th-Percentile Queue Length [ft/ln]	371.87	151.87	158.32	172.12	212.72	170.00	228.43	298.62	331.70	475.02	223.33	150.18

**Movement, Approach, & Intersection Results**

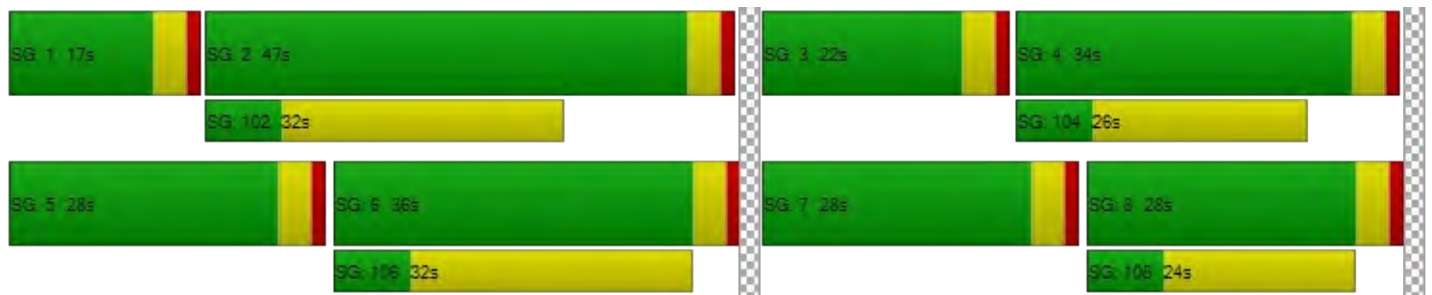
d_M, Delay for Movement [s/veh]	61.0	61.0	15.0	16.7	55.3	55.3	26.2	26.8	62.2	62.2	49.6	63.1	78.8	78.8	36.6	35.5
Movement LOS	E	E	B	B	E	E	C	C	E	E	D	E	E	E	D	D
d_A, Approach Delay [s/veh]	24.96				32.17				55.52				52.32			
Approach LOS	C				C				E				D			
d_I, Intersection Delay [s/veh]	38.55															
Intersection LOS	D															
Intersection V/C	0.749															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.154				3.267				3.076				3.007			
Crosswalk LOS	C				C				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	717				533				400				500			
d_b, Bicycle Delay [s]	24.70				32.27				38.40				33.75			
I_b,int, Bicycle LOS Score for Intersection	2.352				2.188				2.211				2.070			
Bicycle LOS	B				B				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.646

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	203	31	0	51	243	0	40	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	11	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	121	1057	164	85	261	1142	38	76	21	46	0	160	20	226
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	31	269	42	22	66	290	10	19	5	12	0	41	5	57
Total Analysis Volume [veh/h]	45	123	1074	167	86	265	1161	39	77	21	47	0	163	20	230
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	62.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	18	46	0	0	34	62	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	52	52	25	64	64	31	31	31	31
g / C, Green / Cycle	0.11	0.43	0.43	0.21	0.53	0.53	0.26	0.26	0.26	0.26
(v / s)_j Volume / Saturation Flow Rate	0.09	0.21	0.11	0.20	0.23	0.02	0.21	0.03	0.17	0.14
s, saturation flow rate [veh/h]	1781	5094	1589	1781	5094	1589	477	1589	1055	1589
c, Capacity [veh/h]	193	2192	684	375	2714	847	177	412	330	412
d1, Uniform Delay [s]	48.36	11.22	10.27	38.15	3.42	3.16	52.12	33.95	39.75	38.53
k, delay calibration	0.11	0.50	0.50	0.30	0.50	0.50	0.22	0.11	0.15	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.39	0.79	0.85	22.96	0.49	0.10	5.50	0.12	1.96	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.49	0.24	0.94	0.43	0.05	0.55	0.11	0.55	0.56
d, Delay for Lane Group [s/veh]	59.75	12.01	11.12	61.11	3.91	3.26	57.62	34.08	41.71	39.71
Lane Group LOS	E	B	B	E	A	A	E	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.11	3.30	1.54	10.99	1.34	0.14	3.20	1.08	5.06	6.07
50th-Percentile Queue Length [ft/ln]	127.73	82.48	38.62	274.72	33.45	3.51	79.98	27.06	126.46	151.71
95th-Percentile Queue Length [veh/ln]	8.82	5.94	2.78	16.43	2.41	0.25	5.76	1.95	8.75	10.11
95th-Percentile Queue Length [ft/ln]	220.41	148.47	69.52	410.63	60.22	6.32	143.97	48.71	218.68	252.71

**Movement, Approach, & Intersection Results**

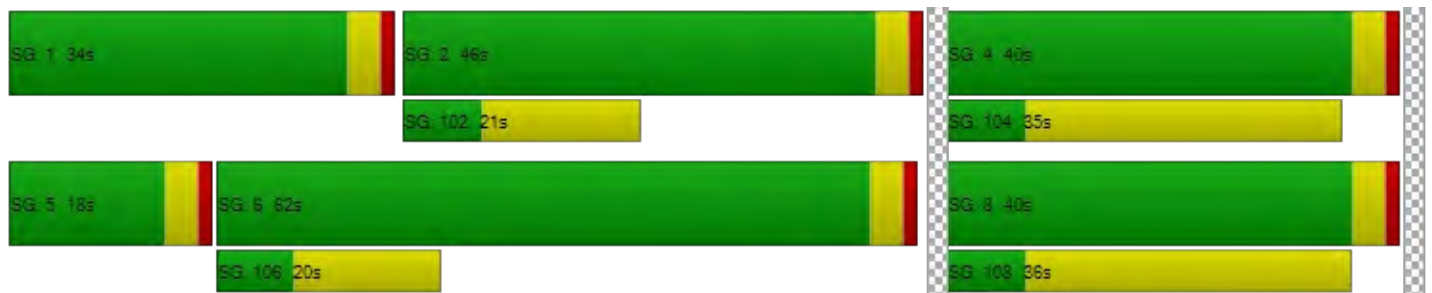
d_M, Delay for Movement [s/veh]	59.7	59.7	12.0	11.1	61.1	61.1	3.91	3.26	57.62	57.62	34.08	41.7	41.7	41.7	39.7
Movement LOS	E	E	B	B	E	E	A	A	E	E	C	D	D	D	D
d_A, Approach Delay [s/veh]	17.59			16.84			49.99			40.60					
Approach LOS	B			B			D			D					
d_I, Intersection Delay [s/veh]	21.30														
Intersection LOS	C														
Intersection V/C	0.646														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.446			3.266			2.043			2.420		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	700			967			600			600		
d_b, Bicycle Delay [s]	25.35			16.02			29.40			29.40		
I_b,int, Bicycle LOS Score for Intersection	2.310			2.267			1.799			1.972		
Bicycle LOS	B			B			A			A		

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 4: Avalon Blvd (NS) at Dominguez St (EW)**

Control Type:	Signalized	Delay (sec / veh):	22.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	85.0	100.	100.	205.	200.	100.	100.	100.	100.00	100.00	100.00	210.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			30.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	No				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Dominguez St			Dominguez St			
Base Volume Input [veh/h]	15	24	1044	549	25	137	882	28	20	5	32	7	612	8	142
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	262	29	0	17	257	0	0	0	0	0	22	0	17
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	26	1389	621	27	165	1209	30	22	5	35	7	682	8	170
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9760	0.9760	0.9760	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	4	7	356	159	7	42	310	8	6	1	9	2	175	2	44
Total Analysis Volume [veh/h]	16	27	1423	636	28	169	1239	31	23	5	36	7	699	8	174
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	33.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Split	Split	Split	Split	Split	Split	Split
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	11	59	0	0	17	65	0	0	11	0	0	0	33	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	10	0	0	0	23	0	0	22	0	0	0	22	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	C	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	58	58	13	66	66	6	6	26	26	26
g / C, Green / Cycle	0.04	0.49	0.49	0.11	0.55	0.55	0.05	0.05	0.22	0.22	0.22
(v / s)_j Volume / Saturation Flow Rate	0.02	0.28	0.40	0.11	0.23	0.23	0.02	0.02	0.20	0.20	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	1781	3560	1847	1796	1589	1781	1783	1589
c, Capacity [veh/h]	80	2476	773	193	1956	1015	93	82	393	393	351
d1, Uniform Delay [s]	54.32	6.99	8.46	49.17	2.44	2.44	54.82	55.21	45.57	45.57	40.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.31	0.30	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.53	0.98	9.68	35.54	0.69	1.32	1.80	3.65	18.96	18.84	1.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.54	0.57	0.82	1.02	0.43	0.43	0.30	0.44	0.91	0.91	0.50
d, Delay for Lane Group [s/veh]	59.85	7.97	18.14	84.71	3.12	3.76	56.62	58.86	64.53	64.41	42.01
Lane Group LOS	E	A	B	F	A	A	E	E	E	E	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.35	2.96	5.94	7.14	1.15	1.37	0.87	1.15	12.38	12.37	4.62
50th-Percentile Queue Length [ft/ln]	33.71	73.98	148.39	178.62	28.74	34.27	21.75	28.75	309.51	309.30	115.47
95th-Percentile Queue Length [veh/ln]	2.43	5.33	9.93	11.62	2.07	2.47	1.57	2.07	18.15	18.14	8.14
95th-Percentile Queue Length [ft/ln]	60.68	133.16	248.28	290.61	51.74	61.69	39.15	51.74	453.78	453.51	203.59



