SAN RAFAEL
THE CITY WITH A MISSION

Community Development Department – Planning Division

Meeting Date: May 4, 2021
Case Numbers: UP21-006, ED21-022
Project Planner: Steve Stafford – (415) 458-5048
Agenda Item:

REPORT TO DESIGN REVIEW BOARD

SUBJECT: 800 Mission Ave. ("Aegis Living San Rafael") – Request amendment of Use Permit and an Environmental and Design Review Permit approvals to allow a 11' 2" height bonus for a previously approved senior assisted living and memory care facility on two vacant Downtown parcels with 29,885 sq. ft. of combined area. Amendment of the approvals would increase the height of the building from 36' to 47' 2" and increase the unit count from 77 suites to 106 suites. The remainder of the approved site and building design would remain unchanged; APNS: 011-184-08 & -09; Multifamily Residential – High Density (HR1) District Zone; Geoff Forner, Applicant; ASC San Rafael LLC, Owner; Downtown Neighborhood.

PROPERTY FACTS

Location	General Plan Designation	Zoning Designation	Existing Land-Use
Project Site:	**High–Density Residential (HDR)**	**HR1**	**Vacant Lot**
North:	HDR	HR1	SFR
South:	5/M R/O	5/M R/O	Apartment Buildings
East:	5/M R/O	5/M R/O	Service Station w/Mini-Mart
West:	HDR	HR1	Office

Lot Size
Required: 29,885 sf
Proposed: 6,000 sf

Lot Coverage (Max.)
Allowed: 60% (17,931 sf)
Proposed: 59% (17,720 sf)

Height
Allowed: 36'
Proposed: 47' 2" (includes height bonus; excludes domes, trellis elevator and staircase protruding features)

Density (Max.)
Allowed: 29 units (1 unit per 1,000 sf of gross lot area)
Proposed: None ('efficiency kitchens' only for assisted care units only)

Parking
Required: 53 parking spaces
Proposed: 40 parking spaces

Usable Outdoor Area (Min.)
Required: None (Recommended 100 sf per unit)
Proposed: 6,248 sf (common indoor and outdoor recreational area)

Landscaping (Min.)
Required: 50% of Front and Street Side Setback (2,164 sf)
Proposed: 51% of Front and Street Side Setback (2,209 sf)

Setbacks

	Required	Existing	Proposed
Front:	15'	n/a	15'
Side(s):			
Street:	10'	n/a	10'
Interior:	5'	n/a	5'
Rear:	5'	n/a	5'

Tree Removal
Total(No./Species): 6 (4 'mature') + 5 Street Trees (1 'mature')

Grading
Total: 14,000 CYDS

Requirement:	None (15 Replacement Trees Encouraged)	Cut:	13,000 CYDS
		Fill:	1,000 CYDS
Proposed:	13 Replacement Trees (includes 3 Street Trees)	Off-Haul:	13,000 CYDS

SUMMARY

The project is being referred to the Design Review Board (Board) for review of proposed amendments to an approved project. On September 4, 2018, the City Council denied an appeal (City Council Resolution No. 14575) and upheld the Planning Commission's July 10, 2018 conditional approval of a new assisted living facility with memory care services and 40 garage parking spaces, located at 800 Mission Ave. (previously 1203-1211 Lincoln Ave.). The proposed amendments request a height bonus of 11' 2", increasing the overall height, from 36' to 47' 2". The proposed height bonus would also increase the size of the project, from 77 resident 'suites' to 106 'resident' suites. The site is currently vacant and the project would include site grading, drainage, landscaping and signage.

The proposed amendments to the approved project require the following approvals by the Planning Commission with the recommendation of the Board:

- An Environmental and Design Review Permit Amendment for modifications in the design of the approved building and site improvements; and
- A Use Permit Amendment to allow both the new assisted living facility to operate on the site, the requested height bonus and a *Parking Modification* to reduce the parking requirement for the project, from 53 to 40 on-site parking spaces.

This is an amendment of an approved project in which the Board's review is limited to the scale/mass of the requested height bonus; how it relates to the surrounding neighborhood since the expanded project retains the California Mission Revival architecture, which the Board unanimously recommended for approval to the Planning Commission on June 5, 2018. No other changes to the approved design of the project are proposed. Staff supports the scale/mass of the requested height bonus, finding it adequately relates to the predominant four- and three-story scale of existing development immediately adjacent to the project site. Staff requests the Board's comments on the following:

Scale/Mass

- Whether the scale/mass of the requested height bonus adequately relates to the predominant scale of existing development of development in the immediate neighborhood.

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BACKGROUND

Site Description & Setting:

The project site is comprised of two (2) adjacent parcels located at the northwest corner of the intersection of Lincoln and Mission Avenues. The site is a combined 29,885 sq. ft. in area and has an approximate 10% cross-slope, trending northwest to southeast. In 2007, prior buildings located on the project site were demolished, which remains vacant.

The project site is surrounded by predominantly multifamily residential development immediately to the north and west, a service station to the south across Mission Ave. and a mixture of commercial office and single-family residential development to the east across Lincoln Ave.

History:

- On September 4, 2018, the City Council denied an appeal and upheld the Planning Commission's conditional approval of a Use Permit (UP17-030) and an Environmental and Design Review Permit (ED17-090) to allow the construction and operation of a new 77-suite assisted living facility with memory care and associated garage parking, and site improvements on two (2) vacant Downtown parcels located at 800 Mission Ave.

- On October 8, 2019, the Design Review Board recommended approval of final details on the site landscaping, exterior lighting and outdoor terrace finishes.

- On March 10, 2020, Planning staff approved a minor modification to the design of the blue-tiled tower/dome feature, located at the southeast corner of site, to include additional windows to match the existing approved window design.

- On August 21, 2020, Planning staff again approved a minor modification to the design of the blue-tiled tower/dome feature, located at the southeast corner of site, to reduce the overall height, and to redesign and relocate the approved water fountain feature.

- On September 8, 2020, the Community Development Director approved the consolidation (LLA19-006) of the two (2) parcels. This Lot Line Adjustment/Consolidation will need to be recorded with the County of Marin by the applicant or property owner prior to issuance of building permits.

- On February 25, 2021, the Zoning Administrator approved a two (2) year time extension for the project due to project's financial infeasibility to construct during a global pandemic event. No additional changes, modifications or additions were proposed or approved to the project.

- Building permits for the project were submitted on September 3, 2019 (foundation only) and October 21, 2019 (building) and approved on December 20, 2019 (foundation only) and August 21, 2020 (building). The building permit for the foundation only was issued on December 20, 2019 though no site grading has occurred on the site. The building permit for the building has not be issued.

PROJECT DESCRIPTION

Use:
The project proposes to amend the height and unit count of an approved assisted living facility with memory are services on the project site.

Site Plan:
No design changes are proposed to the approved site plan.

Building Height:
The project proposes to increase the approved height of the building, from 36' to 47' 2". The project essentially proposes to add an additional or fifth floor with additional residential 'suites.' The approved height of the domes features, and rooftop elevator and stair overruns will not increase.

Floor Plan:
The project proposes to add an additional or fifth floor with 29 additional residential 'suites', increasing the overall unit count, from 77 approved 'suites' to 106 proposed residential 'suites'. No changes are proposed to the remaining approved floor plans. The second floor continues to provide secured memory care services and includes common indoor and outdoor terrace areas. The previously approved rooftop terrace was removed from the project design during the approval of the time extension by the Zoning Administrator in February 2021.

Architecture:
No design changes are proposed to the approved architecture. Rather, the proposed amendment to the project would return the blue-tiled dome feature along Lincoln Ave., which was previously approved by staff at the request of the applicant to meet cost-efficiencies. The project is approved with a Spanish

Colonial- or Mission Revival-like architecture with predominant design features including large arched windows, whitewashed stucco walls, red clay roof tiles and tile dome towers. The dome on top of the tower features were approved to be externally-illuminated and tiled in a color (blue) distinct from the red roof tile which would complement the blue fabric awnings along both street elevations. Decorative heavy-timber rafter 'tails' are included under the roof eaves. Decorative wrought iron balconies, railings, fencing and gates are well-presented along all building facades. The previously approved, externally-illuminated, 12'-dia. circular fountain with a center statue or sculpture, located at the Mission and Lincoln Ave. intersection, was removed and replaced with additional landscaping as an administrative amendment by staff in 2020.

No changes are proposed to the approved exterior colors and materials. The proposed additional or fifth floor is proposed to match the approved exterior colors and materials.

Parking:
No design changes are proposed to the approved parking garages plan. The project is approved for 40 on-site garage parking spaces. Of these, 37 parking spaces are located in the subterranean parking garage accessed by the driveway along Mission Ave. and three (3) additional parking spaces will be located on the first floor and accessed by the driveway along Lincoln Ave.

Landscaping:
No design changes are proposed to the approved site landscape plans. The project proposes to remove six (6) existing on-site trees on the smaller (1211 Lincoln Ave.) portion of the site, four (4) of which are 'significant' (A 'significant' tree is any tree 12" or greater in diameter, as measured 4.5' above the root crown, or any Oak tree 6" or greater in diameter, as measured 4.5' above the root crown). In 2007, all site landscaping was previously removed from the larger parcel (1203 Lincoln Ave.) during demolition of the prior motor court. The project also proposes to remove five (5) existing street trees along the Lincoln Ave. frontage, one (1) of which is 'significant'. The project is approved to plant new landscaping along both the Mission and Lincoln Ave. frontages, including 10 replacement trees, plus three (3) new street trees along Lincoln Ave., and a mixture of shrub, grass and vine plantings. New landscaping is also required within a raised bioretention 'planter' bordering the 2nd level outdoor rear terrace.

Grading/Drainage:
No design changes are proposed to the approved preliminary grading and drainage plan. The project proposes a total of 14,000 cubic yards (CYDS) of excavation with 13,000 CYDS of 'cut', 1,000 CYDS of 'fill' and 13,000 YDS of off-haul. A raised, 1,036-sq. ft., bioretention 'planter' is approved bordering the 2nd level outdoor rear terrace with landscaping.

ANALYSIS

General Plan 2020 Consistency:
The General Plan land use designation for the site is High Density Residential (HDR). Pursuant to Land Use Policy LU-13 (*Height Bonuses*) in the San Rafael General Plan 2020, a height bonus of up to 12' may be granted with a Use Permit for development projects that meet the affordable housing requirement, provided the building's design is consistent with Community Design policies and design guidelines. The project requests a 11' 2" height bonus. Staff requests the Board's guidance in evaluating the project for consistency with the following design-related General Plan Policies:

- *<u>Community Design Policy CD-1d</u> (City Image) Landscape Improvements) recognizes that landscaping is a critical design component to. Encourage maximum use of available landscape area to create visual interest and foster sense of the natural environment in new and existing developments. Encourage the use of a variety of site appropriate plant materials.*

- *CD-2 (Neighborhood Identity) Recognize and promote the unique character and integrity of the city's residential neighborhoods and Downtown. Strengthen the "hometown" image of San Rafael by: a) Maintaining the urban, historic, and pedestrian character of the Downtown; b) Preserving and enhancing the scale and landscaped character of the City's residential neighborhoods; c) Improving the appearance and function of commercial areas; and d) Allowing limited commercial uses in residential neighborhoods that serve local residents and create neighborhood-gathering places.*

- *CD-3 (Neighborhoods) seeks to recognize, preserve and enhance the positive qualities that give neighborhoods their unique identities, while also allowing flexibility for innovative design. New development should respect the context and scale of existing neighborhoods.*

- *CD-5 (Views) seeks to respect and enhance to the greatest extent possible, views of the Bay and its islands, Bay wetlands, St. Raphael's church bell tower, Canalfront, marinas, Mt. Tamalpais, Marin Civic Center and hills and ridgelines from public streets, parks and publicly accessible pathways.*

- *CD-7 (Downtown and Civic Center) Build upon the character of these areas by controlling land uses to clearly distinguish their boundaries; by recognizing Mission San Rafael Arcangel and St. Raphael Church, Marin Civic Center, and other buildings that help define the City's character, and requiring that these and other architectural characteristics and land uses that give these areas their identity are strengthened.*

- *CD-9 (Transportation Corridors) seeks to improve the function and appearance of transportation corridors, recognize those shown on Exhibits 17 and 18 and define each corridor's contribution to the City based upon its land use and transportation function and how it is experienced by the public.*

- *CD-10 (Nonresidential Design Guidelines) Recognize, preserve and enhance the design elements that contribute to the economic vitality of commercial areas. Develop design guidelines to ensure that new nonresidential and mixed-use development fits within and improves the immediate neighborhood and the community as a whole*.

- *CD-18 (Landscaping) recognizes landscaping as a significant component of all site design.*

Planning staff continues to find the landscaping and pedestrian scale along the street frontages helps connect the predominant residential character along Lincoln Ave., a transportation corridor, with the commercial Downtown immediately south of the project site. The proposed Mission Revival architecture appears to respect and not compete with the scale and design of St. Raphael's church bell tower. While the St. Raphael's church bell tower is approximately 10' lower in height of the domed towers in the proposed project design, St. Raphael's church bell tower is located more than two city blocks (1,100') west of the project site and approximately 30' higher in elevation. While the towers in the proposed project design would likely create a new view impact of Puerto Suello Hill as seen from northbound U.S. Highway 101, staff finds this to be limited.

General Plan 2040 Consistency:
The City is currently in the process of updating the General Plan. Under the draft General Plan 2040, the General Plan land use designation for the site is Downtown Mixed Use (DMU) with a maximum height as determined by the draft Downtown Precise Plan (currently 40'). The draft Downtown Precise Plan allows a height bonus of up to 10' (overall maximum height of 50') on the site. The project requests a 11' 2" height bonus for an overall height of 47' 2" (per UBC measurement of height.

Zoning Ordinance Consistency:

Chapter 4 – Residential (R, DR, MR, HR) Districts

The site is located within the Multifamily Residential – High Density (HR1) District. The proposed project will require consistency with the property development standards for the HR1 District, including maximum 60% lot coverage, minimum required yard setbacks (15' front; 10' street side; 5' interior side and rear) and minimum landscaping (50% of required front and street side yards). The project will exceed the maximum 36' height for the site, subject to the requested height bonus. Additionally, the project voluntarily proposes to create 3,970 sq. ft. of usable common outdoor area for the residents, reduced from 5,876 sq. ft. of usable common outdoor area previously approved by the project and after the elimination of the roof terrace. Pursuant to SRMC Section 14.04.040 (Property Development Standards for the HR District), common indoor area suitable for recreational uses may be counted toward the usable outdoor area requirement. Once these areas are included, the project proposes 6,248 sq. ft. of combined common indoor and outdoor area suitable for recreational use. These property development standards applicable to the project are identified in the *Property Facts* summary above. As designed, the project complies with all applicable property development standards for the HR1 District, including maximum lot coverage, minimum required yard setbacks and minimum landscaping. The project also would comply with the maximum height, subject to the requested height bonus.

Chapter 16 – Site and Use Regulations

Affordable Housing Requirement

SRMC Section 14.16.030 (*Affordable Housing Requirement*) requires all non-residential development projects to comply with the City's adopted inclusionary housing requirement through the payment of an in-lieu fee based on the type of development proposed for the site. The project continues to propose an assisted living facility with memory care services which is comparable to a hotel use. The proposed facility would continue to provide rooms or 'suites' with limited 'efficiency kitchens' and offer ancillary services to the residents like communal dining (both indoor and outdoor), "juice bar", "pub", "bistro", fitness, barber/salon, cinema and activities areas, in which some of these services would not be typically found in a hotel. Therefore, it is still credible to apply a hybrid rate for determining the amended affordable housing requirement linkage fee.

The approved project is 64,054 sq. ft. in size and, when applying both the hotel (0.0075 affordable units per 1,000 gross sq. ft.) and personal service rates (0.0225 affordable units per 1,000 gross sq. ft.) identified in Table 14.16.030 – 3, was required to provide 0.015 affordable housing units per 1,000 gross sq. ft., which translates to 0.96 low income units or an affordable housing in-lieu fee of approximately $318,827.20 for the project, using the then-current affordable housing in-lieu fee of $331,070.00 per unit. To further contribute to the City's affordable housing initiatives, the prior property owner voluntarily increased the affordable housing in-lieu fee to $500,000 as a 'public benefit' (a 63.8% increase in the required affordable housing requirement), which was accepted by Planning Commission and the City Council on project appeal as a condition of project approval.

The amended project proposes to increase the new building size to 75,489 sq. ft. which, when applying the same affordable housing requirement formula (0.015 affordable housing units per 1,000 gross sq. ft.) translates to 1.13 low income units, or a revised affordable housing in-lieu fee of $372,318 for the project, using today's updated affordable housing in-lieu fee of $329,485 per unit. The current property owner, Aegis Senior Communities LLC ('Aegis Living'), proposes to continue to voluntarily increase the affordable housing in-lieu fee to $589,569 as a 'public benefit' (a 63.2% increase in the required affordable housing requirement).

Height Bonus

SRMC Section 14.16.190 (B) (*Lincoln Avenue Height Bonus*) a height bonus may be granted through Use Permit by the Planning Commission of up to 12' for projects located on Lincoln Avenue, between

Mission Avenue and Hammondale Ct., on lots greater than one hundred fifty (150′) in width and 20,000 sq. ft. in size and meeting their affordable housing requirement. The project meets the location, width and size requirement. As stated previously in staff's report, the required affordable housing in-lieu fee for the amended project is $372,318 (1.13 affordable housing units), using the current affordable housing in-lieu fee of $329,485 per unit. The project proposes to voluntarily increase the affordable housing in-lieu fee to $589,569 as a 'public benefit' (a 63.2% increase in the required affordable housing requirement).