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.8	59.8	7.97	18.1	84.7	84.7	3.33	3.76	56.62	56.62	58.86	64.5	64.4	64.4	42.0
Movement LOS	E	E	A	B	F	F	A	A	E	E	E	E	E	E	D
d_A, Approach Delay [s/veh]	12.11			14.27				57.88			60.07				
Approach LOS	B			B				E			E				
d_I, Intersection Delay [s/veh]	22.88														
Intersection LOS	C														
Intersection V/C	0.786														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			11.0				11.0			11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00				0.00			0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00				0.00			0.00			
d_p, Pedestrian Delay [s]	0.00			49.50				49.50			49.50			
I_p,int, Pedestrian LOS Score for Intersection	0.000			3.253				1.989			2.559			
Crosswalk LOS	F			C				A			B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000				2000			2000			
c_b, Capacity of the bicycle lane [bicycles/h]	917			1017				117			483			
d_b, Bicycle Delay [s]	17.60			14.50				53.20			34.50			
I_b,int, Bicycle LOS Score for Intersection	2.701			2.274				1.665			3.013			
Bicycle LOS	B			B				A			C			

**Sequence**

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 5: Main St (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

**Intersection Setup**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0
Pocket Length [ft]	150.	100.	100.	100.	165.	100.	100.	100.	195.00	100.00	100.00	198.	100.	100.	100.
Speed [mph]	40.00				40.00				45.00			45.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Main St				Main St				Del Amo Blvd			Del Amo Blvd			
Base Volume Input [veh/h]	1	38	215	168	1	42	207	69	65	443	56	2	100	397	41
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	85	80	0	5	41	10	0	157	26	0	136	141	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	67	317	261	1	50	265	84	70	635	87	2	244	569	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.9730	0.9730	0.9730	0.97	0.97	0.97	0.97
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	0	17	81	67	0	13	68	22	18	163	22	1	63	146	13
Total Analysis Volume [veh/h]	1	69	326	268	1	51	272	86	72	653	89	2	251	585	50
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Protect	Permis	Permis	Perm	Prote	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	3	8	0	0	7	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	7	7	0	0	7	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	11	37	0	0	11	37	0	12	33	0	0	17	34	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	25	0	0	0	26	0	0	22	0	0	0	23	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No	No			No	No		No	No			No	No	
Maximum Recall		No	No			No	No		No	No			No	No	
Pedestrian Recall		No	No			No	No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	L	C	C	L	C	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	18	18	5	17	17	6	36	36	15	45	45
g / C, Green / Cycle	0.06	0.20	0.20	0.06	0.19	0.19	0.07	0.40	0.40	0.17	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.17	0.03	0.08	0.05	0.04	0.14	0.14	0.14	0.12	0.12
s, saturation flow rate [veh/h]	1781	3560	1589	1781	3560	1589	1781	3560	1758	1781	3560	1796
c, Capacity [veh/h]	117	714	319	103	687	307	117	1416	699	296	1774	895
d1, Uniform Delay [s]	40.99	31.72	34.66	41.22	31.80	31.05	41.00	19.00	19.03	36.52	12.88	12.89
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering 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
d2, Incremental Delay [s]	4.87	0.46	5.95	3.77	0.37	0.49	5.11	0.68	1.40	6.92	0.32	0.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

**Lane Group Results**

X, volume / capacity	0.60	0.46	0.84	0.50	0.40	0.28	0.61	0.35	0.35	0.85	0.24	0.24
d, Delay for Lane Group [s/veh]	45.86	32.18	40.61	44.99	32.17	31.54	46.11	19.68	20.44	43.44	13.19	13.52
Lane Group LOS	D	C	D	D	C	C	D	B	C	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.62	3.04	5.90	1.19	2.52	1.58	1.65	3.43	3.57	5.67	2.22	2.33
50th-Percentile Queue Length [ft/ln]	40.49	75.96	147.59	29.82	62.99	39.40	41.35	85.76	89.32	141.83	55.43	58.25
95th-Percentile Queue Length [veh/ln]	2.92	5.47	9.89	2.15	4.54	2.84	2.98	6.17	6.43	9.58	3.99	4.19
95th-Percentile Queue Length [ft/ln]	72.89	136.73	247.21	53.68	113.39	70.92	74.43	154.37	160.78	239.49	99.77	104.84

**Movement, Approach, & Intersection Results**

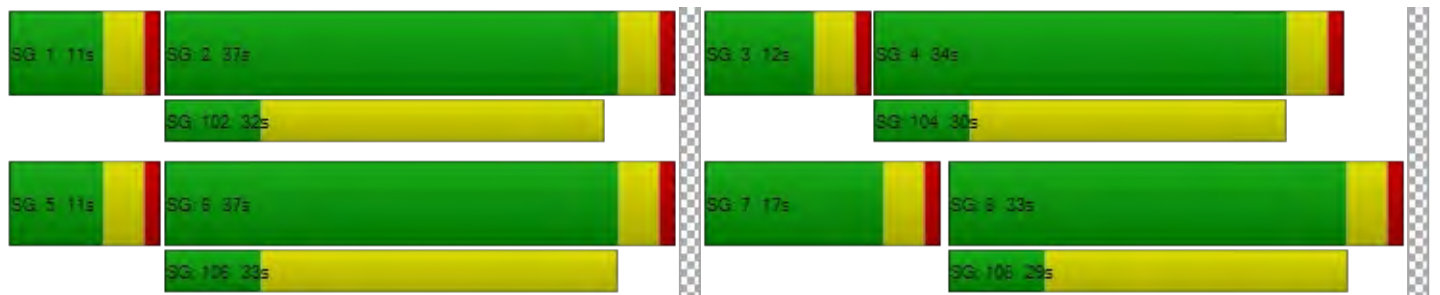
d_M, Delay for Movement [s/veh]	45.8	45.8	32.1	40.6	44.9	44.9	32.1	31.5	46.11	19.86	20.44	43.4	43.4	13.2	13.5	
Movement LOS	D	D	C	D	D	D	C	C	D	B	C	D	D	B	B	
d_A, Approach Delay [s/veh]	37.02				33.66				22.25				21.89			
Approach LOS	D				C				C				C			
d_I, Intersection Delay [s/veh]	27.35															
Intersection LOS	C															
Intersection V/C	0.527															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	34.67				34.67				34.67				34.67			
I_p,int, Pedestrian LOS Score for Intersection	2.729				2.638				2.918				2.982			
Crosswalk LOS	B				B				C				C			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	733				733				644				667			
d_b, Bicycle Delay [s]	18.05				18.05				20.67				20.00			
I_b,int, Bicycle LOS Score for Intersection	2.050				1.856				2.007				2.047			
Bicycle LOS	B				A				B				B			

**Sequence**

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 6: Central Ave (NS) at Del Amo Blvd (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.649

**Intersection Setup**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Approach	Southbound			Eastbound		Westbound	
Lane Configuration	⇐⇐⇐⇐			⇐⇐		⇐⇐	
Turning Movement	U-turn	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0
Pocket Length [ft]	200.00	100.00	100.00	195.00	100.00	100.00	100.00
Speed [mph]	40.00			50.00		50.00	
Grade [%]	0.00			0.00		0.00	
Curb Present	No			No		No	
Crosswalk	Yes			No		Yes	

**Volumes**

Name	Central Ave			Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	23	111	278	304	544	508	88
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	64	63	149	164	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	119	364	392	736	712	95
Peak Hour Factor	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210	0.9210
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	32	99	106	200	193	26
Total Analysis Volume [veh/h]	27	129	395	426	799	773	103
Presence of On-Street Parking	No		No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0		0	
v_di, Inbound Pedestrian Volume crossing major street	0			0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0			0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0			0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0			0		0	
Bicycle Volume [bicycles/h]	0			0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Permissiv	Permissiv	Overlap	Protected	Permissive	Permissive	Permissive
Signal group	0	1	6	3	8	4	0
Auxiliary Signal Groups			6				
Lead / Lag	-	Lead	-	Lead	-	-	-
Minimum Green [s]	0	7	7	7	7	7	0
Maximum Green [s]	0	30	30	30	30	30	0
Amber [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	29	29	15	46	31	0
Vehicle Extension [s]	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	22	0	0	24	24	0
Pedestrian Clearance [s]	0	3	0	0	3	3	0
Rest In Walk		No			No	No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall		No	No	No	No	No	
Maximum Recall		No	No	No	No	No	
Pedestrian Recall		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0



**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	75	75	75	75	75	75
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	13	20	54	30	30
g / C, Green / Cycle	0.17	0.17	0.26	0.72	0.40	0.40
(v / s)_j Volume / Saturation Flow Rate	0.05	0.14	0.24	0.22	0.22	0.06
s, saturation flow rate [veh/h]	3459	2813	1781	3560	3560	1589
c, Capacity [veh/h]	603	491	470	2560	1431	639
d1, Uniform Delay [s]	26.81	29.78	26.74	3.82	17.16	14.36
k, delay calibration	0.11	0.11	0.16	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	3.16	9.45	0.32	1.47	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.26	0.81	0.91	0.31	0.54	0.16
d, Delay for Lane Group [s/veh]	27.03	32.94	36.20	4.14	18.63	14.90
Lane Group LOS	C	C	D	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.15	3.41	7.70	1.17	4.57	1.05
50th-Percentile Queue Length [ft/ln]	28.82	85.13	192.59	29.30	114.27	26.27
95th-Percentile Queue Length [veh/ln]	2.08	6.13	12.26	2.11	8.08	1.89
95th-Percentile Queue Length [ft/ln]	51.88	153.24	306.39	52.74	201.93	47.28

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	27.03	27.03	32.94	36.20	4.14	18.63	14.90
Movement LOS	C	C	C	D	A	B	B
d_A, Approach Delay [s/veh]	31.27			15.29		18.19	
Approach LOS	C			B		B	
d_I, Intersection Delay [s/veh]	19.57						
Intersection LOS	B						
Intersection V/C	0.649						

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	28.0	0.0	26.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	14.73	0.00	16.01
I_p,int, Pedestrian LOS Score for Intersection	2.546	0.000	2.855
Crosswalk LOS	B	F	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	37.50	37.50	37.50
I_b,int, Bicycle LOS Score for Intersection	4.132	5.143	4.855
Bicycle LOS	D	F	E

**Sequence**

Ring 1	1	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report  
Intersection 7: Avalon Blvd (NS) at Driveway A (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.165

**Intersection Setup**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	r				r	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Avalon Blvd		Avalon Blvd		Driveway A	
Base Volume Input [veh/h]	1054	13	0	1059	0	30
Base Volume Adjustment Factor	1.0480	1.0480	1.0000	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.00	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	291	0	0	267	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	16	0	0	16	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1445	14	0	1426	0	48
Peak Hour Factor	0.9630	0.9630	1.0000	0.9630	1.0000	0.9630
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	375	4	0	370	0	12
Total Analysis Volume [veh/h]	1501	15	0	1481	0	50
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.16
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	19.19
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.58
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	14.53
d_A, Approach Delay [s/veh]	0.00		0.00		19.19	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.31					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 8: Driveway B (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

**Intersection Setup**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↗		↘↘↘		↕↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

**Volumes**

Name	Driveway B		Del Amo Blvd		Del Amo Blvd	
Base Volume Input [veh/h]	0	57	682	49	0	667
Base Volume Adjustment Factor	1.0000	1.0480	1.0480	1.0480	1.0000	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	188	19	0	209
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	4	2	6	0	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	78	926	78	0	933
Peak Hour Factor	1.0000	0.9430	0.9430	0.9430	1.0000	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	21	245	21	0	247
Total Analysis Volume [veh/h]	0	83	982	83	0	989
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.16	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	13.17	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.56	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	14.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.17		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 9: Driveway C (NS) at Del Amo Blvd (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

**Intersection Setup**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Approach	Northbound			Eastbound			Westbound	
Lane Configuration								
Turning Movement	U-turn	Left	Right	U-turn	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00
Speed [mph]	25.00			45.00			45.00	
Grade [%]	0.00			0.00			0.00	
Crosswalk	Yes			No			No	

**Volumes**

Name	Driveway C			Del Amo Blvd			Del Amo Blvd	
Base Volume Input [veh/h]	1	8	71	13	683	43	85	648
Base Volume Adjustment Factor	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480	1.0480
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	12	0	200	0	26	203
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	2	4	0	6	0	8	2
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	16	92	14	943	46	126	904
Peak Hour Factor	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460	0.9460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	24	4	249	12	33	239
Total Analysis Volume [veh/h]	1	17	97	15	997	49	133	956
Pedestrian Volume [ped/h]	0			0			0	



**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.10	0.19	0.06	0.01	0.00	0.20	0.01
d_M, Delay for Movement [s/veh]	29.71	29.71	13.56	19.19	0.00	0.00	11.81	0.00
Movement LOS	D	D	B	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.36	0.36	0.68	0.16	0.08	0.00	0.75	0.00
95th-Percentile Queue Length [ft/ln]	9.09	9.09	17.08	4.10	2.05	0.00	18.69	0.00
d_A, Approach Delay [s/veh]	16.08			0.27			1.44	
Approach LOS	C			A			A	
d_I, Intersection Delay [s/veh]	1.64							
Intersection LOS	D							

**OPENING YEAR (2024)  
WITH IMPROVEMENTS**

**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.508

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	115	0	0	0	97	0	19	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	142	1016	128	88	153	939	27	67	18	90	0	106	15	155
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	38	273	34	24	41	252	7	18	5	24	0	28	4	42
Total Analysis Volume [veh/h]	34	153	1092	138	95	165	1010	29	72	19	97	0	114	16	167
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	68.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	20	48	0	0	32	60	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	68	68	11	65	65	28	28	28	28
g / C, Green / Cycle	0.12	0.57	0.57	0.09	0.54	0.54	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.11	0.21	0.09	0.08	0.20	0.02	0.18	0.06	0.16	0.11
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	508	1589	820	1589
c, Capacity [veh/h]	212	2899	905	327	2774	865	174	376	250	376
d1, Uniform Delay [s]	47.28	1.38	1.35	49.44	2.68	2.54	52.26	37.25	41.49	39.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.16	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.31	0.37	0.36	4.43	0.37	0.07	3.55	0.36	1.67	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.88	0.38	0.15	0.80	0.36	0.03	0.52	0.26	0.52	0.44
d, Delay for Lane Group [s/veh]	58.58	1.76	1.71	53.88	3.05	2.61	55.81	37.61	43.16	39.91
Lane Group LOS	E	A	A	D	A	A	E	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.61	0.60	0.28	3.72	0.95	0.09	2.88	2.39	3.64	4.34
50th-Percentile Queue Length [ft/ln]	140.13	15.02	6.92	93.06	23.84	2.21	72.09	59.81	91.09	108.50
95th-Percentile Queue Length [veh/ln]	9.49	1.08	0.50	6.70	1.72	0.16	5.19	4.31	6.56	7.76
95th-Percentile Queue Length [ft/ln]	237.19	27.04	12.45	167.51	42.91	3.98	129.76	107.67	163.97	193.92