Chapter 18 – Parking Standards

Parking Requirements
SRMC Section 14.18.040 (*Parking Requirements*), the project requires on-site parking, based on the following proposed uses:

- Assisted living facilities are required to provide one (1) parking space for each five (5) clients; plus
- One (1) parking space for each staff person, visiting doctor or employee on maximum staffed shift.

Based on this formula, the project was required to provide 44 off-street parking spaces though it was approved to provide 40 off-street parking spaces, subject to a requested *Parking Modification* and supported with a traffic and parking study (Transpogroup, dated May 30, 2018), which anticipated peak parking demand of 31 parking spaces for residents, staff, physicians and guests, based on a proposed 88-bed assisted living facility. The amended project proposes to increase both the number of residents and staffing levels. Based on this formula, the amended project is required to provide 53 off-street parking spaces. The project continues to propose to provide 40 off-street parking spaces, subject to a requested *Parking Modification* and supported with an updated traffic and parking study (Transpogroup, dated March 3, 2021), which anticipated peak parking demand of 37 parking spaces for residents, staff, physicians and guests, based on a proposed 106-bed assisted living facility (Updated Transportation and Parking Study). The amended project essentially requests a height bonus to increase the number of beds for memory care residents. This updated traffic and parking study, like the original analysis, finds the memory care residents would create no parking demand since memory care residents are prohibited from vehicle ownership due to cognitive difficulties. The total required parking for the amended project is 53 on-site parking spaces while 40 on-site parking spaces continue to be proposed with requests for a *Parking Modification* for 13 required on-site parking spaces.

Parking Modification
The revised project continues to request a *Parking Modification*, through the Use Permit Amendment, to reduce the parking requirement by 13 parking spaces, from 53 to 40 on-site parking spaces, based on the historic operational needs from other assisted living facilities similar to the project. The amended project, like the approved project, supports this request with an updated traffic and parking study (Transpogroup, dated March 3, 2021; access here), which anticipates peak parking demand of 37 parking spaces for residents, staff, physicians and guests, based on a proposed 106-bed assisted living facility. All requests for *Parking Modification* require the review and recommendation of both the Community Development Director and the City Engineer, and the approval of the Planning Commission. The Community Development Director, through Planning staff, and the City Engineer support this request for *Parking Modification*, concurring with the analysis and findings in the submitted updated traffic and parking study, and determining that parking demand would be further reduced by the site's close proximity to the adjacent SMART Downtown station (two City blocks southwest of the project site).

Guest Parking
Guest parking spaces are not required in the Downtown unless located within 200' of a residential district. While the project site is located within a residential district, guest parking is required for multifamily residential projects, based on residential units. As stated earlier in staff's report, the amended project does not propose any residential units (The project is comparable to a hotel by proposing to provide rooms or 'suites' for residents with 'efficiency kitchens' and with communal dining and entertainment and personal services) and, therefore, is not required to provide guest parking though voluntarily provides it. The project has submitted an updated traffic and parking study to support a request for *Parking Modification*, which anticipates peak parking demand (weekday) of 37 parking spaces which reduces to 28 spaces on weekends. Since the amended project continues to propose 40 off-street parking spaces, all parking spaces in excess of the 37 required parking spaces (weekdays, 28 weekends) would be available for guest parking.

Chapter 25 – Environmental and Design Review Permit
The project requires amendment of the existing approved Environmental and Design Review Permit by the Planning Commission with the Board's recommendation. The pertinent review criteria for Environmental and Design Review permits, pursuant to Section 14.25.050 (*Review Criteria; Environmental and Design Review Permits*), are as follows:

- *Site Design. Proposed structures and site development should relate to the existing development in the vicinity. The development should have good vehicular and pedestrian circulation and access. Safe and convenient parking areas should be designed to provide easy access to building entrances. The traffic capacity of adjoining streets must be considered. Major views of the San Pablo Bay, wetlands, bay frontage, the Canal, Mt. Tamalpais and the hills should be preserved and enhanced from public streets and public vantage points. In addition, respect views of St. Raphael's Church up "A" Street.*

- *Architecture. The project architecture should be harmoniously integrated in relation to the architecture in the vicinity in terms of colors and materials, scale and building design. The design should be sensitive to and compatible with historic and architecturally significant buildings in the vicinity. Design elements and approaches which are encouraged include: a) creation of interest in the building elevation; b) pedestrian-oriented design in appropriate locations; c) energy-efficient design; d) provision of a sense of entry; e) variation in building placement and height; and f) equal attention to design given to all facades in sensitive location*.

- *Materials and colors. Exterior finishes should be consistent with the context of the surrounding area. Color selection shall coordinate with the predominant colors and values of the surrounding landscape and architecture. High-quality building materials are required. Natural materials and colors in the earth tone and wood tone range are generally preferred. Concrete surfaces should be colored, textured, sculptured, and/or patterned to serve design as well as a structural function.*

- *Walls, Fences and Screening. Walls, fences and screening shall be used to screen parking and loading areas, refuse collection areas and mechanical equipment from view. Screening of mechanical equipment shall be designed as an integrated architectural component of the building and the landscape. Utility meters and transformers shall be incorporated into the overall project design.*

- *Exterior Lighting. Exterior lighting should provide safety for building occupants, but not create glare or hazard on adjoining streets or be annoying to adjacent properties or residential areas.*

- *Landscape Design. Landscaping shall be designed as an integral enhancement of the site and existing tree shall be preserved as much as possible. Water-conserving landscape design shall be required. A landscaped berm around the perimeter of parking areas is encouraged. Smaller scale,*

seasonal color street trees should be proposed along pedestrian-oriented streets while high-canopy, traffic-tolerant trees should be proposed for primary vehicular circulation streets.

Staff's Comments. This is an amendment of an approved project in which the Board's review is limited to the scale/mass of the requested height bonus; how it relates to the surrounding neighborhood since the expanded project retains the California Mission Revival architecture, which the Board unanimously recommended for approval to the Planning Commission on June 5, 2018. No other changes to the approved design of the project are proposed. The topography of the project site slopes (11% average cross-slope) up from the intersection of Mission and Lincoln Avenues to the rear of the site, trending southeast-to-northwest. This site topography helps to underground the 1st floor of the new building at the rear of the site. The amended project would have the visual appearance of a five-story building at the intersection of Mission and Lincoln Avenues and a four-story building at the rear and interior side elevations. The predominant scale of existing development immediately adjacent to the project site is four-story (west; 820 Mission Ave.) and three-story (north; 1215 Lincoln Ave. and 111 Laurel Pl.).

Staff supports the scale/mass of the requested height bonus, finding it adequately relates to the predominant four- and three-story scale of existing development immediately adjacent to the project site. Staff requests the Board's comments on the following:

- Whether the scale/mass of the requested height bonus adequately relates to the predominant scale of existing development of development in the immediate neighborhood.

Subdivision Ordinance Consistency:

<u>Chapter 5 – Lot Line Adjustments and Consolidations</u>
The amended project continues to propose to construct the new assisted living facility across the legal property line boundaries of two (2) adjacent Downtown parcels. On September 8, 2020, a Lot Line Adjustment was administratively approved for the consolidation of the two parcels which comprise the project site. New Grant Deeds, accompanied with a Plat Map and legal descriptions, will need to be recorded prior to building permit issuance for the amended project.

NEIGHBORHOOD CORRESPONDENCE

Notice of hearing for the project was conducted in accordance with noticing requirements contained in Chapter 29 of the Zoning Ordinance. A Notice of Public Hearing was mailed to all property owners and occupants within a 300-foot radius of the project site, the appropriate neighborhood groups (the Lincoln-San Rafael Hill Neighborhood Association and the Federation of San Rafael Neighborhoods), and all other interested parties (applicant and planner), a minimum of 15 calendar days prior to the Board meeting. Additionally, notice was posted on the project site, at the corner of Mission and Lincoln Avenues, also a minimum of 15 calendar days prior to the Board meeting.

At the time of printing staff's report, staff had received two (2) written comment as a result of this noticing; both, not surprisingly, from owners of separate condominium units from the building (820 Mission Ave.) located immediately west of the project site, along the Mission Ave. Both Doug Holm and Helga Blum strongly oppose the requested height bonus, stating the additional building height would create "detrimental overshadowing", noise, traffic, parking, light/glare and financial impacts, and "diminution of quality of life".

Staff's Comments: This is an amendment of an approved project in which the Board's review is limited to the scale/mass of the requested height bonus; how it relates to the surrounding neighborhood, and the traffic and parking impacts of the taller, larger building.

The topography of the project site slopes (11% average cross-slope) up from the intersection of Mission and Lincoln Avenues to the rear of the site, trending southeast-to-northwest. This site topography helps

to underground the 1st floor of the new building at the rear of the site. The amended project would have the visual appearance of a five-story building at the intersection of Mission and Lincoln Avenues and a four-story building at the rear and interior side elevations, similar to 820 Mission Ave. condominium building. The predominant scale of existing development immediately adjacent to the project site is four-story (west; 820 Mission Ave.) and three-story (north; 1215 Lincoln Ave. and 111 Laurel Pl.).

The amended project submittal included an updated traffic and parking study which found that, while the proposed increased height and unit count would increase traffic impacts and required parking, these will be negligible (increased traffic over approved project) or mitigated (increase unit count is for memory care beds which increases staffing demand modestly and will be met by parking provided). The City Engineer has reviewed and supports findings presented in the updated traffic and parking study.

The expanded project retains the California Mission Revival architecture, which the Board unanimously recommended for approval to the Planning Commission on June 5, 2018, which was ultimately approved.

All public comments received on the amended project are attached as Exhibit 4.

CONCLUSION

Planning staff supports the scale/mass of the requested height bonus, finding it adequately relates to the predominant four- and three-story scale of existing development immediately adjacent to the project site. Planning staff finds the expanded project retains the California Mission Revival architecture, which the Board unanimously recommended for approval to the Planning Commission in 2018. No other changes to the approved design of the project are proposed. The amended project continues to meet the applicable design-related General Plan Policies and Zoning Ordinance regulations and standards, with the exception of the parking requirement for which the project submitted a updated traffic and parking study and requests a *Parking Modification*. The project continues to propose to develop two (2) Downtown parcels which have been vacant since 2007. Staff, however, requests the Board provide direction on the points specified in the Analysis section of this report. Staff further welcomes additional comments or guidance on the any site or building design details that would further improve the project.

EXHIBITS

1. Vicinity Map
2. Project Narrative
3. Updated Transportation and Parking Study
4. Public Comments
5. Approved Project Plans
6. Proposed Project Plans

Full-sized and reduced (11" x 17") color plans have been provided to Board members only.

cc: ASC San Rafael LLC – 415 118th Ave. SE; Bellevue, WA 98005
Geoff Forner – 1 Belvedere Pl.; Mill Valley, CA 94941

800 Mission Ave. Project

While we strive to produce maps with good accuracy and with current accompanying data, the accuracy of the information herein cannot be guaranteed. This map was prepared using programetric computer aided drafting techniques, and it does not represent legal boundary survey data.

Aegis Senior Living LLC
415 118th Ave SE
Bellevue, WA 98005

March 5, 2021

City of San Rafael Planning Division
Attn: Steve Stafford
1400 Fifth Avenue
San Rafael, CA 94901

RE: 800 Mission Avenue – Aegis San Rafael Design Review Modification

Dear Mr. Stafford,

On behalf of Aegis Senior Living LLC, we are pleased to present the revised DRB application for the previously approved senior assisted living project at 800 Mission Avenue. This project was last seen by the San Rafael Design Review Board on June 5, 2018 as an 88-bed project, comprised of four-levels over one level of subgrade parking. At that meeting, the project was unanimously approved, and the architectural character was praised by numerous Board members.

Since its approval, the lending and construction environment has changed profoundly. This was largely driven by the global pandemic. As a result, the project has been financially infeasible to break ground with its current approved configuration. Fortunately, there are provisions in the San Rafael Zoning Code which allow for a height bonus in this location which we did not pursue originally but are now opting to incorporate. This results in a feasible project, which in turn will allow us to fulfill our commitment to the City's affordable housing fund, development of this long vacant site into a vibrant and beautiful addition to downtown, and an increase by 26 suites of housing for San Rafael's senior population. It also allows for the return of the architectural dome element that was part of the original DRB approval that was removed for cost purposes in 2020; an evolution of design is shown on Sheet A8.2

We have continued to evolve the design and we believe we have improved upon it, while at the same time also improving the economics of the project.

The project's revised design retains the high-quality Mission-style architecture that was originally approved in 2018, but now utilizes the height bonus allowed by section 14.16.190.B of the San Rafael Municipal Code. The revised building retains many of the project's original architectural features and provides an additional 5th level without exceeding the allowable building height. As demonstrated in Exhibit #1, the difference of massing between the two buildings is minimized by the revised building design.

Please review the detailed project description from Ankrom Moisan Architecture, summarizing all changes to the building design. A Traffic and Parking Analysis from TranspoGroup is also included. The parking provided on-site for this project is sufficient to accommodate all residents, staff, and visitors to the building during both the weekend, and weekday peak demands. The traffic impacts of this project are tremendously lower than other allowable uses on this site. The attached Traffic Impacts Analysis concludes that this project, even with the additional units, does not negatively affect any nearby intersections at peak, nor non-peak hours.

We look forward to working with the City of San Rafael to create a beautiful and feasible new assisted living community in San Rafael.

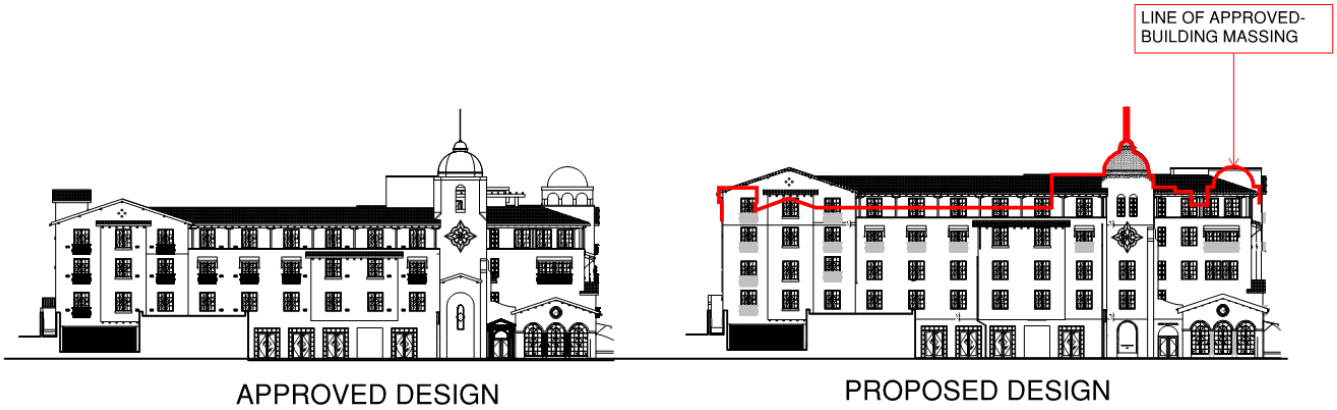
Sincerely,

Geoff Forner
Aegis Senior Living LLC
1 Belvedere Pl. Mill Valley, CA 94941
415-720-3806

Aegis Senior Living LLC

415 118th Ave SE
Bellevue, WA 98005

EXHIBIT #1



MEMORANDUM

Date:	March 3, 2021	**TG:**	18065.00
To:	Lauren Davini – San Rafael Public Works Rafat Raie – San Rafael Public Works		
From:	Stefanie Herzstein P.E. PTOE – Transpo Group		
cc:	Walter Braun and Bryon Ziegler – Aegis Senior Communities, LLC Geoff Forner, Monahan Pacific Corporation		
Subject:	Aegis Living 1203 Lincoln San Rafael Traffic Impact Study – Update		

This memorandum summarizes the potential traffic impacts of the updated Aegis Living development located in San Rafael, California. This memo is a supplement to the *Aegis Living 1203 Lincoln (San Rafael) – Revised Transportation Impact Analysis.* May 30, 2018. (herein referenced as May 2018 TIA). The May 2018 TIA shown in Attachment 1 analyzed 88 assisted living and memory care beds.

The study was coordinated with the City of San Rafael through a scoping meeting and includes updated project description, trip generation, change in traffic forecasts and operations impact if necessary, and parking supply/demand.

Project Description

The current proposal includes 52 memory care and 54 assisted living units for a total of 106 residential units with 106 beds. The current proposal has 18 more beds than the May 2018 TIA. Parking would be provided in an underground garage with 37 parking spaces and 3 additional spaces would be provided at the front entry for a total of 40 spaces. Access would be via Mission Avenue on the western edge of the site. A preliminary site plan is illustrated on Figure 1.

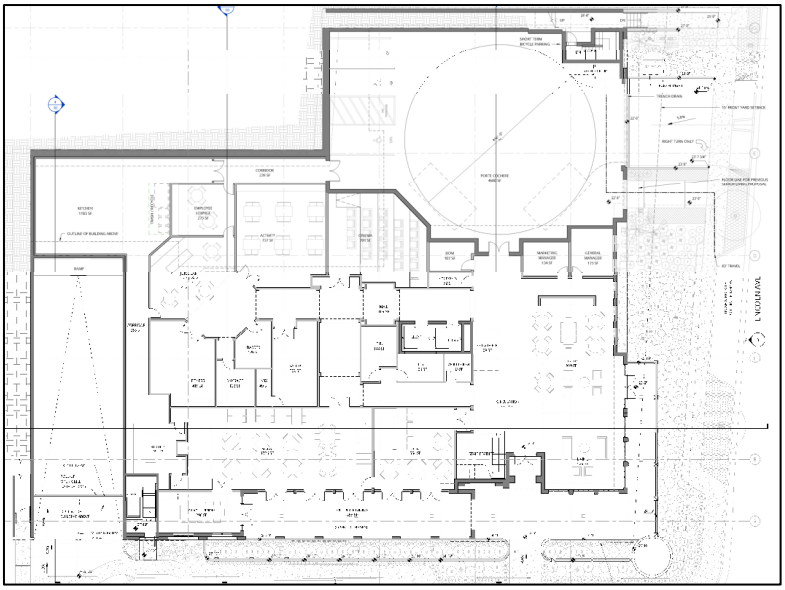


Figure 1. Preliminary Site Plan

Trip Generation

Trip generation rates would be consistent with the analysis provided in the previous TIA, which were based on data collected at two Aegis Living facilities in Washington. Detailed information regarding trip generation can be found on Pages 4-5 of the previous TIA provided in Attachment 1.

A summary of the trip generation estimates for the weekday daily and AM and PM peak hours are shown in Table 1. Trip generation calculations for the current 106-bed proposal are provided in Attachment 2.

Table 1. Weekday Trip Generation Estimates and Comparison

	Size	Daily[2] *(In / Out)*	AM Peak Hour[3] *(In / Out)*	PM Peak Hour[4] *(In / Out)*
May 2018 TIA	88 beds	270 *(135 / 135)*	15 *(11 / 4)*	19 *(6 / 13)*
Current Proposal	106 beds	320 *(160 / 160)*	18 *(13 / 5)*	23 *(7 / 16)*
Net Increase	***+18 beds***	***+50***	***+3***	***+4***

1. *Aegis Living 1203 Lincoln (San Rafael) – Revised Transportation Impact Analysis*. May 30, 2018
2. Based on the average trip rate (3.06 trips per bed) for Nursing Home from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017).
3. Based on the average trip rate (0.17 trips per beds) for Nursing Home from ITE *Trip Generation Manual* (10th Edition, 2017).
4. Average trip rates (0.22 trips per bed) based on trip generation studies conducted at existing Áegis Living communities with similar sizes, types of care, and location characteristics as the proposed project.

As seen in Table 1, the current proposal would generate 320 daily trips, 18 AM peak hour trips and 23 PM peak hour trips. When compared to the previous May 2018 TIA, the current development would generate an additional 50 daily trips, 3 AM peak hour trips and 4 PM peak hour trips.

Change in Traffic Volume Forecasts

With the current proposal's limited increase in trips shown in Table 1 above, the project's increase in weekday peak hour traffic volumes would be negligible. Table 2 summarizes the 2040 traffic volume forecasts at the 19 study intersections reviewed in the May 2018 TIA and the proposed project net increase in peak hour volumes compared to the original 88-bed project. The 2040 analysis scenario experiences the highest traffic volumes and traffic congestion levels. Project generated trips were assigned to the study area using the same trip distribution patterns in the May 2018 TIA.

Table 2. Proposed Project Weekday Peak Hour Traffic Volume Increase

Intersection	2040 Cumulative (May 2018 TIA)[1] Total Entering Volume	2040 Cumulative (Proposed Project)[2] Total Entering Volume	Proposed Project Net Volume Increase Volume	%
Weekday AM Peak Hour				
1. Lincoln Avenue/Mission Avenue	2,283	2,287	4	0.2%
2. Tamalpais Avenue W/Mission Avenue	1,221	1,223	2	0.2%
3. Tamalpais Avenue E/Mission Avenue	1,226	1,228	2	0.2%
4. Hetherton Street/Mission Avenue	2,375	2,378	3	0.1%
5. Irwin Street/Mission Avenue	2,636	2,638	2	0.1%
6. Lincoln Avenue/5th Avenue	1,361	1,362	1	0.1%
7. Hetherton Street/5th Avenue	1,676	1,677	1	0.1%
8. Irwin Street/5th Avenue	1,709	1,710	1	0.1%
9. Lincoln Avenue/4th Street	1,256	1,257	1	0.1%
10. Hetherton Street/4th Street	1,661	1,662	1	0.1%
11. Irwin Street/4th Street	1,844	1,845	1	0.1%
12. Lindaro Street/3rd Street	1,860	1,861	1	0.1%
13. Lincoln Avenue/3rd Street	2,341	2,342	1	0.0%
14. Hetherton Street/3rd Street	3,101	3,102	1	0.0%
15. Irwin Street/3rd Street	3,294	3,294	0	0.0%
16. Lindaro Street/2nd Street	2,336	2,337	1	0.0%
17. Lincoln Avenue/2nd Street	2,346	2,346	0	0.0%
18. Hetherton Street/2nd Street	3,376	3,377	1	0.0%
19. Irwin Street/2nd Street	3,168	3,168	0	0.0%
Weekday PM Peak Hour				
1. Lincoln Avenue/Mission Avenue	2,518	2,522	4	0.2%
2. Tamalpais Avenue W/Mission Avenue	1,198	1,201	3	0.2%
3. Tamalpais Avenue E/Mission Avenue	1,213	1,216	3	0.2%
4. Hetherton Street/Mission Avenue	2,570	2,572	2	0.1%
5. Irwin Street/Mission Avenue	3,062	3,064	2	0.1%
6. Lincoln Avenue/5th Avenue	1,607	1,608	1	0.1%
7. Hetherton Street/5th Avenue	1,780	1,781	1	0.1%
8. Irwin Street/5th Avenue	1,987	1,987	0	0.0%
9. Lincoln Avenue/4th Street	1,657	1,658	1	0.1%
10. Hetherton Street/4th Street	1,985	1,986	1	0.1%
11. Irwin Street/4th Street	2,227	2,227	0	0.0%
12. Lindaro Street/3rd Street	1,801	1,802	1	0.1%
13. Lincoln Avenue/3rd Street	2,377	2,378	1	0.0%
14. Hetherton Street/3rd Street	3,000	3,001	1	0.0%
15. Irwin Street/3rd Street	3,353	3,353	0	0.0%
16. Lindaro Street/2nd Street	2,397	2,398	1	0.0%
17. Lincoln Avenue/2nd Street	2,621	2,621	0	0.0%
18. Hetherton Street/2nd Street	3,459	3,461	2	0.1%
19. Irwin Street/2nd Street	3,742	3,742	0	0.0%

1. 2040 Cumulative plus Project peak hour volumes with 88 beds
1. 2040 Cumulative plus Project peak hour volumes with 106 beds

As seen in Table 2, the highest traffic volume increase would be up to 4 weekday peak hour trips or up to 0.2 percent increase in total entering volume during the peak hours. The majority of study intersections would only experience 1 additional weekday peak hour trip or no increase in traffic as a result of the current Aegis development proposal.

Traffic Operations Impact

The traffic operations analysis from the May 2018 TIA found that all 19 study intersections met the City's level of service (LOS) E standard during the 2040 Cumulative plus Project weekday peak hour conditions (identified on page 12 of the May 2018 TIA), which is the worst performing analysis scenario. All intersections during the weekday peak hours were anticipated to operate at LOS D or better, with the exception of two intersections. The Irwin Street/5th Avenue and Irwin Street/2nd Street intersections were projected to operate at LOS E during the weekday PM peak hour under 2020 baseline and 2040 Cumulative conditions with or without the proposed project.

As seen in Table 2, both of these intersections are not anticipated to experience an increase in traffic during the weekday peak hours; therefore, there would be no change in LOS or vehicular delay. All other study intersections are expected to continue operating at LOS D or better with the proposed project based on the limited increase in traffic volume shown in Table 2. The 19 study intersections would continue to meet the LOS E standard for all analysis scenarios with the proposed 106-bed project.

Parking Supply and Demand

As described previously, the proposed development would provide a total of 40 parking spaces. There would be 37 spaces in the garage. Three (3) ADA parking and short-term spaces would be provided at the courtyard area accessed off Lincoln Avenue. The parking supply and scheme is identical to May 2018 TIA.

The parking demand for the project was estimated using rates published in the ITE *Parking Generation* (4th Edition, 2010) for Nursing Home land use consistent with parking analysis conducted in the May 2018 TIA. The estimated average peak parking demand for the project, for both the typical weekday and weekend, are shown in Table 3.

Table 3. Parking Demand

		Weekday		Weekend	
Land Use	**Size**	**Rate[1]**	**Demand**	**Rate[2]**	**Demand**
Aegis Living Community	106 beds	0.35 per bed	37 vehicles	0.26 per bed	28 vehicles

1. Based on the peak weekday parking demand rate for the Nursing Home land uses in the ITE Parking Generation (4th Edition, 2010) consistent with the May 2018 TIA.
2. The weekend trip rate was based off the highest parking demand rate for Saturday or Sunday for the nursing home land use from the *Parking Generation* manual.

As shown in Table 3, the peak parking demand for the site is estimated to be 37 vehicles. The development would provide 40 total parking spaces; therefore, it is estimated that the parking supply should meet the proposed development's anticipated demand.

Summary of Findings

The review conducted of the proposed 106-bed Aegis facility shows there would be no new impacts compared to the May 2018 TIA. The key findings include:

- The additional 18 beds would generate 50 new daily trips, 3 AM peak hour trips and 4 PM peak hour trips compared to the May 2018 TIA proposal.
- Net increase in weekday peak hour traffic volumes at the study intersections would be 4 or less trips, equivalent to 0.2 percent or less of total entering volume for 2040 Cumulative Plus Project weekday peak hour conditions.
- It is anticipated that all study intersections would continue to meet City's LOS standards with current proposal.
- The proposed parking supply would accommodate the peak parking demand of the proposed project.

Attachment 1

transpogroup
WHAT TRANSPORTATION CAN BE.

MEMORANDUM

Date:	May 30, 2018	**TG:**	1.18065.00
To:	Walter Braun and Bryon Ziegler – Aegis Communities		
From:	Stefanie Herzstein, PE, PTOE and Kyle Stahley – Transpo Group		
cc:	Geoff Forner, Monahan Pacific Corporation		
Subject:	Áegis Living 1203 Lincoln (San Rafael) – Revised Transportation Impact Analysis		

This memorandum identifies potential transportation-related impacts associated with the proposed Áegis Living community in the City of San Rafael. First, the description of the project and study scope are presented. Then, the existing and future traffic volumes, vehicle trip generation and distribution, site access analysis, traffic operations, and non-motorized facilities are evaluated.

Project Description

The proposed project is located on the northwest corner of the Mission Avenue and Lincoln Avenue intersection in San Rafael. It would develop an Áegis Living community that would include 77 units and be licensed for up to 88 beds. The community would have 52 assisted living units (licensed to allow up to 58 beds) and 25 memory care units (licensed to allow up to 30 beds). The proposed project would be similar to other Áegis Living communities developed in the Northwest. The average age of residents would be 83 years old.

A below-grade parking garage would be provided with 37 parking spaces, which would be accessed via Mission Avenue on the western edge of the project site. An additional 3 parking stalls would be provided in the entry court on the north end of the site, with access provided by Lincoln Avenue. The total on-site parking would be 40 spaces. The preliminary ground-floor site plan illustrating the pedestrian entrances and vehicle access to the two parking areas is shown on Figure 1. More detailed drawings, showing the ground level as well as the parking garage layout are included in Attachment 1.

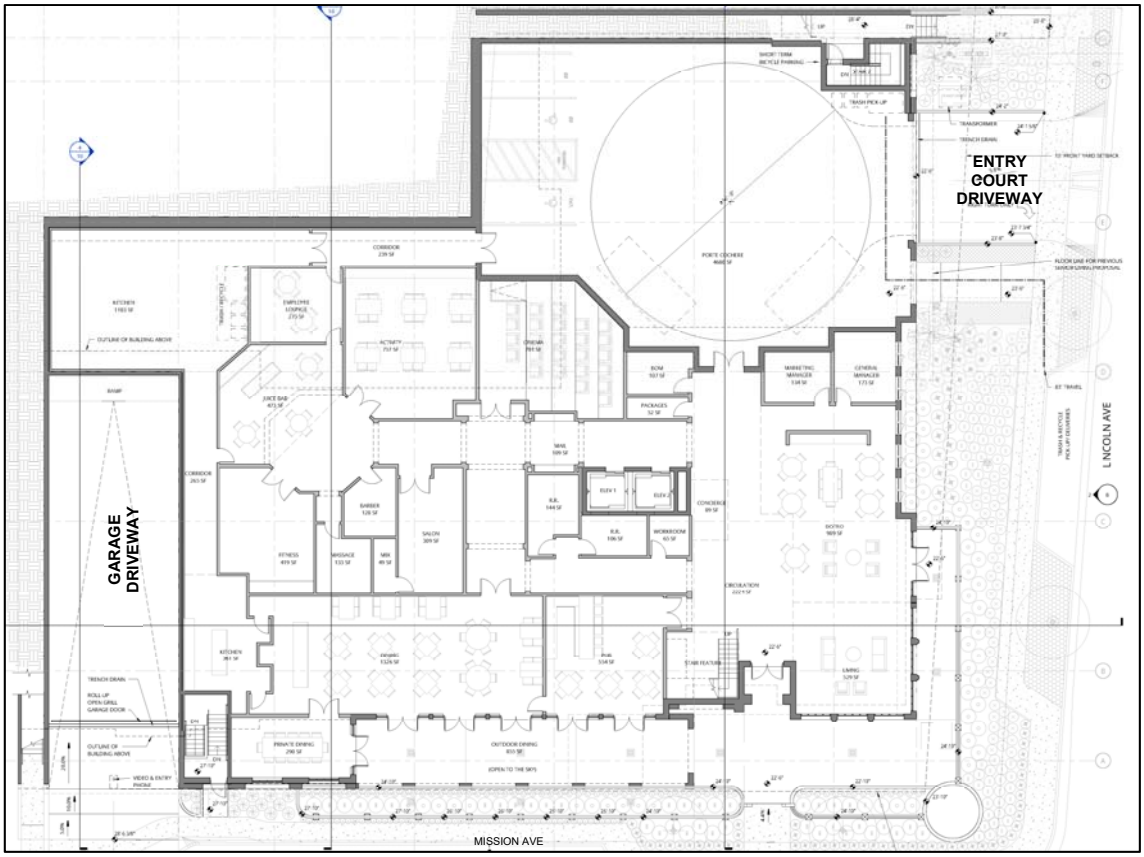


Figure 1: Preliminary Site Plan

Study Scope

The scope of this analysis is based on coordination with the City of San Rafael Department of Public Works (DPW) staff. Based on anticipated travel patterns for project-generated vehicle traffic, the following off-site study intersections were selected and are illustrated on Figure 2:

1. Lincoln Avenue/Mission Avenue
2. Tamalpais Avenue W/Mission Avenue
3. Tamalpais Avenue E/Mission Avenue
4. Hetherton Street/Mission Avenue
5. Irwin Street/Mission Avenue
6. Lincoln Avenue/5th Avenue
7. Hetherton Street/5th Avenue
8. Irwin Street/5th Avenue
9. Lincoln Avenue/4th Street
10. Hetherton Street/4th Street
11. Irwin Street/4th Street
12. Lindaro Street/3rd Street
13. Lincoln Avenue/3rd Street
14. Hetherton Street/3rd Street
15. Irwin Street/3rd Street
16. Lindaro Street/2nd Street
17. Lincoln Avenue/2nd Street
18. Hetherton Street/2nd Street
19. Irwin Street/2nd Street

This study focuses on the weekday AM and PM peak hours. Traffic volume forecasts were developed and traffic operations are evaluated for the following six scenarios:

- Existing
- Existing plus Project
- Baseline (2020)
- Baseline (2020) plus Project
- Cumulative (2040) Conditions
- Cumulative (2040) plus Project

Figure 2 Site Vicinity and Study Intersections

The analysis includes a review of the existing street network, transit service, and non-motorized facilities. Transportation characteristics of the proposed project are then discussed, including the trip generation, trip distribution and assignment. Future with-project conditions are evaluated by adding site-generated traffic to without-project volume scenarios. Impacts of the project were evaluated by comparing the without- and with-project conditions.

Existing Conditions

The following sections describe the existing street network, transit and non-motorized facilities in the vicinity of the project site.

Street Network

Key streets in the Downtown San Rafael study area are described below.

Lincoln Avenue is a four-lane, north-south roadway, allowing two-hour parking on both sides of the roadway outside of weekday PM peak hours. Throughout the rest of the day, the street has one travel lane in each direction. Sidewalks are provided along both sides of Lincoln Avenue within the study area.

Tamalpais Avenue West is a two-way street with one lane in each direction between 4th Street and Mission Avenue. The has metered parking along both sides of the roadway. Sidewalks are provided on the west side, opposite of the rail tracks.

Tamalpais Avenue East is a one-way northbound street between 4th Street and Mission Avenue with metered parking on the west side. Sidewalks are provided on the east side, opposite of the rail tracks.

Hetherton Street is a one-way, three-lane street with southbound traffic. No parking is allowed on either side of the roadway and sidewalks are provided on both sides of Hetherton Street.