**Movement, Approach, & Intersection Results**

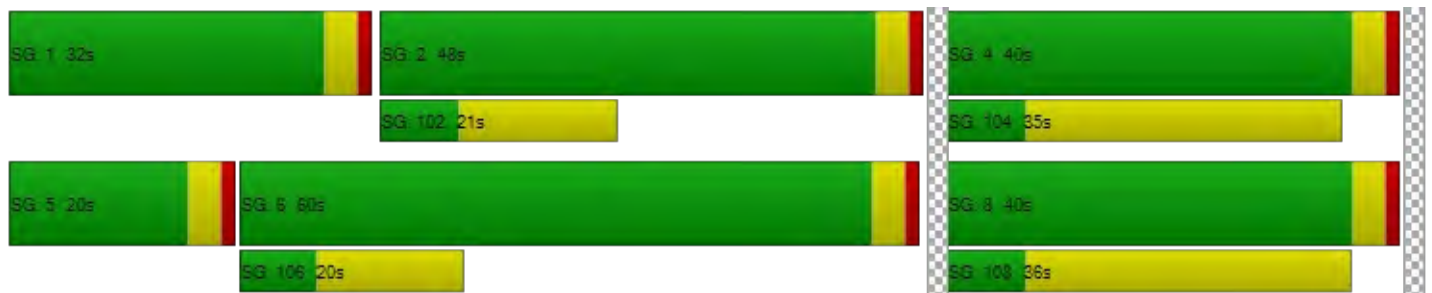
d_M, Delay for Movement [s/veh]	58.5	58.5	1.76	1.71	53.8	53.8	3.05	2.61	55.81	55.81	37.61	43.1	43.1	43.1	39.9
Movement LOS	E	E	A	A	D	D	A	A	E	E	D	D	D	D	D
d_A, Approach Delay [s/veh]	9.25			13.21			46.42			41.33					
Approach LOS	A			B			D			D					
d_I, Intersection Delay [s/veh]	16.02														
Intersection LOS	B														
Intersection V/C	0.508														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.359			3.298			2.059			2.433		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	733			933			600			600		
d_b, Bicycle Delay [s]	24.07			17.07			29.40			29.40		
I_b,int, Bicycle LOS Score for Intersection	2.320			2.183			1.870			1.862		
Bicycle LOS	B			B			A			A		

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	133	0	0	0	179	0	16	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	72	1104	77	109	186	1387	10	81	31	134	0	91	13	142
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	18	278	19	27	47	349	3	20	8	34	0	23	3	36
Total Analysis Volume [veh/h]	18	72	1111	77	110	187	1395	10	81	31	135	0	92	13	143
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			



**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	76.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	13	46	0	0	34	67	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	66	66	13	71	71	29	29	29	29
g / C, Green / Cycle	0.06	0.55	0.55	0.11	0.59	0.59	0.24	0.24	0.24	0.24
(v / s)_j Volume / Saturation Flow Rate	0.05	0.22	0.05	0.09	0.27	0.01	0.19	0.08	0.15	0.09
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	586	1589	709	1589
c, Capacity [veh/h]	112	2814	878	365	3032	946	194	385	228	385
d1, Uniform Delay [s]	52.99	2.26	2.15	48.30	0.20	0.20	51.28	37.68	40.18	37.89
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.19	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.45	0.42	0.20	4.41	0.51	0.02	4.70	0.55	1.45	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.39	0.09	0.81	0.46	0.01	0.58	0.35	0.46	0.37
d, Delay for Lane Group [s/veh]	65.44	2.67	2.34	52.71	0.70	0.22	55.99	38.22	41.63	38.48
Lane Group LOS	E	A	A	D	A	A	E	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.93	0.92	0.21	4.19	0.24	0.01	3.58	3.39	2.87	3.62
50th-Percentile Queue Length [ft/ln]	73.20	22.93	5.28	104.76	6.05	0.19	89.60	84.83	71.75	90.40
95th-Percentile Queue Length [veh/ln]	5.27	1.65	0.38	7.54	0.44	0.01	6.45	6.11	5.17	6.51
95th-Percentile Queue Length [ft/ln]	131.77	41.27	9.50	188.57	10.89	0.34	161.27	152.69	129.15	162.71

**Movement, Approach, & Intersection Results**

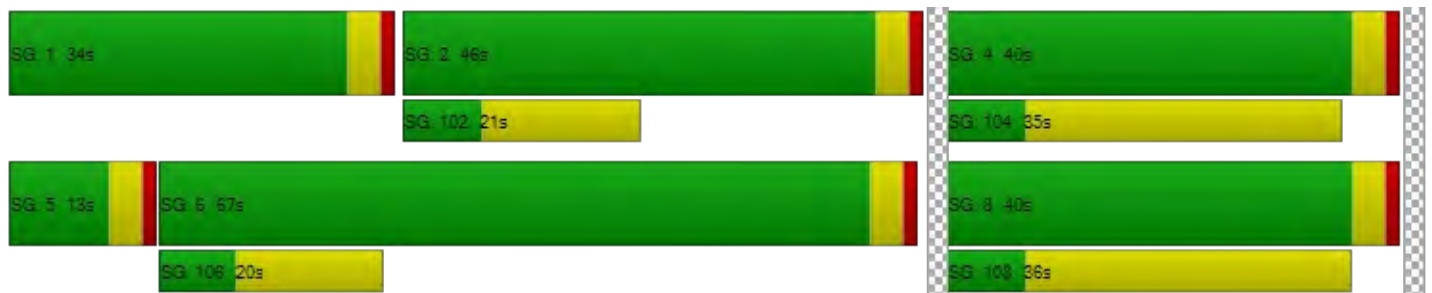
d_M, Delay for Movement [s/veh]	65.4	65.4	2.67	2.34	52.7	52.7	0.70	0.22	55.99	55.99	38.22	41.6	41.6	41.6	38.4	
Movement LOS	E	E	A	A	D	D	A	A	E	E	D	D	D	D	D	
d_A, Approach Delay [s/veh]	7.07				9.77				46.28				39.82			
Approach LOS	A				A				D				D			
d_I, Intersection Delay [s/veh]	13.52															
Intersection LOS	B															
Intersection V/C	0.543															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.360				3.362				2.047				2.386			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				1050				600				600			
d_b, Bicycle Delay [s]	25.35				13.54				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.253				2.393				1.967				1.817			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.524

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration															
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	203	0	0	0	243	0	40	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	121	1057	123	85	194	1142	38	76	21	46	0	118	20	162
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	31	269	31	22	49	290	10	19	5	12	0	30	5	41
Total Analysis Volume [veh/h]	45	123	1074	125	86	197	1161	39	77	21	47	0	120	20	165
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	67.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	19	50	0	0	30	61	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	70	70	12	69	69	26	26	26	26
g / C, Green / Cycle	0.11	0.58	0.58	0.10	0.57	0.57	0.22	0.22	0.22	0.22
(v / s)_j Volume / Saturation Flow Rate	0.09	0.21	0.08	0.08	0.23	0.02	0.18	0.03	0.13	0.10
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	558	1589	1079	1589
c, Capacity [veh/h]	193	2955	922	349	2917	910	176	348	292	348
d1, Uniform Delay [s]	48.32	0.86	0.84	48.78	1.22	1.17	52.63	37.72	41.91	40.85
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.15	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.24	0.35	0.31	4.50	0.41	0.09	3.81	0.17	1.22	1.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.36	0.14	0.81	0.40	0.04	0.56	0.14	0.48	0.47
d, Delay for Lane Group [s/veh]	59.56	1.21	1.15	53.29	1.62	1.26	56.43	37.90	43.13	41.85
Lane Group LOS	E	A	A	D	A	A	E	D	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.10	0.42	0.19	4.02	0.59	0.07	3.11	1.15	3.85	4.40
50th-Percentile Queue Length [ft/ln]	127.50	10.50	4.76	100.54	14.87	1.75	77.84	28.70	96.26	109.93
95th-Percentile Queue Length [veh/ln]	8.80	0.76	0.34	7.24	1.07	0.13	5.60	2.07	6.93	7.84
95th-Percentile Queue Length [ft/ln]	220.09	18.90	8.58	180.97	26.76	3.16	140.10	51.66	173.28	195.90

**Movement, Approach, & Intersection Results**

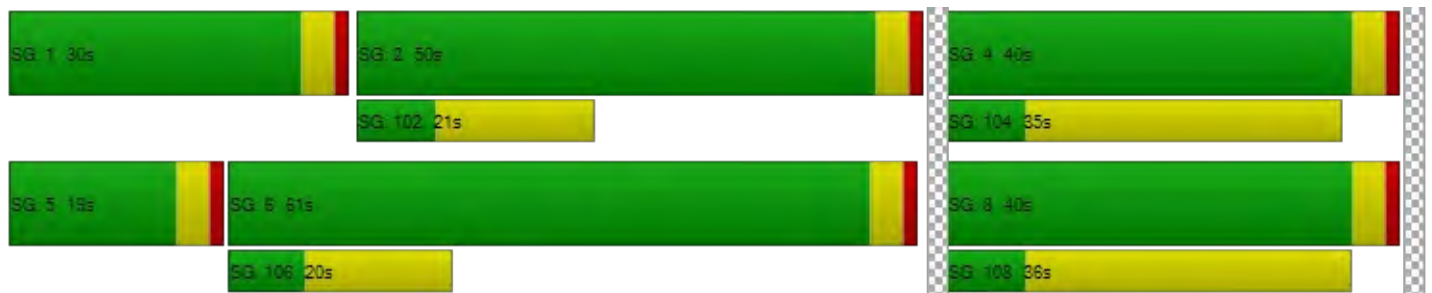
d_M, Delay for Movement [s/veh]	59.5	59.5	1.21	1.15	53.2	53.2	1.62	1.26	56.43	56.43	37.90	43.1	43.1	43.1	41.8
Movement LOS	E	E	A	A	D	D	A	A	E	E	D	D	D	D	D
d_A, Approach Delay [s/veh]	8.37			11.47			50.43			42.44					
Approach LOS	A			B			D			D					
d_I, Intersection Delay [s/veh]	14.76														
Intersection LOS	B														
Intersection V/C	0.524														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.374			3.326			2.043			2.447		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	767			950			600			600		
d_b, Bicycle Delay [s]	22.82			16.54			29.40			29.40		
I_b,int, Bicycle LOS Score for Intersection	2.287			2.267			1.799			1.865		
Bicycle LOS	B			B			A			A		