Irwin Street is a three-lane one-way northbound road which terminates at Mission Avenue at the on-ramp to Redwood Highway. Parking is allowed on both sides of the roadway with parking on the east side prohibited during afternoon peak hours. Sidewalks are provided along both sides of Irwin Street.

Lindaro Street is a two-lane, north-south roadway with metered parking along the east side and sidewalks on both sides.

Mission Avenue is a two-lane, east-west roadway with parking on the south side. Sidewalks are provided on both sides along Mission Avenue in the vicinity of the project site.

5th Avenue is a two-lane, east-west roadway with metered parking along both sides. Sidewalks are provided on both sides of 5th Avenue.

4th Street is a two-lane, east-west roadway with metered parking along both sides. Sidewalks and a shared bicycle lane (marked with “sharrows”) are provided along in both directions.

3rd Street is a three-lane, one-way westbound roadway with no parking. Sidewalks are provided along 3rd Street on both sides.

2nd Street is a four-lane, one-way eastbound roadway with no parking. Sidewalks are provided along 2nd Street on both sides.

Based on a review of the DPW’s current *Capital Improvement Program* plan, there would be multiple CIP projects planned in the study area. The Hetherton Street / 3rd Street intersection has traffic signal upgrades planned. In addition, there are repaving and pedestrian accessibility projects planned in the Downtown area. As details of these improvements are not listed and would likely have minor operational impacts, the existing intersection channelization and traffic signal timing and phasing were maintained for future analysis conditions.

Transit

Transit service in the study area is provided by Marin Transit, Golden Gate Transit, Sonoma County Transit, and Sonoma-Marin Area Rail Transit (SMART). The proposed project is located within walking distance (0.3 miles or 6-minutes) to San Rafael Transit Center, SMART San Rafael Station, and San Rafael Greyhound Station. Transit routes serving stops within the vicinity of the project are summarized in Table 1.

Table 1. Transit Routes Summary

Route	Agency	Days of Operation	Hours of Operation		
			Weekdays	Weekends	Headway[1]
17 (San Rafael - Sausalito)	Marin Transit	7 days/week	6:30 a.m. – 11:30 p.m.	7:30 am – 11:30pm	30
22 (San Rafael – Marin City)	Marin Transit	7 days/week	6:00 a.m. – 11:00 p.m.	7:00 am – 11:00 pm.	30
23 (Canal – Fairfax)	Marin Transit	7 days/week	6:10 am – 9:15 pm	7:25 am – 9:30 pm	60
23X (Canal – Manor)	Marin Transit	Mon-Fri	6:25 am – 7::30 pm	-	60
27 (San Francisco – San Rafael/San Anselmo)	Golden Gate Transit	Mon-Fri	4:30 am – 7:35 pm	-	20
29 (Canal – Marin City)	Marin Transit	Mon-Fri	7:00 am – 7:00 pm	-	60
30 (San Francisco – San Rafael)	Golden Gate Transit	7 days/week	4:55 am – 1:55 am	5:55 am – 1:55 am	60
31 (Larkspur Ferry Terminal – San Rafael)	Golden Gate Transit	7 days/week	5:30 am – 8:05 pm	11:25 am – 8:20 pm	30
35 (Canal – Novato)	Marin Transit	7 days/week	24 hours	24 hours	30
36 (Canal – Marin City)	Marin Transit	7days/week	6:15 am – 8:10 pm	7:40 am -6:40 pm	30
38 (Sonoma Valley – San Rafael)	Sonoma County Transit	Mon-Fri	7:07 am, 6:26 pm	-	-
40 (San Rafael – Del Norte BART Station)	Golden Gate Transit	7 days/week	5:30 am -10:35 pm	7:20 am – 10:20 pm	30
40 X (San Rafael – Del Norte BART Station)	Golden Gate Transit	Mon-Fri	7:10 am- 9:10 am; 3:45 pm – 5:45 pm	-	30
44 (San Francisco – Lucas Valley)	Golden Gate Transit	Mon-Fri	7:10 am-8:00 am; 6:10 pm – 7:05 pm	-	60
49 (San Rafael – Novato)	Marin Transit	7 days/week	6:15 am – 8:15 pm	7:15 am – 10:55 p,	30
68 (San Rafael – Inverness)	Marin Transit	7 days/week	6:45 am – 10:40 pm	7:45 am – 11:55 pm	60
70 (San Francisco – Novato)	Golden Gate Transit	7 days/week	5:30 am – 1:00 am	5:30 am – 1:00 am	60
71 X (Sausalito – Novato)	Marin Transit	Mon-Fri	6:40 am – 6:45 pm	-	45
101 (San Francisco – Santa Rosa)	Golden Gate Transit	7 days/week	5:10 am – 1:15 am	5:10 am – 1:15 pm	30
122 (College of Marin Express)	Marin Transit	Mon-Fri	8:15 am – 2:55 pm	-	30
125 (San Rafael – Lagunitas)	Marin Transit	Mon-Fri	7:05 am – 5:10 pm	-	-
145 (San Rafael – Terra Linda HS)	Marin Transit	Mon-Fri	7:20 am; 2:43 pm, 3:30 pm	-	-
228 (San Rafael – Manor)	Marin Transit	Mon-Fri	6:30 am – 8:25 pm	7:30 am – 8:25 pm	60
233 (San Rafael – Santa Venetia)	Marin Transit	7 days/week	7:00 am – 7:00 pm	7:55 am – 5:55 pm	60
245 (San Rafael – Smith Ranch Rd)	Marin Transit	7 days/week	7:00 am – 6:55 pm	7:00 am – 6:55 pm	60
257 (San Rafael – Indian Valley)	Marin Transit	Mon – Fri	6:25 am -10:25 pm	-	60
SMART	Sonoma-Marin Area Rail Transit	7 days/week	5:26 am – 8:35 pm	11:20 am – 9:55 pm.	30

Source: Marin Transit, Golden Gate Transit, Sonoma County Transit, SMART, and Greyhound

1. Headways in minutes during weekday PM peak periods.

As shown in Table 1, over 20 transit routes from three agencies are available in the vicinity of the project. The San Rafael Transit Center is located approximately one-quarter mile from the project site, which is an approximate 5-minute or less walk. The SMART San Rafael Station is located four blocks away from the project site and would be less than a 5-minute walk.

Non-Motorized Facilities

The existing pedestrian and bicycle facilities near the project site are described below.

Pedestrian Facilities

The project is located in Downtown San Rafael, which has a gridded system with sidewalks along all streets. Marked pedestrian crossing and signals are located at each traffic signal in the study area and pedestrian phases are primarily on automatic recall. At some intersections within the study area, curb bulbouts have been constructed to provide shorter crossing distances for pedestrians.

Bicycle Facilities

The Marin County North-South Greenway bicycle trail is located two blocks from the proposed project and is accessed via Mission Avenue or Paloma Avenue. Within the Downtown street network, bicyclists are accommodated on some streets with sharrow lane markings including 4th Street.

Trip Generation

Transportation is primarily provided for Áegis Living residents via private shuttles operated by the facility, with most vehicle trips to the site generated by employees and visitors. Vehicle ownership by residents rarely occurs as the average age of residents is 83. Shift times for staff also start and end prior to the typical weekday commuter periods[1]. These characteristics result in overall low trip generation for the Áegis Living facilities compared to traditional assisted living facilities.

The trip generation for the proposed development was estimated based on data from two existing Áegis Living Communities that provide similar staffing and residential care characteristics as the proposed facility. In addition, the existing facilities are similar in size and were located in a suburban setting where the majority of trips are vehicle-oriented. Given the location of the proposed site in Downtown San Rafael, there may be fewer vehicle trips by staff and visitors who instead may use transit, walk or bike to the site. Thus, use of the trip generation data from the more suburban areas would provide a conservative analysis.

Data was collected at two Áegis Living Communities in Washington State (Bellevue and Kirkland) for three consecutive weekdays in March 2014. The total of 6 days of data was used to determine a weighted average trip generation rate for Áegis Living Communities. The two communities surveyed include a 105-bed facility in Kirkland, WA and an 86-bed facility in Bellevue, WA. Both communities provide a mix of assisted living and memory care units and on-site staff work the same shifts planned for the proposed San Rafael location. Table 2 summarizes the weekday PM peak hour trip generation study for the two existing sites.

[1] There are three staff shifts: 6 a.m. to 2 p.m., 2 p.m. to 10 p.m. and 10 p.m. to 6 a.m.

Table 2. Áegis Living Weekday PM Peak Hour Trip Generation Study

Community	Date	Size	Total Trips[1]	Inbound Trips	Outbound Trips
Áegis Lodge – Kirkland	Tues. 3/25/2014	105 beds	13	3	10
Áegis Lodge – Kirkland	Wed. 3/26/2014	105 beds	26	10	16
Áegis Lodge – Kirkland	Thurs. 3/27/2014	105 beds	25	8	17
Áegis of Bellevue	Tues. 3/25/2014	86 beds	16	3	13
Áegis of Bellevue	Wed. 3/26/2014	86 beds	25	8	17
Áegis of Bellevue	Thurs. 3/27/2014	86 beds	23	6	17
Weighted Average Rates			***0.22 per bed***	***30%***	***70%***

1. Total trips based on the highest one-hour of inbound and outbound driveway trips during the 4 to 6 p.m. peak hour of adjacent street traffic on each of the 6 days surveyed.

As shown in Table 2, the weighted average trip rate for the existing facilities is 0.22 trips per bed during the weekday PM peak hour. Of these trips, 30 percent were observed to be inbound and the remaining 70 percent were outbound.

The trip generation studies completed for existing Áegis Living communities did not include daily or weekday AM peak hour counts; therefore, the weekday PM peak hour trip generation rate was compared to the land use descriptions and trip generation rates for the Assisted Living and Nursing Home land uses from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017). This comparison shows the Áegis Living facilities have similar transportation characteristics to a nursing home given the staffed care for residents and the majority of residents not owning or operating private vehicles. The trip generation rate for the Nursing Home land use (#620) is 0.22 trips per bed during the weekday PM peak hour, consistent with the trip rate observed for the existing Áegis Living communities. Based on this, the ITE Nursing Home trip generation rate was used to calculate weekday daily and AM peak hour vehicle trip estimates for the proposed San Rafael Áegis Living community. As nursing homes require greater around-the-clock care compared to the proposed Áegis Living community, it is likely that the number of daily trips would be less for the proposed development than the nursing home trip generation rate would indicate.

A summary of the trip generation estimates for the weekday daily, AM and PM peak hour time periods is shown in Table 3. Detailed trip generation calculations are included in Attachment 2.

Table 3. Weekday Trip Generation Estimates

	Size[1]	Daily[2] *(In / Out)*	AM Peak Hour[3] *(In / Out)*	PM Peak Hour[4] *(In / Out)*
Áegis Living Community	88 beds	270 *(135 / 135)*	15 *(11 / 4)*	19 *(6 / 13)*

1. The project proposes to develop 77 residential living units which would be licensed to allow up to 88 beds.
2. Based on the average trip rate (3.06 trips per bed) for Nursing Home from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017).
3. Based on the average trip rate (0.17 trips per beds) for Nursing Home from ITE *Trip Generation Manual* (10th Edition, 2017).
4. Average trip rates (0.22 trips per bed) based on trip generation studies conducted at existing Áegis Living communities with similar sizes, types of care, and location characteristics as the proposed project.

As shown in Table 3, it is estimated the project would generate approximately 270 daily vehicle trips with 15 trips during the weekday AM peak hour and 19 trips during the weekday PM peak hour.

Project Trip Distribution and Assignment

The trip distribution for project trips was estimated using data from the US Census's *OntheMap* online tool and input from DPW staff. The *OntheMap* tool summarizes commute patterns using the census tracts where people live and work. It is anticipated that the majority of trips to and from the

site during the weekday AM and PM peak periods would be related to employees. The proposed project trip distribution throughout the City's grid network is shown on Figure 3.

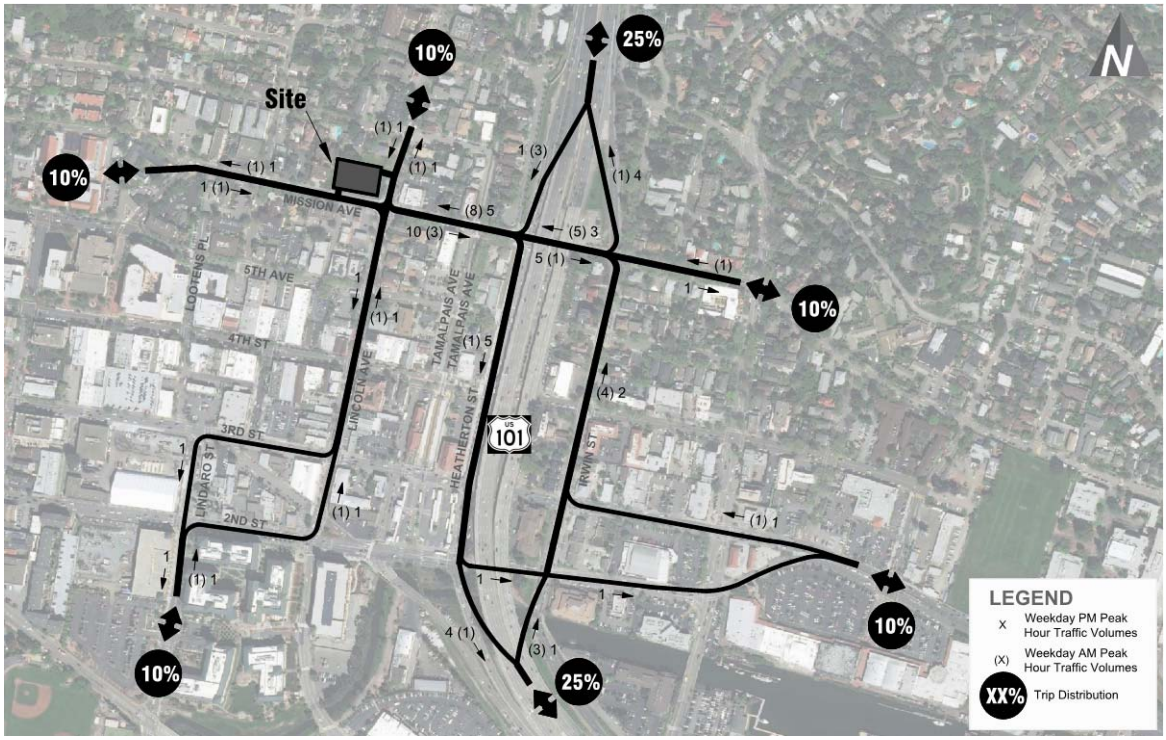


Figure 3 Project Trip Distribution and Assignment

The trip generation for the proposed project was assigned to the adjacent roadways and intersections during the weekday AM and PM peak hours as shown on Figure 3. As shown in the figure, it is anticipated that the Lincoln Avenue/Mission Avenue intersection nearest the site would have the highest number of trips, with 12 trips estimated during the weekday AM peak hour and 15 trips during the weekday PM peak hour. Increases at other intersections within the downtown are generally low ranging between 0 to 7 trips.

Vehicle Traffic Volumes

The following sections describe weekday AM and PM peak hour traffic volumes for the six analysis scenarios.

Existing Traffic Volumes

Existing (2017) traffic volumes were obtained from City of San Rafael staff. Traffic volumes from existing weekday AM and PM peak hour *Synchro* models were used as a basis for analysis. Existing traffic volumes at each of the study intersections are shown in Attachment 3.

Existing Plus Project Traffic Volumes

Project trip generation for the weekday AM and PM peak hour was distributed and assigned to the study intersections consistent with the travel patterns shown on Figure 3. These volumes were added to the existing traffic volumes to form the existing plus project traffic volumes. The weekday AM and PM peak hour traffic volumes at each study intersection are shown in Attachment 3.

Baseline Traffic Volumes

The existing traffic volumes were grown to account for general background growth and previously approved projects in the study vicinity. An annual background growth rate of 1.5 percent per year was applied to the existing traffic volumes to determine 2020 background traffic conditions. Traffic from the Seagate Multifamily residential development at 703 3rd Street, which is currently under review, but not permitted, was included as part of the baseline 2020 forecasts. The weekday AM and PM peak hour traffic volumes at each study intersection are shown in Attachment 3.

Baseline Plus Project Traffic Volumes

Project trip generation was distributed and assigned to the study intersections. These volumes were added to the baseline without-project traffic volumes to forecasts the baseline plus project conditions. The baseline plus project conditions reflects the anticipated forecast traffic volumes during the year of opening for the proposed project. The weekday AM and PM peak hour traffic volumes at each study intersection are shown in Attachment 3.

Cumulative Traffic Volumes

The Cumulative 2040 horizon year accounts for population and employment growth in the Downtown Area as anticipated with the General Plan. The City is currently updating the General Plan and the current published plan reflects 2020 conditions; therefore, the future traffic volumes are calculated using growth rates observed between the 2009 and 2040 travel demand model volumes provided by the City. An average annual growth rate of 0.2 percent per year was determined for the Downtown study area for both the weekday AM and PM peak hours. The 0.2 percent per year annual growth was applied to existing (2017) volumes to calculate future (2040) volumes. As the model volumes reflect the growth between 2009 and 2040, traffic from planned projects, such as the 703 3rd Street development, would be included in the model growth and were not added to the Cumulative traffic volume forecasts. The weekday AM and PM peak hour traffic volumes at each study intersection are shown in Attachment 3.

Cumulative Plus Project Traffic Volumes

The project trips were added to the traffic volumes developed for the Cumulative Conditions. The resulting traffic volumes reflect the Cumulative Plus Project Conditions. The Cumulative Plus Project weekday AM and PM peak hour traffic volumes at each study intersection are shown in Attachment 3.

Traffic Operations

The traffic operations were evaluated using *Synchro 9.1* software based on the 2010 *Highway Capacity Manual* (Transportation Research Board [TRB], 2011) method. At intersections where the 2010 HCM method is not valid due to channelization or signal timing, the HCM 2000 (TRB, 2000) method was used to evaluate traffic operations.

Existing signal phasing and timing, intersection channelization, and traffic volumes were based on the existing conditions *Synchro* models provided by the City for the weekday AM and PM peak hours. Signal phasing, signal timing, and intersection channelization from the existing *Synchro* model were maintained in the future conditions. This provides a conservative analysis as it is likely that traffic signal timing and phasing would be optimized regularly to provide the best operations with future increases in traffic. In the Downtown area, each of the study intersections has a level of service (LOS) E operational threshold. Detailed traffic operations worksheets are included in Attachment 4.

The existing and existing plus project traffic operations are shown in Table 4. The differences in delay and LOS between the two scenarios show the relative impact the project.

Table 4. Existing (2017) Weekday AM and PM Peak Hour LOS Summary

Intersection	2017 Existing Conditions		2017 Existing plus Project Conditions	
	LOS[1]	Delay[2]	LOS	Delay
Weekday AM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	17.5	B	17.8
2. Tamalpais Avenue W/Mission Avenue	B	13.5	B	13.6
3. Tamalpais Avenue E/Mission Avenue	C	30.9	C	32.7
4. Hetherton Street/Mission Avenue	C	26.8	C	27.1
5. Irwin Street/Mission Avenue	D	40.7	D	40.9
6. Lincoln Avenue/5th Avenue	B	15.5	B	15.5
7. Hetherton Street/5th Avenue	A	6.3	A	6.3
8. Irwin Street/5th Avenue	C	34.1	C	34.3
9. Lincoln Avenue/4th Street	B	17.5	B	17.5
10. Hetherton Street/4th Street	C	22.2	C	22.2
11. Irwin Street/4th Street	B	17.6	B	17.6
12. Lindaro Street/3rd Street	A	4.0	A	4.0
13. Lincoln Avenue/3rd Street	D	42.6	D	42.6
14. Hetherton Street/3rd Street	C	23.7	C	23.7
15. Irwin Street/3rd Street	B	16.2	B	16.3
16. Lindaro Street/2nd Street	C	24.1	C	24.1
17. Lincoln Avenue/2nd Street	C	27.6	C	27.6
18. Hetherton Street/2nd Street	C	24.4	C	24.5
19. Irwin Street/2nd Street	B	19.5	B	19.5
Weekday PM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	15.6	B	15.7
2. Tamalpais Avenue W/Mission Avenue	A	9.6	A	10.0
3. Tamalpais Avenue E/Mission Avenue	C	33.8	D	36.9
4. Hetherton Street/Mission Avenue	C	22.5	C	22.6
5. Irwin Street/Mission Avenue	D	47.1	D	47.2
6. Lincoln Avenue/5th Avenue	B	10.8	B	10.8
7. Hetherton Street/5th Avenue	A	9.2	A	9.2
8. Irwin Street/5th Avenue	E	56.9	E	57.3
9. Lincoln Avenue/4th Street	B	14.0	B	14.0
10. Hetherton Street/4th Street	B	10.6	B	10.6
11. Irwin Street/4th Street	C	21.6	C	21.8
12. Lindaro Street/3rd Street	A	5.2	A	5.2
13. Lincoln Avenue/3rd Street	C	25.7	C	25.7
14. Hetherton Street/3rd Street	C	29.4	C	29.4
15. Irwin Street/3rd Street	C	20.1	C	20.2
16. Lindaro Street/2nd Street	C	27.7	C	27.7
17. Lincoln Avenue/2nd Street	C	25.8	C	25.8
18. Hetherton Street/2nd Street	B	15.2	B	15.2
19. Irwin Street/2nd Street	D	46.9	D	46.9

1. Level of service, evaluated using HCM 2010 (TRB, 2011) methodology unless phasing or channelization limitations that do not allow for HCM 2010 analysis in which HCM 2000 (TRB, 2000) was used.
2. Average delay in seconds per vehicle.

As shown in Table 4, all intersections are anticipated to meet the City's LOS threshold during existing (2017) and existing plus project conditions and operate at LOS E or better during the AM and PM peak hours.

The baseline and baseline plus project traffic operations are shown in Table 5. The differences in delay and LOS between the two scenarios show the relative impact of the project for baseline conditions.

Table 5. Baseline (2020) Weekday AM and PM Peak Hour LOS Summary

Intersection	2020 Baseline Conditions		2020 Baseline plus Project Conditions	
	LOS[1]	Delay[2]	LOS	Delay
Weekday AM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	19	B	19.4
2. Tamalpais Avenue W/Mission Avenue	B	15.7	B	16
3. Tamalpais Avenue E/Mission Avenue	D	40.9	D	43.4
4. Hetherton Street/Mission Avenue	C	30.2	C	30.6
5. Irwin Street/Mission Avenue	D	45.3	D	45.5
6. Lincoln Avenue/5th Avenue	B	15.5	B	15.5
7. Hetherton Street/5th Avenue	A	6.5	A	6.5
8. Irwin Street/5th Avenue	D	37.1	D	37.3
9. Lincoln Avenue/4th Street	B	17.7	B	17.7
10. Hetherton Street/4th Street	C	22.2	C	22.2
11. Irwin Street/4th Street	B	19	B	19.1
12. Lindaro Street/3rd Street	A	4.4	A	4.4
13. Lincoln Avenue/3rd Street	D	46.2	D	46.2
14. Hetherton Street/3rd Street	C	25.5	C	25.5
15. Irwin Street/3rd Street	B	17.9	B	17.9
16. Lindaro Street/2nd Street	C	25	C	25
17. Lincoln Avenue/2nd Street	C	28.6	C	28.6
18. Hetherton Street/2nd Street	C	30.7	C	30.8
19. Irwin Street/2nd Street	C	21.7	C	21.7
Weekday PM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	16.6	B	16.8
2. Tamalpais Avenue W/Mission Avenue	B	11.0	B	11.3
3. Tamalpais Avenue E/Mission Avenue	D	45.3	D	47
4. Hetherton Street/Mission Avenue	C	26	C	26.1
5. Irwin Street/Mission Avenue	D	52.9	D	53.0
6. Lincoln Avenue/5th Avenue	B	10.8	B	10.7
7. Hetherton Street/5th Avenue	A	9.4	A	9.4
8. Irwin Street/5th Avenue	E	67.4	E	67.8
9. Lincoln Avenue/4th Street	B	13.7	B	13.8
10. Hetherton Street/4th Street	B	10.7	B	10.7
11. Irwin Street/4th Street	C	28.2	C	28.5
12. Lindaro Street/3rd Street	A	5.1	A	5.1
13. Lincoln Avenue/3rd Street	C	26.5	C	26.5
14. Hetherton Street/3rd Street	D	35.3	D	35.3
15. Irwin Street/3rd Street	C	25.3	C	25.5
16. Lindaro Street/2nd Street	C	28.6	C	28.7
17. Lincoln Avenue/2nd Street	C	26.7	C	26.7
18. Hetherton Street/2nd Street	B	18	B	18.1
19. Irwin Street/2nd Street	E	56.8	E	56.9

1. Level of service, evaluated using HCM 2010 (TRB, 2011) methodology unless phasing or channelization limitations that do not allow for HCM 2010 analysis in which HCM 2000 (TRB, 2000) was used.
2. Average delay in seconds per vehicle.

As shown in Table 5, all intersections are anticipated to meet the City's LOS threshold during baseline and baseline plus project conditions and operate at LOS E or better during the AM and PM peak hours.

The cumulative conditions and cumulative plus project traffic operations are shown in Table 6. The differences in delay and LOS between the two scenarios show the relative impact of the project on the cumulative conditions.

Table 6. Cumulative (2040) Weekday AM and PM Peak Hour LOS Summary

Intersection	2040 Cumulative Conditions		2040 Cumulative plus Project Conditions	
	LOS[1]	Delay[2]	LOS	Delay
Weekday AM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	19.8	C	20.3
2. Tamalpais Avenue W/Mission Avenue	B	16.2	B	16.5
3. Tamalpais Avenue E/Mission Avenue	D	43.5	D	46.1
4. Hetherton Street/Mission Avenue	C	31.0	C	31.4
5. Irwin Street/Mission Avenue	D	45.5	D	45.7
6. Lincoln Avenue/5th Avenue	B	15.6	B	15.6
7. Hetherton Street/5th Avenue	A	6.4	A	6.4
8. Irwin Street/5th Avenue	D	37.9	D	38
9. Lincoln Avenue/4th Street	B	17.8	B	17.8
10. Hetherton Street/4th Street	C	22.2	C	22.2
11. Irwin Street/4th Street	B	19.4	B	19.5
12. Lindaro Street/3rd Street	A	4.5	A	4.5
13. Lincoln Avenue/3rd Street	D	48.3	D	48.3
14. Hetherton Street/3rd Street	C	26.1	C	26.1
15. Irwin Street/3rd Street	B	18.3	B	18.4
16. Lindaro Street/2nd Street	C	25.1	C	25.1
17. Lincoln Avenue/2nd Street	C	28.8	C	28.8
18. Hetherton Street/2nd Street	C	32.3	C	32.5
19. Irwin Street/2nd Street	C	22.3	C	22.4
Weekday PM Peak Hour				
1. Lincoln Avenue/Mission Avenue	B	16.8	B	16.9
2. Tamalpais Avenue W/Mission Avenue	B	11.3	B	11.6
3. Tamalpais Avenue E/Mission Avenue	D	46.5	D	48.6
4. Hetherton Street/Mission Avenue	C	26.6	C	26.8
5. Irwin Street/Mission Avenue	D	53.5	D	53.6
6. Lincoln Avenue/5th Avenue	B	10.9	B	10.8
7. Hetherton Street/5th Avenue	A	9.4	A	9.5
8. Irwin Street/5th Avenue	E	70.1	E	70.5
9. Lincoln Avenue/4th Street	B	13.8	B	13.8
10. Hetherton Street/4th Street	B	10.9	B	10.9
11. Irwin Street/4th Street	C	30.7	C	31
12. Lindaro Street/3rd Street	A	5.1	A	5.1
13. Lincoln Avenue/3rd Street	C	26.7	C	26.7
14. Hetherton Street/3rd Street	D	35.2	D	35.2
15. Irwin Street/3rd Street	C	26.7	C	26.9
16. Lindaro Street/2nd Street	C	28.8	C	28.9
17. Lincoln Avenue/2nd Street	C	26.9	C	26.9
18. Hetherton Street/2nd Street	B	18.7	B	18.8
19. Irwin Street/2nd Street	E	59.1	E	59.2

1. Level of service, evaluated using HCM 2010 (TRB, 2011) methodology unless phasing or channelization limitations that do not allow for HCM 2010 analysis in which HCM 2000 (TRB, 2000) was used.
2. Average delay in seconds per vehicle.

As shown in Table 6, all intersections are anticipated to meet the City's level of service (LOS) threshold under cumulative (2040) conditions operate at LOS E or better both with and without the project during the AM and PM peak hours.

Site Access Analysis

The proposed project provides two site accesses, one from Mission Avenue and one from Lincoln Avenue. The Mission Avenue driveway provides access to 43 parking spaces provided in the below-ground garage. The driveway on Lincoln Avenue provides access to 3 parking spaces provided in the at-grade surface lot, which would provide ADA parking and loading/unloading to the building's entrance. A summary of the traffic operations at the site access locations is shown in Table 7.

Table 7. Baseline (2020) plus Project Site Access LOS Summary

	AM Peak Hour			PM Peak Hour		
Intersection	**LOS[1]**	**Delay[2]**	**WM[3]**	**LOS**	**Delay**	**WM**
A. Site Access/Mission Avenue	D	29.7	SB	E	38.7	SB
B. Lincoln Avenue/Site Access	D	29.5	EB	E	41.0	EB

1. Level of service, evaluated using HCM 2010 (TRB, 2011) methodology unless phasing or channelization limitations that do not allow for HCM 2010 analysis in which HCM 2000 (TRB, 2000) was used.
2. Average delay in seconds per vehicle.
3. Worst movement reported for unsignalized intersections.

As shown in Table 7, the two driveways are anticipated to operate at LOS D during the weekday AM peak hour and LOS E during the weekday PM peak hour under baseline plus project conditions. It is anticipated that the on-site queues would be minimal and accommodated with the garage design. The peak hour conditions shown above for the site access driveways reflect the highest amount of delay which would occur and during most periods, including the staff shift changes, would be less due the decreased amount of traffic on the adjacent streets. If drivers exiting the driveways during peak hours decide that the maneuver is too difficult to make there are alternate paths through the City's Downtown gridded transportation network they could use by making right-turns from the garage.

As mentioned previously, the site is served by transit and sidewalk and bicycle facilities within Downtown. The site is within short walking distance of the transit center and SMART Station. Sidewalks are provided adjacent to the project on Mission Avenue and Lincoln Avenue and pedestrian signals and marked crossings are present at the Mission Avenue/Lincoln Avenue intersection as well as at the other intersections in Downtown. The Marin County North-South Greenway bicycle trail is located two blocks from the project site and is accessed via Mission Avenue or Paloma Avenue. Given the access to alternative modes, trip generation may be lower than projected and driveway operations may be better than anticipated.

Parking

As described previously, the proposed development would provide a total of 40 parking spaces. There would be 37 single-sized spaces in the garage. An additional 3 parking spaces which would be used to provide ADA parking and short-term loading and unloading would be available via the courtyard area accessed off Lincoln Avenue.

The parking demand for the project was estimated using rates published in the ITE *Parking Generation* (4th Edition, 2010) for Nursing Home land use consistent with the trip generation. The estimated average peak parking demand for the project, for both the typical weekday and weekend, are shown in Table 8.

Table 8. Weekday and Weekend Parking Demand Estimates

		Weekday		Weekend	
Land Use	**Size**	**Rate[1]**	**Demand**	**Rate[2]**	**Demand**
Aegis Living Community	88 beds	0.35 per bed	31 vehicles	0.26 per bed	23 vehicles

1. Based on the peak weekday parking demand rate for the Nursing Home land uses in the ITE Parking Generation (4th Edition, 2010).
2. The weekend trip rate was based off the highest parking demand rate for Saturday or Sunday for the nursing home land use from the *Parking Generation* manual.

As shown in Table 8, the peak parking demand for the site is estimated to be 31 vehicles. The development would provide 40 total parking spaces; therefore, it is estimated that the parking supply should meet the proposed development's anticipated demand.

Summary and Conclusions

The proposed project would develop a 77-unit Áegis Living facility on a currently vacant lot on the northwest corner of the Mission Avenue and Lincoln Street intersection in San Rafael. The development would include 52 assisted living dwelling units with a maximum of 58 total beds and 25 memory care units with a maximum of 30 total beds. Áegis Living facilities provide staffed care for residents and the majority of residents do not own or operate private vehicles. Transportation is provided for residents via private shuttles operated by the facility, with vehicle trips to the site primarily generated by either employees or visitors.

Based on the proposed land uses, the project is anticipated to generate approximately 270 daily vehicle trips with 15 occurring during the weekday AM peak hour and 19 occurring during the weekday PM peak hour. Traffic operations are anticipated to meet the City's LOS E for the existing, baseline, and cumulative conditions in the weekday AM and PM peak hours.

The project is anticipated to have a peak parking demand of 31 vehicles. The parking demand is anticipated to be fully accommodated on-site with the proposed 40 parking spaces.

No significant traffic or parking impacts are anticipated as a result of the proposed project.