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	30	111	835	118	81	142	780	25	45	16	83	0	98	14	143
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	115	31	0	49	97	0	19	0	0	0	29	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	9	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	142	1016	169	88	218	939	27	67	18	90	0	144	15	219
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.9300	0.9300	0.9300	0.93	0.93	0.93	0.93
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	9	38	273	45	24	59	252	7	18	5	24	0	39	4	59
Total Analysis Volume [veh/h]	34	153	1092	182	95	234	1010	29	72	19	97	0	155	16	235
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	71.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	19	44	0	0	31	56	0	0	45	0	0	0	45	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	59	59	14	59	59	35	35	35	35
g / C, Green / Cycle	0.12	0.50	0.50	0.11	0.49	0.49	0.29	0.29	0.29	0.29
(v / s)_j Volume / Saturation Flow Rate	0.11	0.21	0.11	0.10	0.20	0.02	0.22	0.06	0.22	0.15
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	418	1589	790	1589
c, Capacity [veh/h]	212	2522	787	397	2501	781	175	461	286	461
d1, Uniform Delay [s]	47.32	5.91	5.55	47.40	6.13	5.58	51.59	32.20	38.62	35.48
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.19	0.11	0.19	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.49	0.54	0.69	4.50	0.49	0.09	4.19	0.22	3.47	0.87
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.88	0.43	0.23	0.83	0.40	0.04	0.52	0.21	0.60	0.51
d, Delay for Lane Group [s/veh]	58.80	6.45	6.24	51.90	6.62	5.67	55.78	32.42	42.10	36.35
Lane Group LOS	E	A	A	D	A	A	E	C	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.62	1.99	1.05	4.59	1.90	0.16	2.91	2.20	4.88	5.91
50th-Percentile Queue Length [ft/ln]	140.43	49.64	26.15	114.83	47.38	4.07	72.85	55.00	122.04	147.70
95th-Percentile Queue Length [veh/ln]	9.50	3.57	1.88	8.11	3.41	0.29	5.25	3.96	8.51	9.89
95th-Percentile Queue Length [ft/ln]	237.60	89.35	47.07	202.70	85.29	7.33	131.13	99.00	212.63	247.35

**Movement, Approach, & Intersection Results**

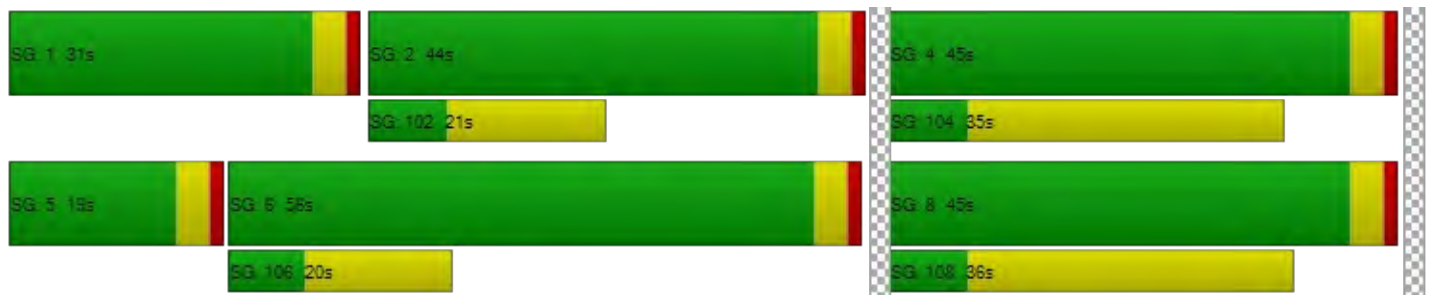
d_M, Delay for Movement [s/veh]	58.8	58.8	6.45	6.24	51.9	51.9	6.62	5.67	55.78	55.78	32.42	42.1	42.1	42.1	36.3	
Movement LOS	E	E	A	A	D	D	A	A	E	E	C	D	D	D	D	
d_A, Approach Delay [s/veh]	13.13				17.49				43.73				38.77			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	19.59															
Intersection LOS	B															
Intersection V/C	0.555															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.428				3.315				2.059				2.536			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	667				867				683				683			
d_b, Bicycle Delay [s]	26.67				19.27				26.00				26.00			
I_b,int, Bicycle LOS Score for Intersection	2.344				2.183				1.870				1.974			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	15.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.565

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	16	50	900	72	101	173	1119	10	60	29	124	0	84	12	132
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	18	133	15	0	24	179	0	16	0	0	0	14	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	15	0	24	0	0	0	0	0	0	13	0	22
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	72	1104	107	109	234	1387	10	81	31	134	0	118	13	186
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.9940	0.9940	0.9940	0.99	0.99	0.99	0.99
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	5	18	278	27	27	59	349	3	20	8	34	0	30	3	47
Total Analysis Volume [veh/h]	18	72	1111	108	110	235	1395	10	81	31	135	0	119	13	187
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	76.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	13	39	0	0	34	60	0	0	47	0	0	0	47	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	61	61	14	68	68	33	33	33	33
g / C, Green / Cycle	0.06	0.51	0.51	0.12	0.56	0.56	0.27	0.27	0.27	0.27
(v / s)_j Volume / Saturation Flow Rate	0.05	0.22	0.07	0.10	0.27	0.01	0.21	0.08	0.19	0.12
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	528	1589	708	1589
c, Capacity [veh/h]	112	2576	804	414	2866	894	196	436	251	436
d1, Uniform Delay [s]	52.99	5.16	4.77	46.87	1.75	1.63	50.67	34.52	38.90	35.80
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.16	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.45	0.53	0.35	4.41	0.59	0.02	3.81	0.40	1.70	0.67
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.43	0.13	0.83	0.49	0.01	0.57	0.31	0.53	0.43
d, Delay for Lane Group [s/veh]	65.44	5.69	5.12	51.28	2.34	1.66	54.48	34.92	40.60	36.47
Lane Group LOS	E	A	A	D	A	A	D	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	2.93	1.82	0.55	4.78	0.95	0.02	3.53	3.22	3.63	4.64
50th-Percentile Queue Length [ft/ln]	73.20	45.44	13.67	119.46	23.73	0.55	88.28	80.59	90.77	116.06
95th-Percentile Queue Length [veh/ln]	5.27	3.27	0.98	8.36	1.71	0.04	6.36	5.80	6.54	8.18
95th-Percentile Queue Length [ft/ln]	131.77	81.80	24.61	209.09	42.71	0.99	158.91	145.07	163.39	204.40



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	65.4	65.4	5.69	5.12	51.2	51.2	2.34	1.66	54.48	54.48	34.92	40.6	40.6	40.6	36.4
Movement LOS	E	E	A	A	D	D	A	A	D	D	C	D	D	D	D
d_A, Approach Delay [s/veh]	9.75			11.99			43.79			38.18					
Approach LOS	A			B			D			D					
d_I, Intersection Delay [s/veh]	15.65														
Intersection LOS	B														
Intersection V/C	0.565														

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.50			49.50			49.50			49.50		
I_p,int, Pedestrian LOS Score for Intersection	3.406			3.374			2.047			2.455		
Crosswalk LOS	C			C			B			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	583			933			717			717		
d_b, Bicycle Delay [s]	30.10			17.07			24.70			24.70		
I_b,int, Bicycle LOS Score for Intersection	2.270			2.393			1.967			1.890		
Bicycle LOS	B			B			A			A		

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**  
**Intersection 3: Avalon Blvd (NS) at Carson Plaza Dr (EW)**

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

**Intersection Setup**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Approach	Northbound				Southbound				Eastbound			Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]			[Diagram]			
Turning Movement	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.00	12.00	12.00	12.0	12.0	12.0	12.0
No. of Lanes in Pocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	185.	100.	100.	100.	130.	100.	100.	100.	100.00	100.00	100.00	100.	100.	100.	100.
Speed [mph]	35.00				35.00				25.00			25.00			
Grade [%]	0.00				0.00				0.00			0.00			
Curb Present	No				No				No			No			
Crosswalk	Yes				Yes				Yes			Yes			

**Volumes**

Name	Avalon Blvd				Avalon Blvd				Carson Plaza Dr			Carson Plaza Dr			
Base Volume Input [veh/h]	41	71	791	114	79	179	833	35	33	19	43	0	110	18	150
Base Volume Adjustment Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.0480	1.0480	1.0480	1.04	1.04	1.04	1.04
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	203	31	0	51	243	0	40	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	10	0	16	0	0	0	0	0	0	11	0	16
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	121	1057	164	85	261	1142	38	76	21	46	0	160	20	226
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.9840	0.9840	0.9840	0.98	0.98	0.98	0.98
Other Adjustment Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00
Total 15-Minute Volume [veh/h]	11	31	269	42	22	66	290	10	19	5	12	0	41	5	57
Total Analysis Volume [veh/h]	45	123	1074	167	86	265	1161	39	77	21	47	0	163	20	230
Presence of On-Street Parking	No			No	No			No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0				0				0			0			
v_di, Inbound Pedestrian Volume crossing major street	0				0				0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	0				0				0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0				0				0			0			
Bicycle Volume [bicycles/h]	0				0				0			0			

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	1 - Avalon Blvd
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	62.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	6.00

**Phasing & Timing**

Control Type	Perm	Prote	Perm	Perm	Perm	Prote	Perm	Perm	Permis	Permis	Permis	Perm	Perm	Perm	Perm
Signal group	0	5	2	0	0	1	6	0	0	8	0	0	0	4	0
Auxiliary Signal Groups															
Lead / Lag	-	Lead	-	-	-	Lead	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	7	0	0	7	7	0	0	7	0	0	0	7	0
Maximum Green [s]	0	30	30	0	0	30	30	0	0	30	0	0	0	30	0
Amber [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
Split [s]	0	18	46	0	0	34	62	0	0	40	0	0	0	40	0
Vehicle Extension [s]	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	7	0	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	0	14	0	0	0	13	0	0	29	0	0	0	28	0
Rest In Walk			No				No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No	No			No	No			No				No	
Maximum Recall		No	No			No	No			No				No	
Pedestrian Recall		No	No			No	No			No				No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

**Lane Group Calculations**

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	62	62	15	64	64	31	31	31	31
g / C, Green / Cycle	0.11	0.52	0.52	0.12	0.53	0.53	0.26	0.26	0.26	0.26
(v / s)_j Volume / Saturation Flow Rate	0.09	0.21	0.11	0.10	0.23	0.02	0.21	0.03	0.17	0.14
s, saturation flow rate [veh/h]	1781	5094	1589	3459	5094	1589	477	1589	1055	1589
c, Capacity [veh/h]	193	2646	826	420	2714	847	177	412	330	412
d1, Uniform Delay [s]	48.36	4.22	4.01	46.69	3.42	3.16	52.12	33.95	39.75	38.53
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.22	0.11	0.15	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.39	0.46	0.55	4.41	0.49	0.10	5.50	0.12	1.96	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.41	0.20	0.83	0.43	0.05	0.55	0.11	0.55	0.56
d, Delay for Lane Group [s/veh]	59.75	4.68	4.56	51.10	3.91	3.26	57.62	34.08	41.71	39.71
Lane Group LOS	E	A	A	D	A	A	E	C	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	5.11	1.48	0.74	4.85	1.34	0.14	3.20	1.08	5.06	6.07
50th-Percentile Queue Length [ft/ln]	127.73	36.88	18.56	121.25	33.45	3.51	79.98	27.06	126.46	151.71
95th-Percentile Queue Length [veh/ln]	8.82	2.66	1.34	8.46	2.41	0.25	5.76	1.95	8.75	10.11
95th-Percentile Queue Length [ft/ln]	220.41	66.39	33.41	211.54	60.22	6.32	143.97	48.71	218.68	252.71

**Movement, Approach, & Intersection Results**

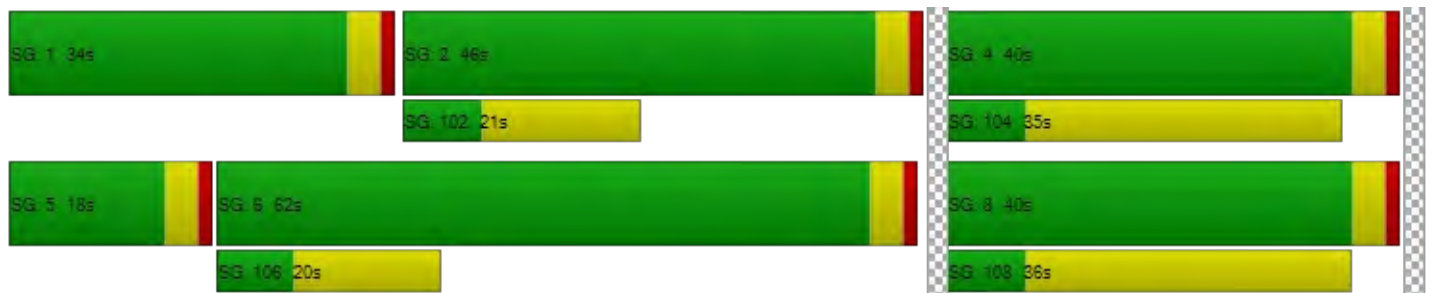
d_M, Delay for Movement [s/veh]	59.7	59.7	4.68	4.56	51.1	51.1	3.91	3.26	57.62	57.62	34.08	41.7	41.7	41.7	39.7	
Movement LOS	E	E	A	A	D	D	A	A	E	E	C	D	D	D	D	
d_A, Approach Delay [s/veh]	11.23				14.58				49.99				40.60			
Approach LOS	B				B				D				D			
d_I, Intersection Delay [s/veh]	17.75															
Intersection LOS	B															
Intersection V/C	0.555															

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0				11.0				11.0				11.0			
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00				0.00				0.00				0.00			
d_p, Pedestrian Delay [s]	49.50				49.50				49.50				49.50			
I_p,int, Pedestrian LOS Score for Intersection	3.446				3.343				2.043				2.553			
Crosswalk LOS	C				C				B				B			
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000				2000				2000				2000			
c_b, Capacity of the bicycle lane [bicycles/h]	700				967				600				600			
d_b, Bicycle Delay [s]	25.35				16.02				29.40				29.40			
I_b,int, Bicycle LOS Score for Intersection	2.310				2.267				1.799				1.972			
Bicycle LOS	B				B				A				A			

**Sequence**

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**APPENDIX F**  
**IN-N-OUT QUEUEING DATA**