Attachment 1:
Preliminary Site Plan and Parking Layout

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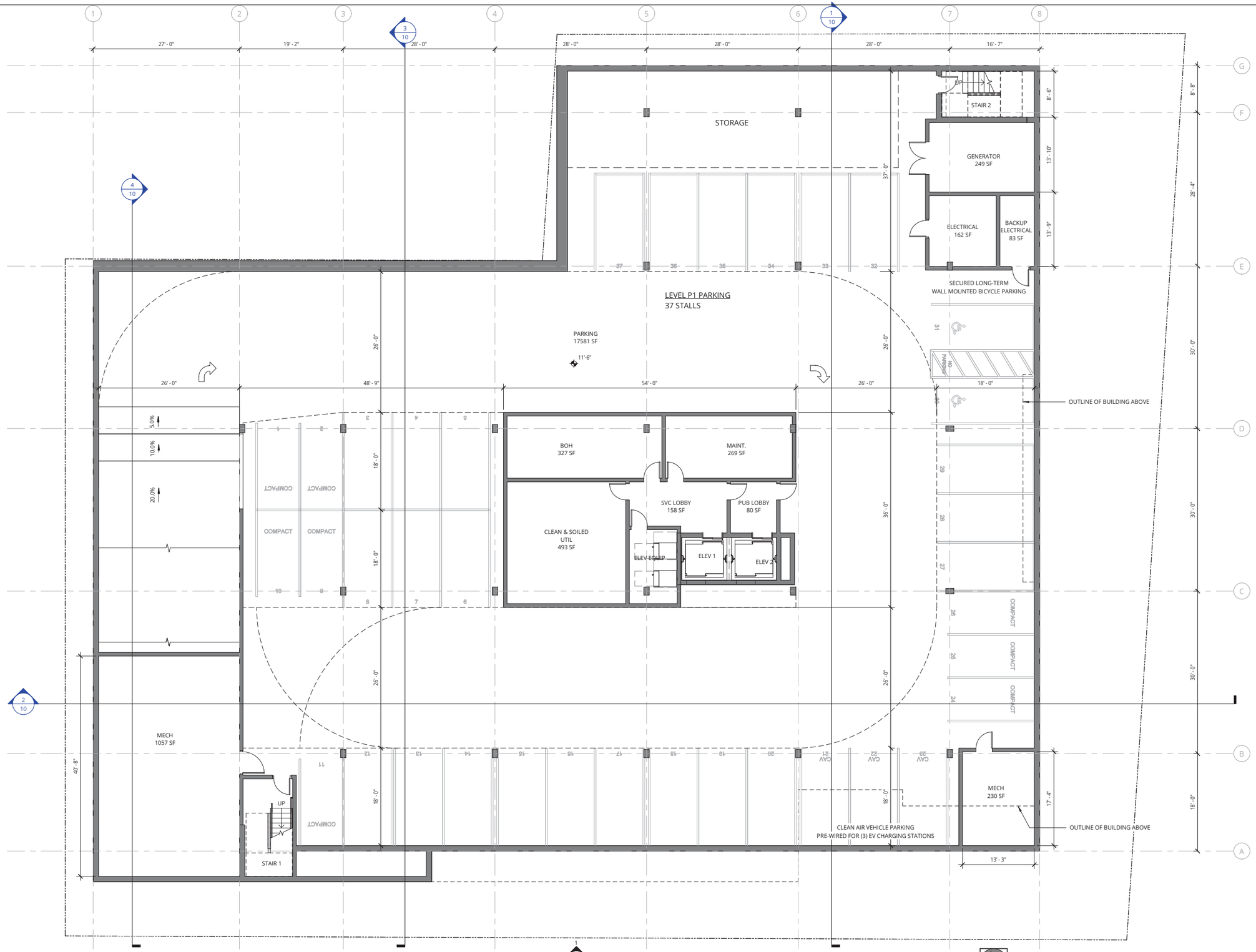

1 LEVEL P1 KEY PLAN

1/8" = 1'-0"

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38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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LOWER GARAGE PLAN

RESUBMITTAL SET

DATE	PROJECT NUMBER
05.16.2018	174170

SHEET NUMBER

2

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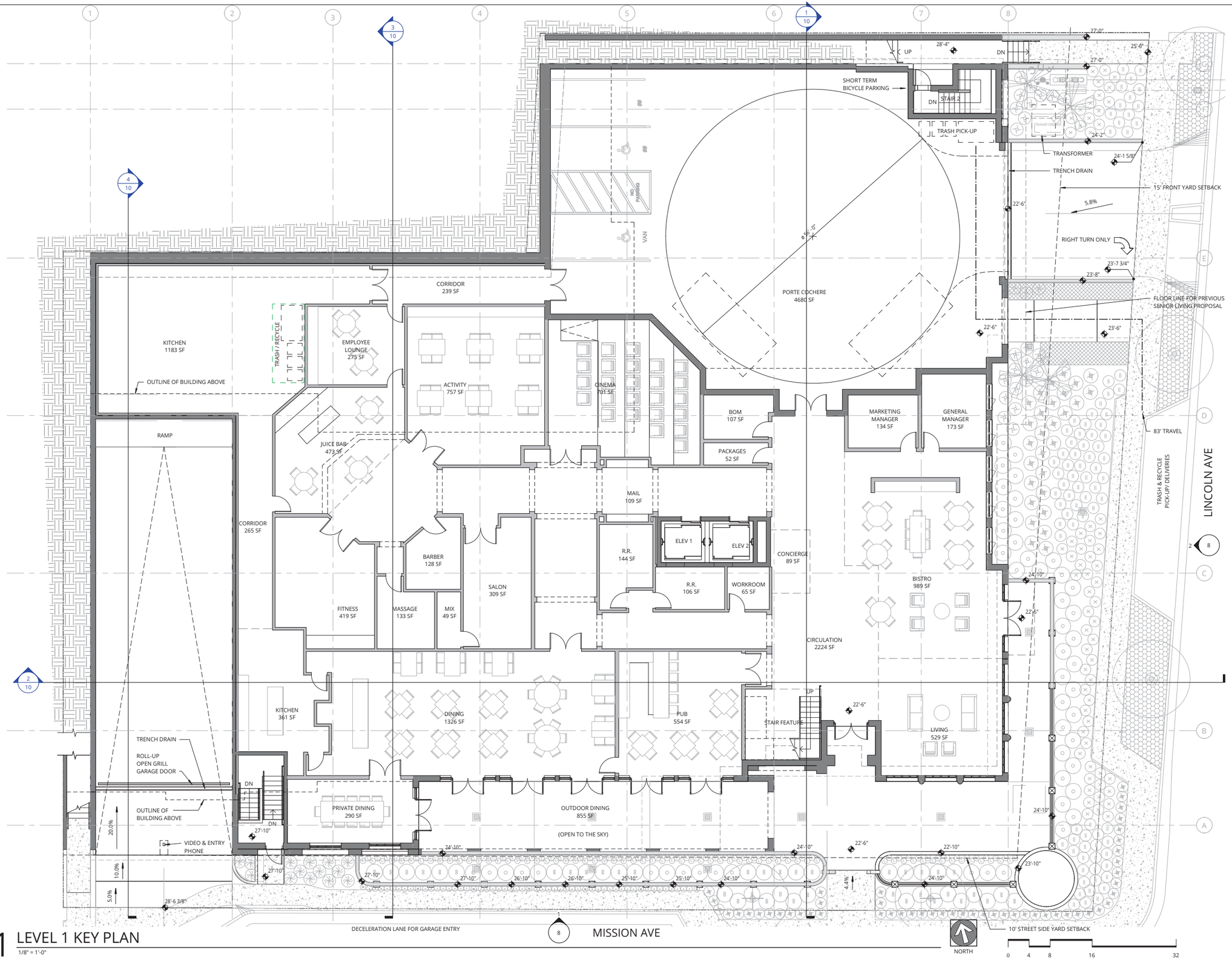

1 LEVEL 1 KEY PLAN

1/8" = 1'-0"

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PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
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MAIN LEVEL PLAN

RESUBMITTAL SET

DATE	PROJECT NUMBER
05.16.2018	174170

SHEET NUMBER

3

Attachment 2:
Detailed Trip Generation Calculations

Aegis Living Communities Weekday PM Peak Hour Trip Generation Study - Summary

Community	Date	Size	PM Peak Hour Driveway Trips[1]		
			Total	Inbound	Outbound
Áegis Lodge – Kirkland	Tues. 3/25/2014	105 beds	13	3	10
Áegis Lodge – Kirkland	Wed. 3/26/2014	105 beds	26	10	16
Áegis Lodge – Kirkland	Thurs. 3/27/2014	105 beds	25	8	17
Áegis of Bellevue	Tues. 3/25/2014	86 beds	16	3	13
Áegis of Bellevue	Wed. 3/26/2014	86 beds	25	8	17
Áegis of Bellevue	Thurs. 3/27/2014	86 beds	23	6	17
Weighted Average Rate			***0.22 per bed***	***30%***	***70%***

1. Inbound and outbound trips counted at all entrance and exit points to the Áegis Living Community during the highest one hour during the weekday PM peak period (4 - 6 p.m.) of adjacent street traffic.

Áegis of Bellevue
148 102nd Ave SE, Bellevue, WA 98004
86-bed Assisted Living and Memory Care Community

Tuesday, March 25, 2014

	In	Out	Total	Rolling One Hour
11:00	5	2	7	
11:15	2	1	3	
11:30	3	1	4	
11:45	0	4	4	18
12:00	4	1	5	16
12:15	4	5	9	22
12:30	1	3	4	22
12:45	3	1	4	22
13:00	3	3	6	23
13:15	1	3	4	18
13:30	2	1	3	17
13:45	1	0	1	14
14:00	8	1	9	17
14:15	4	1	5	18
14:30	4	3	7	22
14:45	1	6	7	28
15:00	2	2	4	23
15:15	3	2	5	23
15:30	4	6	10	26
15:45	3	2	5	24
16:00	1	2	3	23
16:15	1	1	2	20
16:30	1	5	6	16
16:45	1	3	4	15
17:00	0	4	4	**16**
17:15	0	2	2	16
17:30	0	1	1	11
17:45	0	0	0	7

Wednesday, March 26, 2014

	In	Out	Total	Rolling One Hour
11:00	4	0	4	
11:15	1	1	2	
11:30	0	2	2	
11:45	1	4	5	13
12:00	2	5	7	16
12:15	5	6	11	25
12:30	5	2	7	30
12:45	4	2	6	31
13:00	0	1	1	25
13:15	2	1	3	17
13:30	1	1	2	12
13:45	4	2	6	12
14:00	1	1	2	13
14:15	0	1	1	11
14:30	3	0	3	12
14:45	2	1	3	9
15:00	4	2	6	13
15:15	2	5	7	19
15:30	1	6	7	23
15:45	1	3	4	24
16:00	1	3	4	22
16:15	3	2	5	20
16:30	5	1	6	19
16:45	1	1	2	17
17:00	1	7	8	21
17:15	1	8	9	**25**
17:30	2	2	4	23
17:45	0	4	4	25

Thursday, March 27, 2014

	In	Out	Total	Rolling One Hour
11:00	3	0	3	
11:15	5	3	8	
11:30	4	4	8	
11:45	3	2	5	24
12:00	6	8	14	35
12:15	2	2	4	31
12:30	2	1	3	26
12:45	1	2	3	24
13:00	2	3	5	15
13:15	2	1	3	14
13:30	8	6	14	25
13:45	0	5	5	27
14:00	4	0	4	26
14:15	3	1	4	27
14:30	6	6	12	25
14:45	6	1	7	27
15:00	6	3	9	32
15:15	5	4	9	37
15:30	5	5	10	35
15:45	3	3	6	34
16:00	1	6	7	32
16:15	4	6	10	33
16:30	0	1	1	24
16:45	1	4	5	**23**
17:00	2	2	4	20
17:15	1	0	1	11
17:30	1	3	4	14
17:45	1	2	3	12

Áegis Lodge - Kirkland
12629 116th Ave NE, Kirkland, WA 98034
105-bed Assisted Living and Memory Care Community

Tuesday, March 25, 2014

	In	Out	Total	Rolling One Hour
11:00	3	4	7	
11:15	5	2	7	
11:30	3	4	7	
11:45	4	5	9	30
12:00	3	2	5	28
12:15	3	3	6	27
12:30	3	2	5	25
12:45	0	2	2	18
13:00	5	2	7	20
13:15	6	5	11	25
13:30	1	3	4	24
13:45	6	2	8	30
14:00	4	6	10	33
14:15	9	6	15	37
14:30	4	8	12	45
14:45	3	2	5	42
15:00	3	3	6	38
15:15	5	6	11	34
15:30	2	6	8	30
15:45	2	4	6	31
16:00	1	4	5	30
16:15	0	2	2	21
16:30	0	4	4	17
16:45	2	0	2	**13**
17:00	0	1	1	9
17:15	1	1	2	9
17:30	0	0	0	5
17:45	0	0	0	3

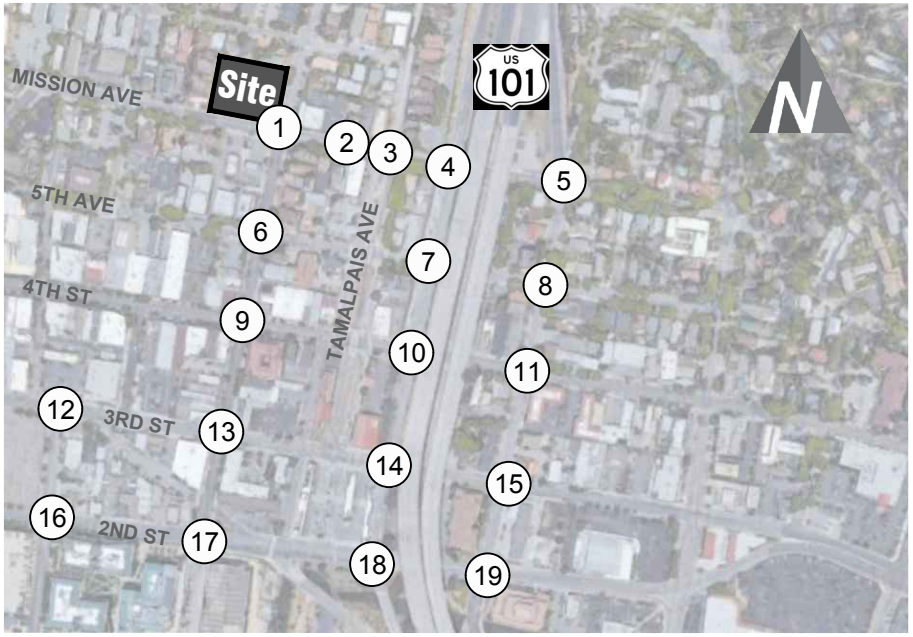
Wednesday, March 26, 2014

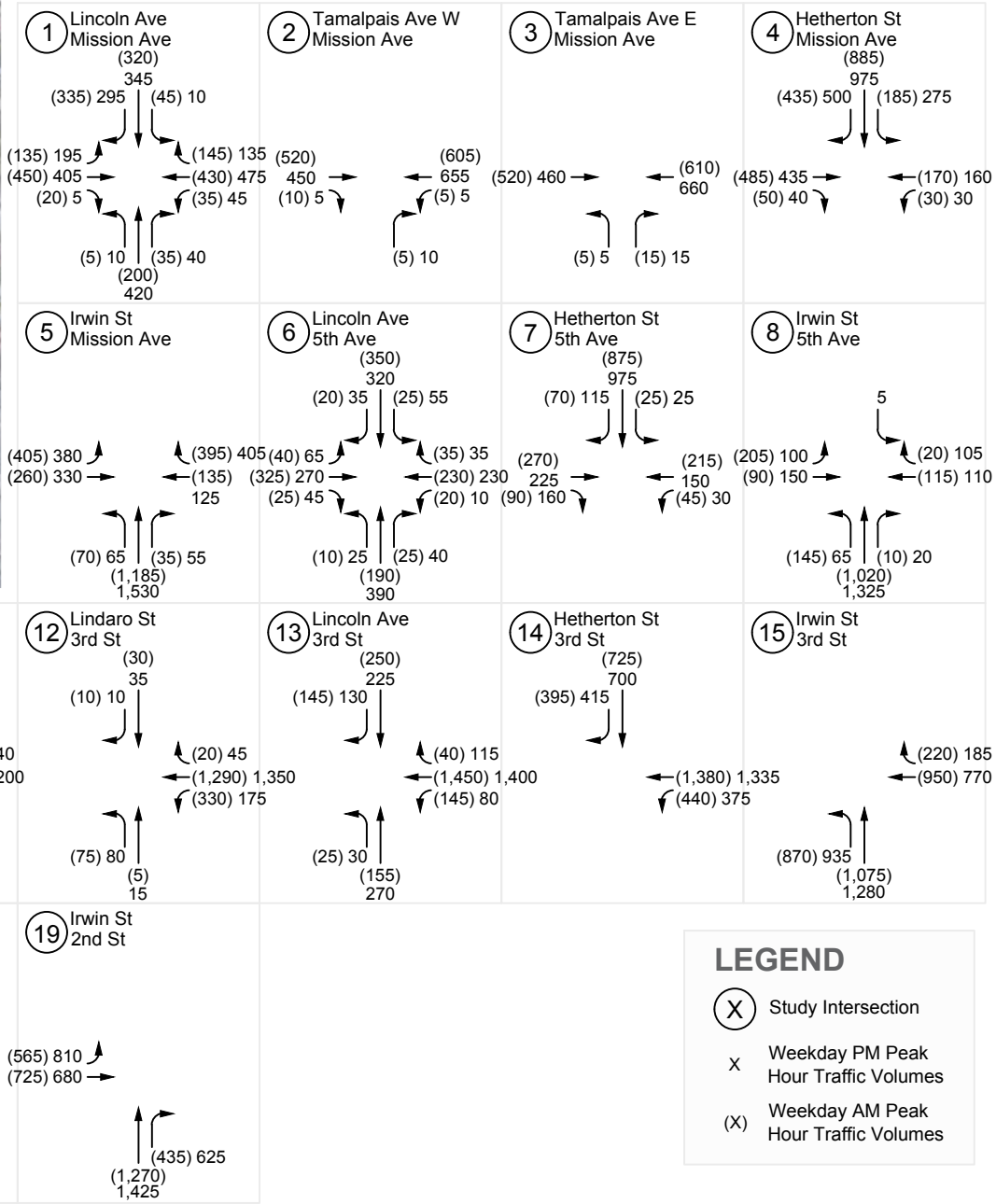
	In	Out	Total	Rolling One Hour
11:00	3	3	6	
11:15	5	3	8	
11:30	2	4	6	
11:45	1	5	6	26
12:00	4	1	5	25
12:15	4	2	6	23
12:30	3	1	4	21
12:45	2	3	5	20
13:00	2	0	2	17
13:15	1	2	3	14
13:30	1	3	4	14
13:45	5	5	10	19
14:00	6	4	10	27
14:15	5	9	14	38
14:30	3	5	8	42
14:45	3	6	9	41
15:00	2	6	8	39
15:15	4	4	8	33
15:30	1	2	3	28
15:45	1	2	3	22
16:00	5	4	9	23
16:15	1	3	4	19
16:30	2	5	7	23
16:45	2	4	6	**26**
17:00	0	1	1	18
17:15	1	0	1	15
17:30	1	2	3	11
17:45	0	3	3	8