**Corona**  
**(2305 Compton Ave, Corona, CA 92881)**



Time	Corona In-N-Out							Peak
	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	
	12/2/2017	12/3/2017	12/4/2017	12/5/2017	12/6/2017	12/7/2017	12/8/2017	
10:30-10:45	7	5	6	5	6	5	6	7
10:45-11:00	14	11	14	7	12	7	8	14
11:00-11:15	7	9	17	11	12	9	10	17
11:15-11:30	9	13	14	15	12	11	17	17
11:30-11:45	9	17	14	15	15	16	16	17
11:45-12:00	11	19	17	10	14	16	15	19
12:00-12:15	13	17	12	13	18	15	23	23
12:15-12:30	16	18	17	13	18	14	24	24
12:30-12:45	20	23	20	13	16	13	23	23
12:45-1:00	22	24	15	17	13	14	17	24
1:00-1:15	22	24	14	11	13	16	14	24
1:15-1:30	23	23	11	14	16	18	15	23
1:30-1:45	24	22	11	11	15	17	16	24
1:45-2:00	23	17	10	10	13	14	15	23
2:00-2:15	22	18	15	11	16	10	15	22
2:15-2:30	23	17	17	16	16	13	13	23
2:30-2:45	24	23	18	15	12	13	13	24
2:45-3:00	20	14	12	14	10	13	15	20
3:00-3:15	20	18	18	23	17	14	16	23
3:15-3:30	17	14	15	19	18	14	18	19
3:30-3:45	17	16	18	17	11	16	17	18
3:45-4:00	15	17	16	12	15	14	15	17
4:00-4:15	18	20	12	9	12	15	17	20
4:15-4:30	16	18	16	10	9	11	11	18
4:30-4:45	16	17	17	14	10	9	11	17
4:45-5:00	16	17	14	12	16	15	13	17
5:00-5:15	23	15	16	13	23	18	13	23
5:15-5:30	24	17	23	12	18	21	16	24
5:30-5:45	24	23	16	13	16	16	23	24
5:45-6:00	23	23	15	13	17	18	15	23
6:00-6:15	18	24	12	12	18	23	19	24
6:15-6:30	23	24	15	17	23	24	17	24
6:30-6:45	23	25	23	23	23	24	18	25
6:45-7:00	20	25	24	17	17	23	15	25
7:00-7:15	23	24	23	18	14	13	17	24
7:15-7:30	15	24	16	15	16	17	18	24
7:30-7:45	14	23	12	14	13	16	23	23
7:45-8:00	16	23	14	12	13	20	24	24
8:00-8:15	15	15	14	12	14	17	23	23
8:15-8:30	16	15	15	13	12	14	17	17
8:30-8:45	17	16	14	14	10	15	16	17
8:45-9:00	14	14	14	10	14	15	13	15
9:00-9:15	17	12	14	12	11	13	15	17
9:15-9:30	12	10	15	9	11	15	15	15
9:30-9:45	16	13	11	8	8	10	16	16
9:45-10:00	12	15	9	8	11	13	11	15
10:00-10:15	13	12	14	7	12	13	12	14
10:15-10:30	12	9	9	6	11	13	15	15
10:30-10:45	14	13	11	6	7	11	15	15
10:45-11:00	19	11	9	7	8	9	14	19
11:00-11:15	20	8	8	6	6	8	13	20
11:15-11:30	16	12	6	5	5	7	11	16
11:30-11:45	14	10	7	4	4	5	11	14
11:45-12:00	12	8	5	4	5	6	11	12
12:00-12:15	11	5	5	3	4	4	11	11
12:15-12:30	11	7	4	3	3	3	11	11
12:30-12:45	13	6	3	3	2	3	11	13
12:45-1:00	13	4	2	2	2	2	11	13
<b>Day Peak</b>	<b>24</b>	<b>25</b>	<b>24</b>	<b>23</b>	<b>23</b>	<b>24</b>	<b>24</b>	<b>25</b>

**Highland**  
**(28009 Greenspot Rd, Highland, CA 92346)**

Time	Highland In-N-Out							Peak
	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	
	12/2/2017	12/3/2017	12/4/2017	12/5/2017	12/6/2017	12/7/2017	12/8/2017	
10:30-10:45	4	6	6	5	4	4	6	6
10:45-11:00	5	7	8	7	6	7	11	11
11:00-11:15	6	9	11	9	9	10	14	14
11:15-11:30	14	11	17	10	13	14	15	17
11:30-11:45	12	16	15	14	15	14	16	16
11:45-12:00	13	18	14	14	14	14	17	18
12:00-12:15	16	18	18	17	14	18	19	19
12:15-12:30	20	20	17	17	15	18	21	21
12:30-12:45	20	20	16	19	15	17	21	21
12:45-1:00	21	19	13	18	11	18	20	21
1:00-1:15	18	19	14	17	7	18	19	19
1:15-1:30	20	19	11	13	10	14	14	20
1:30-1:45	20	18	14	13	10	13	16	20
1:45-2:00	22	17	14	18	3	13	18	22
2:00-2:15	17	15	13	15	14	16	17	17
2:15-2:30	17	17	18	16	15	19	18	19
2:30-2:45	14	18	14	13	14	16	15	18
2:45-3:00	17	15	15	12	13	18	15	18
3:00-3:15	16	16	18	14	12	16	18	18
3:15-3:30	18	19	18	12	13	14	18	19
3:30-3:45	14	19	17	10	17	19	19	19
3:45-4:00	12	16	18	11	16	18	17	18
4:00-4:15	14	14	15	14	14	15	13	15
4:15-4:30	15	14	13	16	12	16	19	19
4:30-4:45	14	16	15	14	15	14	17	17
4:45-5:00	15	18	18	15	14	17	16	18
5:00-5:15	15	19	15	14	13	19	15	19
5:15-5:30	18	20	13	13	17	19	19	20
5:30-5:45	22	19	16	19	16	18	19	22
5:45-6:00	17	18	20	19	18	21	20	21
6:00-6:15	23	21	20	18	20	21	23	23
6:15-6:30	19	21	19	17	13	19	22	22
6:30-6:45	19	20	19	17	16	18	17	20
6:45-7:00	19	19	18	15	14	17	18	19
7:00-7:15	21	17	16	14	13	16	19	21
7:15-7:30	19	18	15	15	15	21	20	21
7:30-7:45	17	18	12	16	12	19	21	21
7:45-8:00	15	19	15	17	17	19	19	19
8:00-8:15	18	20	18	13	18	14	18	20
8:15-8:30	19	17	13	16	16	14	17	19
8:30-8:45	21	15	13	13	17	12	17	21
8:45-9:00	19	14	12	13	19	14	15	19
9:00-9:15	20	16	11	14	18	15	18	20
9:15-9:30	20	16	14	15	16	19	17	20
9:30-9:45	18	17	15	12	14	18	16	18
9:45-10:00	17	16	12	11	12	16	16	17
10:00-10:15	20	13	10	10	13	15	14	20
10:15-10:30	19	12	9	10	15	14	14	19
10:30-10:45	18	12	8	8	14	11	14	18
10:45-11:00	18	13	7	7	10	11	14	18
11:00-11:15	15	15	8	7	11	10	11	15
11:15-11:30	17	16	7	8	9	9	12	17
11:30-11:45	19	12	6	6	7	8	10	19
11:45-12:00	16	9	5	5	8	9	9	16
12:00-12:15	16	8	5	6	6	7	8	16
12:15-12:30	15	7	4	4	5	5	7	15
12:30-12:45	9	5	3	3	3	4	3	9
12:45-1:00	8	4	2	2	2	2	5	8
<b>Day Peak</b>	<b>23</b>	<b>21</b>	<b>20</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>23</b>	<b>23</b>

**Indio**  
**(82043 Highway 111, Indio, CA 92201)**





**La Quinta**  
**(78611 Highway 111, La Quinta, CA 92253)**







**Long Beach**  
**(6391 E Pacific Coast Highway, Long Beach, CA 90803)**

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	31	25	15		
00:15				12:15	30	15	15		
00:30				12:30	52	50	13		
00:45				12:45	25	138	29	119	8
01:00				13:00	29	29	12		
01:15				13:15	32	27	13		
01:30				13:30	18	23	8		
01:45				13:45	X	79	X	79	7
02:00				14:00			8		
02:15				14:15			7		
02:30				14:30			8		
02:45				14:45			6		
03:00				15:00			6		
03:15				15:15			5		
03:30				15:30			4		
03:45				15:45			5		
04:00				16:00	16	19	6		
04:15				16:15	12	17	5		
04:30				16:30	14	14	3		
04:45				16:45	16	58	10	60	6
05:00				17:00	19	14	5		
05:15				17:15	20	19	7		
05:30				17:30	19	19	7		
05:45				17:45	11	69	21	73	5
06:00				18:00	17	20	12		
06:15				18:15	X	X	7		
06:30				18:30	X	X	10		
06:45				18:45	X	17	X	20	12
07:00				19:00			10		
07:15				19:15			11		
07:30				19:30			7		
07:45				19:45			6		
08:00				20:00			8		
08:15				20:15			6		
08:30				20:30			9		
08:45				20:45			10		
09:00				21:00			12		
09:15				21:15			16		
09:30				21:30			14		
09:45				21:45			15		
10:00				22:00			14		
10:15			5	22:15			13		
10:30			8	22:30			12		
10:45			7	22:45			12		
11:00			3	23:00			11		
11:15			6	23:15			13		
11:30	19	25	7	23:30			9		
11:45	21	40	27	52	14	23:45	8		
<b>Total Vol.</b>	<b>40</b>	<b>52</b>				<b>361</b>	<b>351</b>		

Daily Total
IN 401
OUT 361

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Saturday, May 19, 2012

CITY: Long Beach

PROJECT: In N Out Burger

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	17	17	16		
00:15				12:15	34	20	14		
00:30				12:30	22	30	16		
00:45				12:45	32	105	37	104	10
01:00				13:00	33	27	15		
01:15				13:15	29	23	16		
01:30				13:30	29	33	10		
01:45				13:45	X	91	X	83	9
02:00				14:00			12		
02:15				14:15			13		
02:30				14:30			9		
02:45				14:45			8		
03:00				15:00			9		
03:15				15:15			9		
03:30				15:30			6		
03:45				15:45			9		
04:00				16:00	21	25	8		
04:15				16:15	22	16	10		
04:30				16:30	21	25	8		
04:45				16:45	24	88	24	90	5
05:00				17:00	19	19	9		
05:15				17:15	19	21	10		
05:30				17:30	28	25	10		
05:45				17:45	18	84	19	84	9
06:00				18:00	23	18	13		
06:15				18:15			9		
06:30				18:30			10		
06:45				18:45	X	23	X	18	14
07:00				19:00			12		
07:15				19:15			13		
07:30				19:30			9		
07:45				19:45			9		
08:00				20:00			10		
08:15				20:15			9		
08:30				20:30			11		
08:45				20:45			12		
09:00				21:00			13		
09:15				21:15			17		
09:30				21:30			15		
09:45				21:45			10		
10:00				22:00			12		
10:15			4	22:15			14		
10:30			7	22:30			13		
10:45			9	22:45			11		
11:00			7	23:00			9		
11:15			8	23:15			10		
11:30	25	16	9	23:30			8		
11:45	27	52	18	34	16	23:45	6		
<b>Total Vol.</b>	<b>52</b>	<b>34</b>				<b>391</b>	<b>379</b>		

Daily Total	
IN	443
OUT	391

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**Los Angeles**  
**(9149 S Sepulveda Blvd, Los Angeles, CA 90045)**

05.16.2012

Wednesday, May 16th, 2012

CITY: Los Angeles

PROJECT: In-N-Out Burger

AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		
00:00				12:00	39	35	20		
00:15				12:15	48	36	18		
00:30				12:30	52	37	21		
00:45				12:45	57	41	19		
01:00				13:00	39	45	22		
01:15				13:15	36	46	21		
01:30				13:30	35	41	20		
01:45				13:45	X	110	X	132	20
02:00				14:00				21	
02:15				14:15				21	
02:30				14:30				22	
02:45				14:45				21	
03:00				15:00				18	
03:15				15:15				17	
03:30				15:30				16	
03:45				15:45				18	
04:00				16:00	31	24		17	
04:15				16:15	18	18		15	
04:30				16:30	27	28		12	
04:45				16:45	33	109	22	92	10
05:00				17:00	34	30		9	
05:15				17:15	25	33		14	
05:30				17:30	36	23		17	
05:45				17:45	32	127	25	111	19
06:00				18:00	30	36		20	
06:15				18:15				19	
06:30				18:30				20	
06:45				18:45				18	
07:00				19:00				17	
07:15				19:15				18	
07:30				19:30				19	
07:45				19:45				20	
08:00				20:00				21	
08:15				20:15				19	
08:30				20:30				19	
08:45				20:45				20	
09:00				21:00				18	
09:15				21:15				19	
09:30				21:30				20	
09:45				21:45				19	
10:00			0	22:00				21	
10:15			2	22:15				17	
10:30			5	22:30				16	
10:45			6	22:45				14	
11:00			6	23:00				16	
11:15			12	23:15				17	
11:30	28	32	16	23:30				15	
11:45	31	59	29	61	120	19	23:45	13	
<b>Total Vol.</b>	59	61				542	484		

Daily Totals		
IN		OUT
601		545

PACIFIC TRAFFIC & TRANSIT DATA SERVICES



05/19/12		CITY: Los Angeles				PROJECT: In-N-Out Burger			
AM Period	IN	OUT	MAXIMUM QUEUE	PM Period	IN	OUT	MAXIMUM QUEUE		MAXIMUM QUEUE
00:00				12:00	49	38			20
00:15				12:15	49	41			16
00:30				12:30	51	43			20
00:45				12:45	66	215	57	179	20
01:00				13:00	53	49			23
01:15				13:15	54	51			22
01:30				13:30	49	54			20
01:45				13:45	X	156	X	154	20
02:00				14:00					21
02:15				14:15					26
02:30				14:30					22
02:45				14:45					21
03:00				15:00					18
03:15				15:15					17
03:30				15:30					17
03:45				15:45					9
04:00				16:00	28	24			10
04:15				16:15	37	20			14
04:30				16:30	38	25			18
04:45				16:45	25	128	34	103	8
05:00				17:00	15	26			8
05:15				17:15	28	30			9
05:30				17:30	43	24			20
05:45				17:45	33	119	33	113	19
06:00				18:00	35	38			20
06:15				18:15	X	X			19
06:30				18:30	X	X			20
06:45				18:45	X	35	X	38	18
07:00				19:00					19
07:15				19:15					20
07:30				19:30					21
07:45				19:45					22
08:00				20:00					21
08:15				20:15					22
08:30				20:30					18
08:45				20:45					17
09:00				21:00					16
09:15				21:15					19
09:30				21:30					18
09:45				21:45					20
10:00				22:00					19
10:15			3	22:15					18
10:30			4	22:30					19
10:45			6	22:45					18
11:00			8	23:00					21
11:15			11	23:15					17
11:30	31	46	12	23:30					16
11:45	42	73	35	23:45	81				14
<b>Total Vol.</b>	<b>73</b>	<b>81</b>				<b>653</b>	<b>587</b>		

Daily Totals	
IN	OUT
726	668

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**Thousand Palms**  
**(72265 Varner Rd, Thousand Palms, CA 92276)**

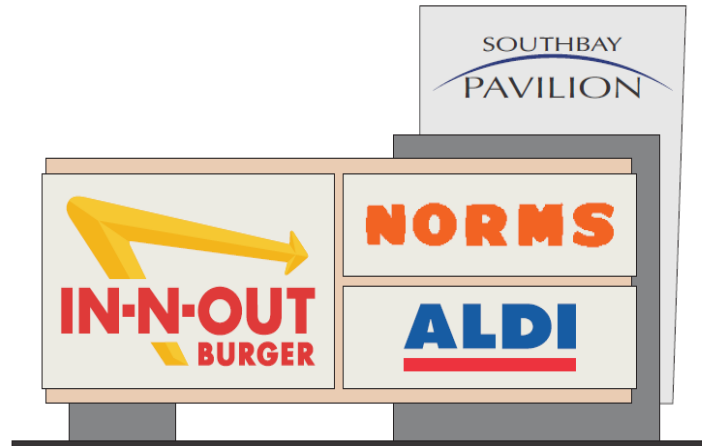






**GANDDINI GROUP INC.**

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MONUMENT SIGN SCALE: NONE  
SIZES TO BE VERIFIED

**OPTION A - 1**

**A** SIGNTYPE **INO-MON-XXxXXxXX**

**PROPOSED: DOUBLE FACED INTERNALLY ILLUMINATED MONUMENT SIGN**  
**SIGN FABRICATION:** ALUMINUM CONSTRUCTION - PAINTED PER MASTER SIGN PLAN SPECIFICATIONS  
**TENANT PANELS:** .125" ROUTED ALUMINUM ('SHOE BOX' FABRICATION)  
**LETTERS / GRAPHICS:** ROUTED FROM SIGN FACE &  
 BACKED WITH .177" WHITE ACRYLIC WITH FIRST SURFACE VINYL GRAPHICS  
**ILLUMINATION:** WHITE LEDs AS REQUIRED

**IN-N-OUT VINYL SPECIFICATIONS**

- V2** 3M 3630-235 'AUTUMN YELLOW' TRANSLUCENT
- V4** 3M 3630-33 'RED' TRANSLUCENT
- V6** 3M 3630-020 'WHITE' TRANSLUCENT
- V10** 3M 3630-125 'GOLDEN YELLOW' TRANSLUCENT -  
APPLIED ON TOP OF 'BRIGHT YELLOW' VINYL
- V13** 3M 7725-15 'BRIGHT YELLOW' - OPAQUE VINYL  
APPLIED TO ACRYLIC FACE WITH 'GOLDEN YELLOW' VINYL ON TOP



4444 Federal Blvd San Diego, CA 92102  
(619) 527-6100 signtech.com

**In-N-Out**  
20700 S. Avalon Blvd. Carson, CA 90746

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Sales: Bob McCarter  
Coordinator: Garry Wilcox  
Design: Thomsen  
Engineering:

date: 03/17/21  
drawing: 21-00414 rev:10-06/03/22  
quote:  
project ID: IN-N-OUT\_S.AVALON\_1