Thursday, March 27, 2014

	In	Out	Total	Rolling One Hour
11:00	4	4	8	
11:15	2	1	3	
11:30	5	4	9	
11:45	3	0	3	23
12:00	5	3	8	23
12:15	4	2	6	26
12:30	1	4	5	22
12:45	4	4	8	27
13:00	2	5	7	26
13:15	4	4	8	28
13:30	2	2	4	27
13:45	6	2	8	27
14:00	5	5	10	30
14:15	0	8	8	30
14:30	6	5	11	37
14:45	3	2	5	34
15:00	2	4	6	30
15:15	2	3	5	27
15:30	7	3	10	26
15:45	1	3	4	25
16:00	4	5	9	28
16:15	2	6	8	31
16:30	0	4	4	25
16:45	2	2	4	**25**
17:00	0	3	3	19
17:15	5	2	7	18
17:30	1	1	2	16
17:45	0	0	0	12

Attachment 3:
Study Intersection Traffic Volumes





LEGEND

(X) Study Intersection

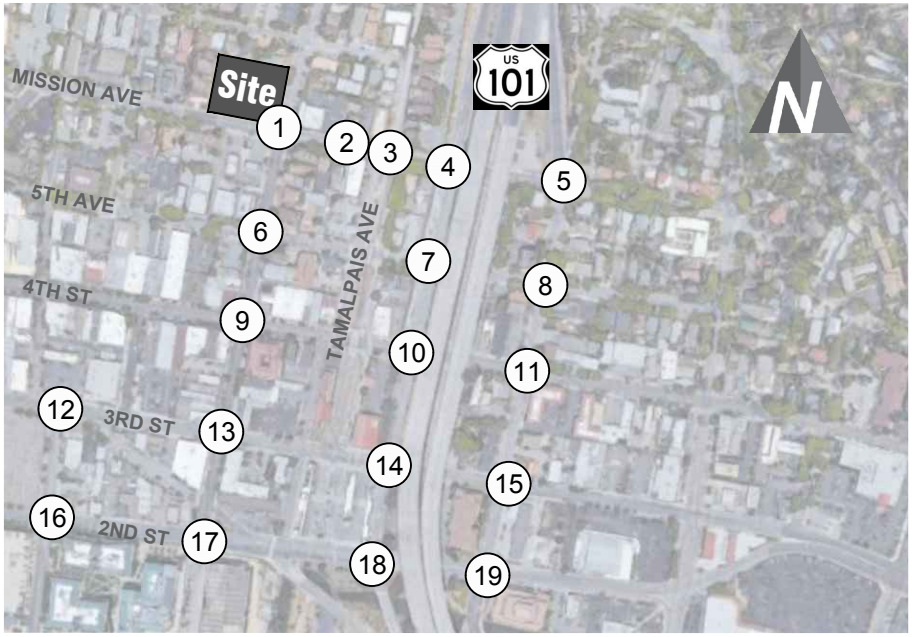
X Weekday PM Peak Hour Traffic Volumes

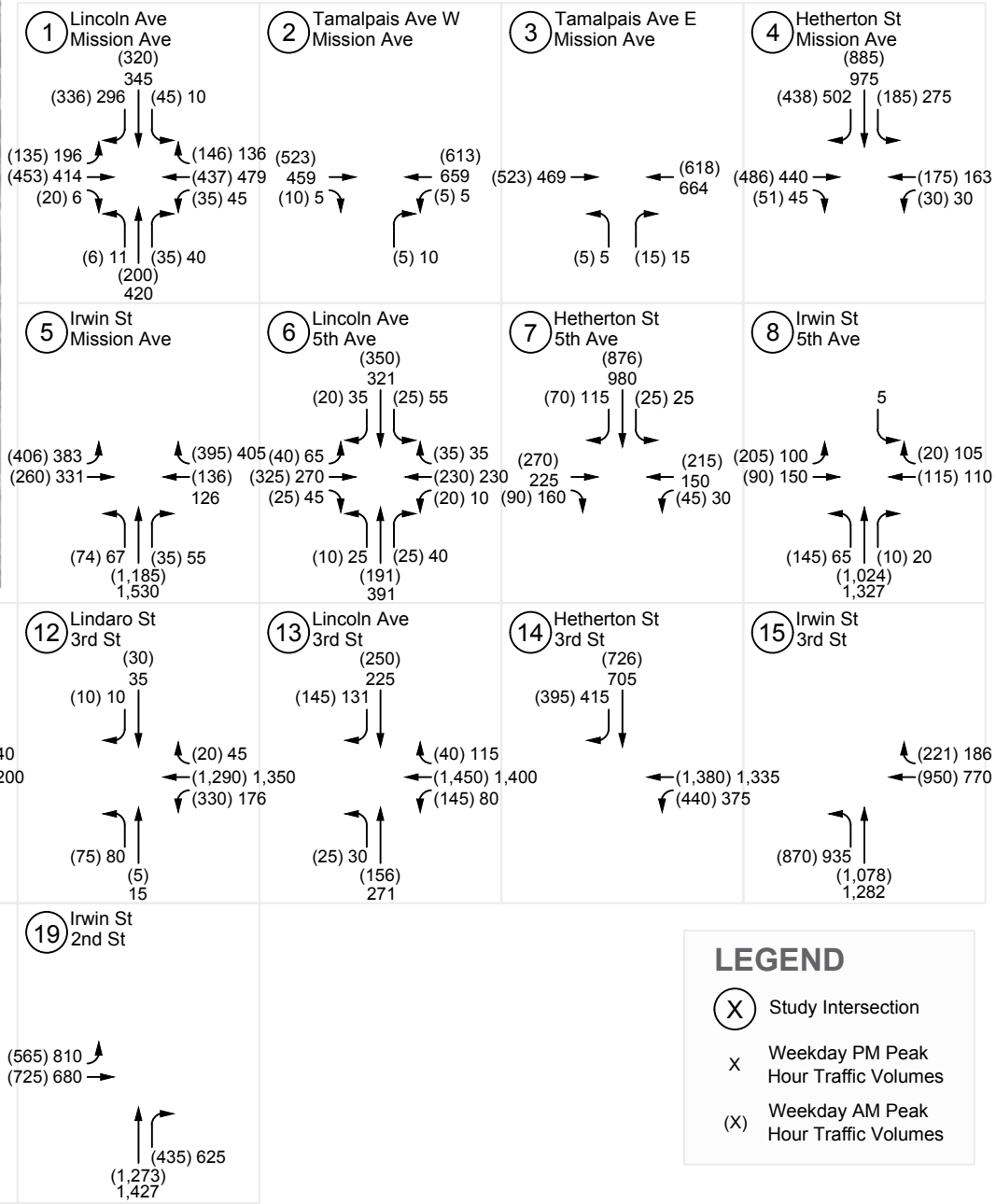
(X) Weekday AM Peak Hour Traffic Volumes

Existing (2017) Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup





LEGEND

(X) Study Intersection

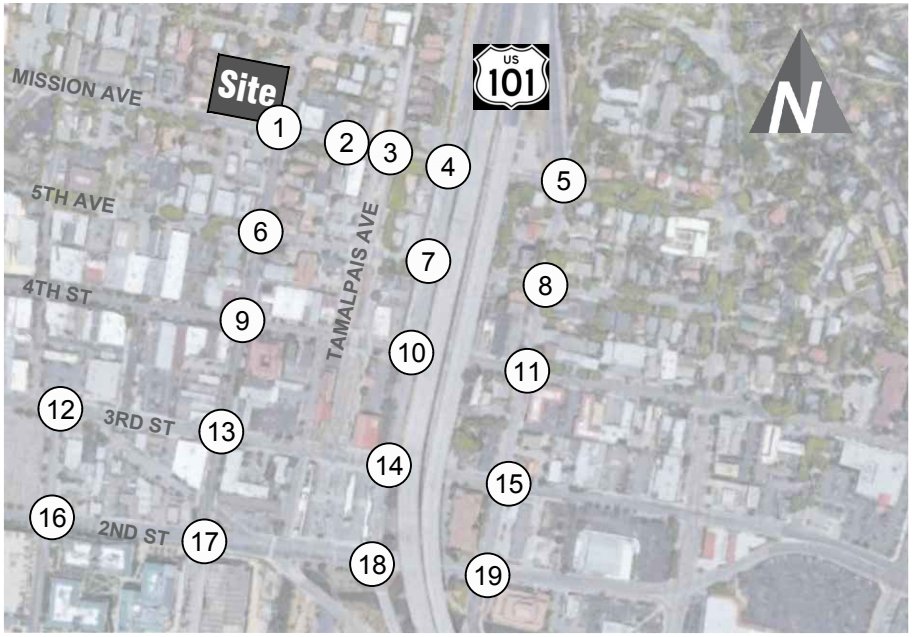
X Weekday PM Peak Hour Traffic Volumes

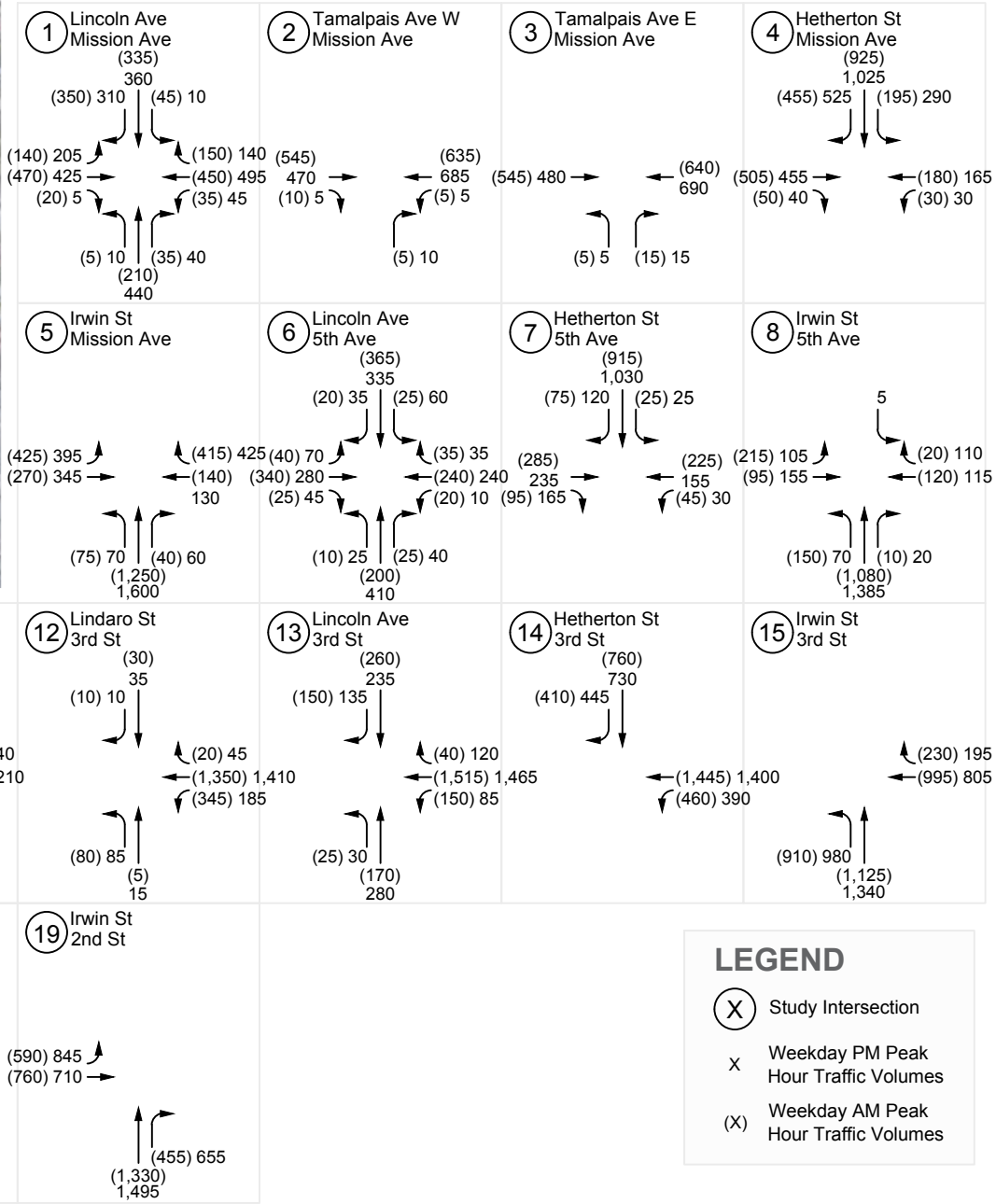
(X) Weekday AM Peak Hour Traffic Volumes

Existing (2017) Plus Project Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup





LEGEND

(X) Study Intersection

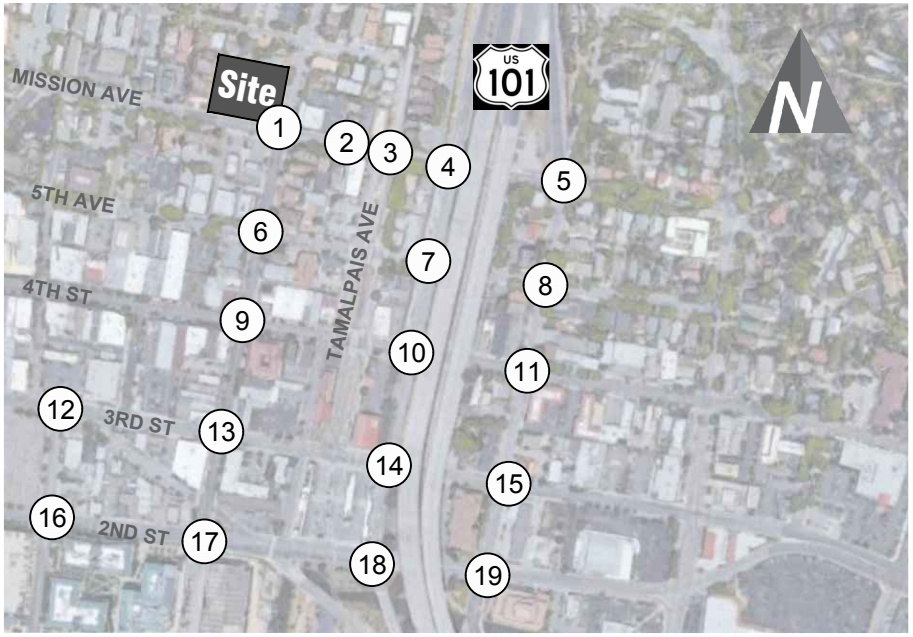
X Weekday PM Peak Hour Traffic Volumes

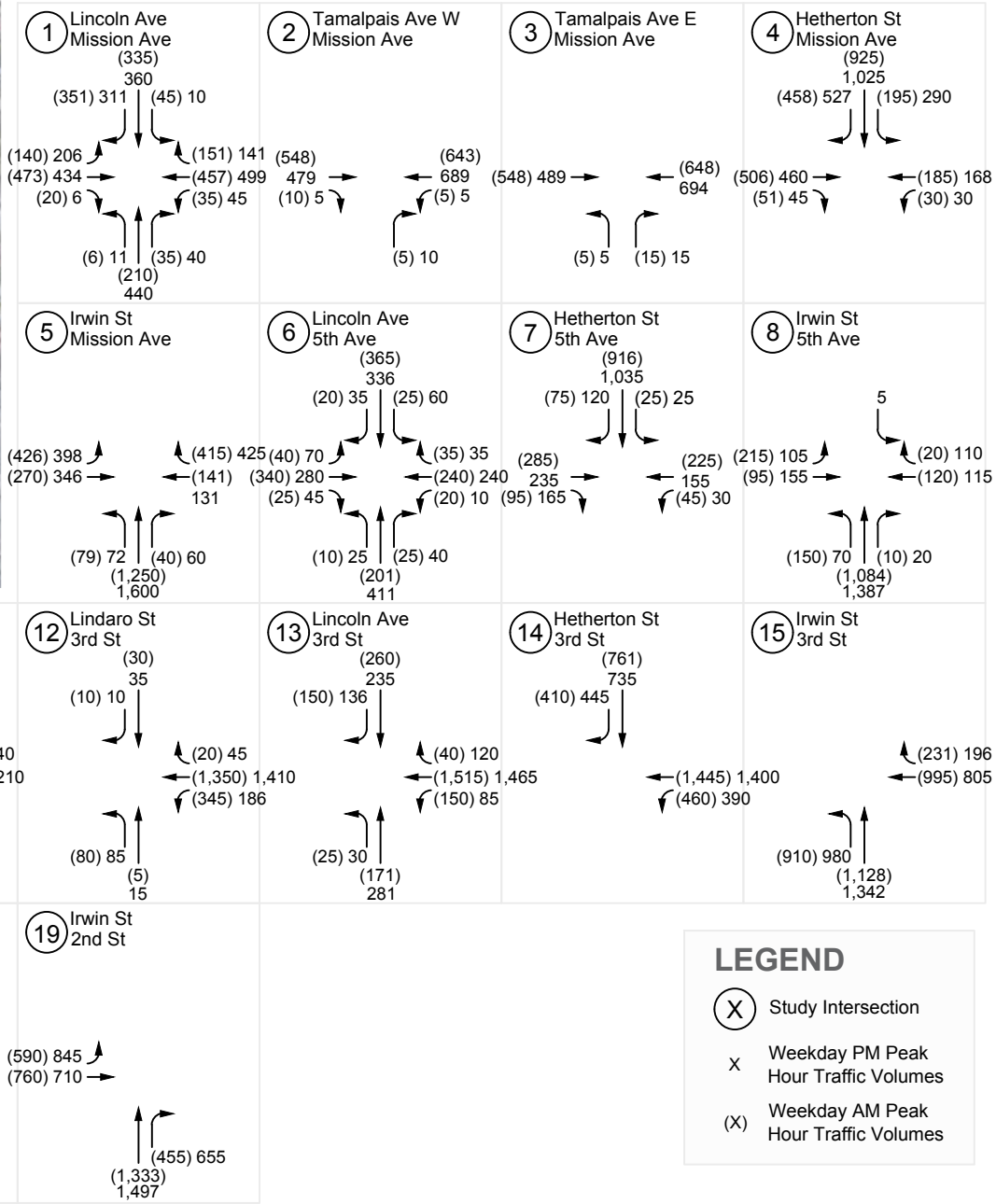
(X) Weekday AM Peak Hour Traffic Volumes

Baseline (2020) Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup





LEGEND

(X) Study Intersection

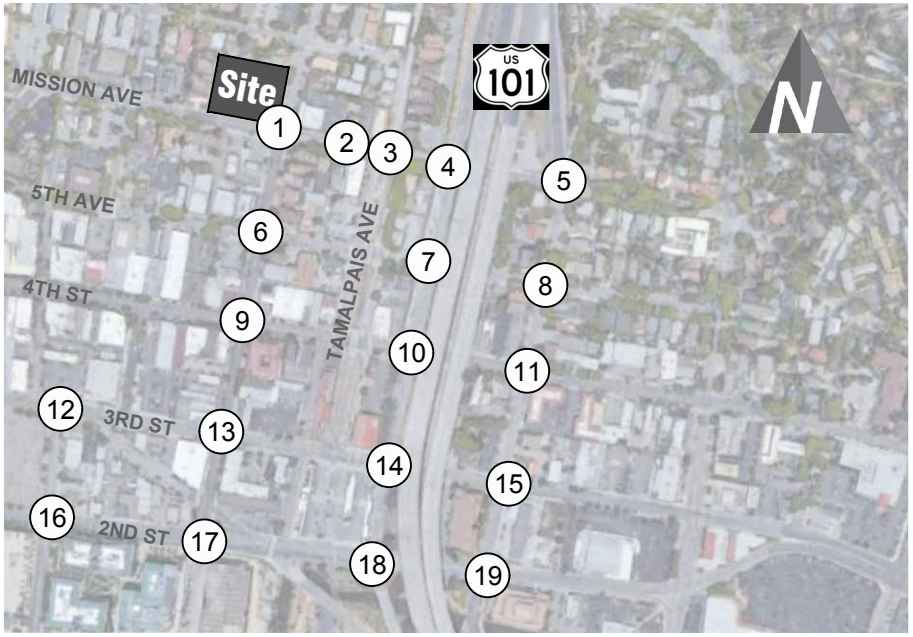
X Weekday PM Peak Hour Traffic Volumes

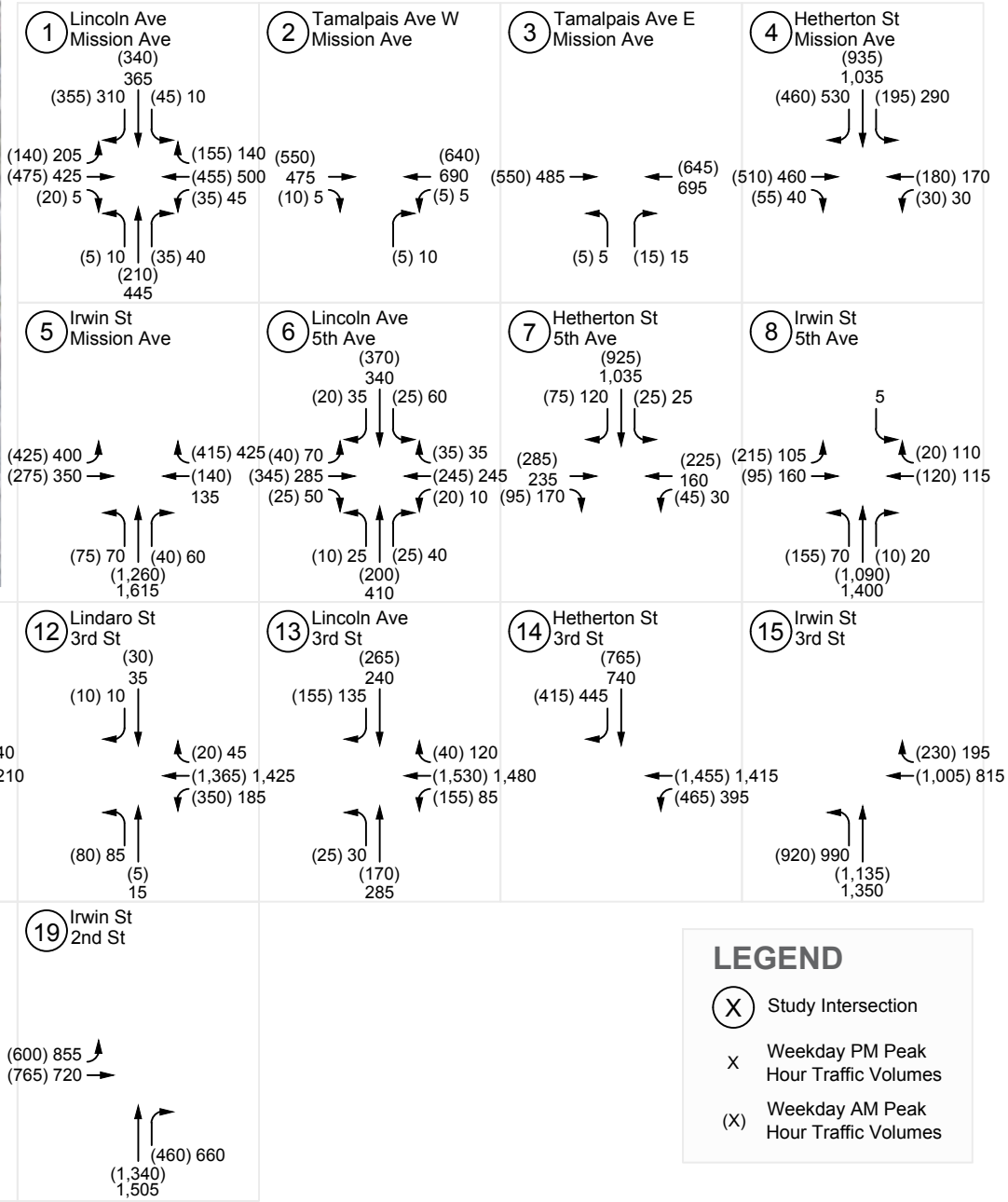
(X) Weekday AM Peak Hour Traffic Volumes

Baseline (2020) Plus Project Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup





LEGEND

(X) Study Intersection

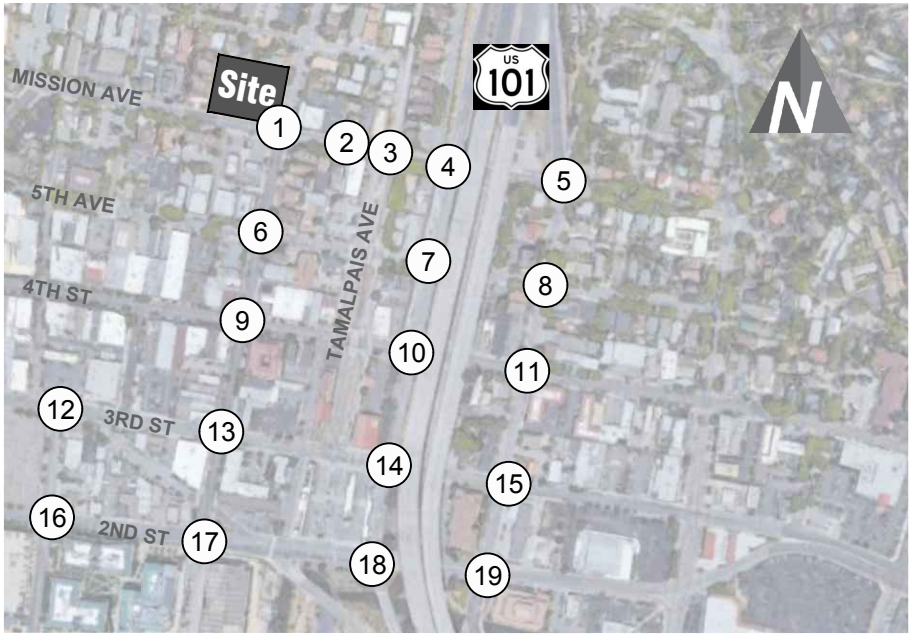
X Weekday PM Peak Hour Traffic Volumes

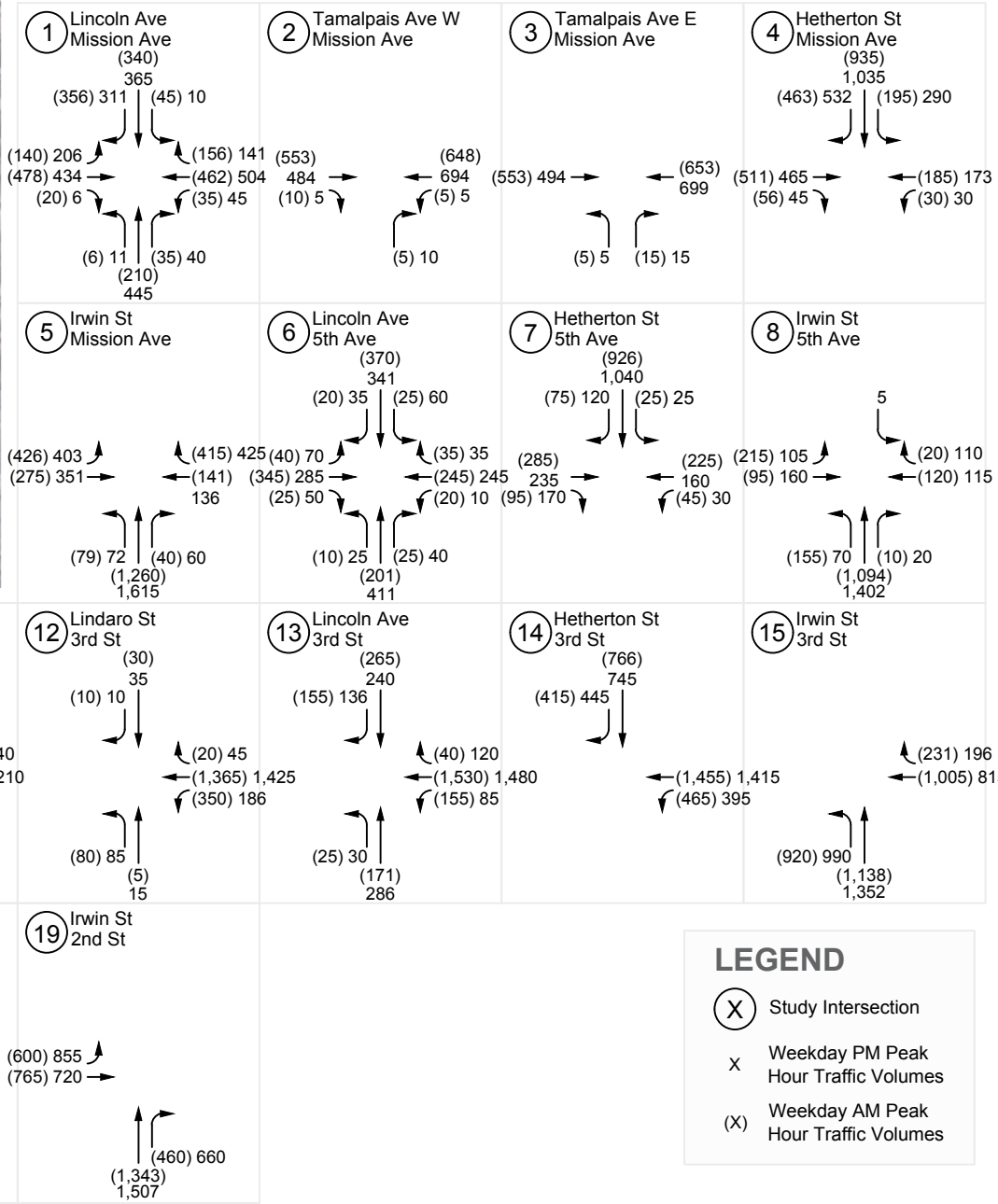
(X) Weekday AM Peak Hour Traffic Volumes

Cumulative (2040) Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup





LEGEND

(X) Study Intersection

X Weekday PM Peak Hour Traffic Volumes

(X) Weekday AM Peak Hour Traffic Volumes

Cumulative (2040) Plus Project Weekday Peak Hour Traffic Volumes

Aegis San Rafael

transpogroup

Attachment 4:
Traffic Operations Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	450	20	35	430	145	5	200	35	45	320	335
Future Volume (veh/h)	135	450	20	35	430	145	5	200	35	45	320	335
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1676	1710	1800	1664	1728	1800	1769	1711
Adj Flow Rate, veh/h	141	469	21	36	448	151	5	208	36	47	333	349
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	395	899	40	424	512	173	52	439	75	104	558	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1606	72	867	1186	400	9	1219	208	139	1549	1372
Grp Volume(v), veh/h	141	0	490	36	0	599	249	0	0	380	0	349
Grp Sat Flow(s),veh/h/ln	1597	0	1678	867	0	1586	1435	0	0	1688	0	1372
Q Serve(g_s), s	3.4	0.0	13.6	0.8	0.0	15.9	0.0	0.0	0.0	4.9	0.0	16.4
Cycle Q Clear(g_c), s	3.4	0.0	13.6	4.8	0.0	15.9	5.5	0.0	0.0	13.6	0.0	16.4
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	395	0	940	424	0	685	566	0	0	661	0	494
V/C Ratio(X)	0.36	0.00	0.52	0.08	0.00	0.88	0.44	0.00	0.00	0.57	0.00	0.71
Avail Cap(c_a), veh/h	403	0	940	424	0	685	566	0	0	661	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.00	0.84	0.95	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	0.0	10.3	3.8	0.0	4.0	7.6	0.0	0.0	19.6	0.0	20.6
Incr Delay (d2), s/veh	0.2	0.0	2.1	0.3	0.0	12.7	2.4	0.0	0.0	3.6	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	6.8	0.2	0.0	8.2	2.5	0.0	0.0	7.1	0.0	7.3
LnGrp Delay(d),s/veh	11.9	0.0	12.3	4.1	0.0	16.7	9.9	0.0	0.0	23.2	0.0	28.9
LnGrp LOS	B		B	A		B	A			C		C
Approach Vol, veh/h		631			635			249			729	
Approach Delay, s/veh		12.2			16.0			9.9			25.9	
Approach LOS		B			B			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.6	35.4		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		15.6		7.5	5.4	17.9		18.4
Green Ext Time (p_c), s		12.4		8.6	0.0	8.0		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	520	10	5	605	0	5
Future Volume (vph)	520	10	5	605	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1598			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1598			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	542	10	5	630	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	551	0	0	635	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	32.1			57.1	11.7	
Effective Green, g (s)	32.1			48.3	11.7	
Actuated g/C Ratio	0.43			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	683			1032	213	
v/s Ratio Prot	c0.34				c0.00	
v/s Ratio Perm				0.40		
v/c Ratio	0.81			0.62	0.00	
Uniform Delay, d1	18.7			7.9	26.7	
Progression Factor	0.81			0.54	1.00	
Incremental Delay, d2	8.6			0.2	0.0	
Delay (s)	23.7			4.5	26.7	
Level of Service	C			A	C	
Approach Delay (s)	23.7			4.5	26.7	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	520	0	0	610	5	15
Future Volume (vph)	520	0	0	610	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	578	0	0	678	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	578	0	0	678	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.8			32.1	16.2	
Effective Green, g (s)	43.8			32.1	16.2	
Actuated g/C Ratio	0.58			0.43	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	927			679	304	
v/s Ratio Prot	c0.36			c0.43	c0.01	
v/s Ratio Perm						
v/c Ratio	0.62			1.00	0.03	
Uniform Delay, d1	10.2			21.4	23.2	
Progression Factor	0.27			1.23	1.26	
Incremental Delay, d2	0.8			27.9	0.0	
Delay (s)	3.6			54.3	29.1	
Level of Service	A			D	C	
Approach Delay (s)	3.6			54.3	29.1	
Approach LOS	A			D	C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	485	50	30	170	0	0	0	0	185	885	435
Future Volume (vph)	0	485	50	30	170	0	0	0	0	185	885	435
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2801			1791						2911	1244
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2801			1610						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	505	52	31	177	0	0	0	0	193	922	453
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	547	0	0	208	0	0	0	0	0	1115	453
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1269			729						1358	464
v/s Ratio Prot		c0.20									c0.38	
v/s Ratio Perm					0.13							c0.36
v/c Ratio		0.43			0.29						0.82	0.98
Uniform Delay, d1		13.9			12.9						17.3	23.2
Progression Factor		0.61			1.73						1.00	1.00
Incremental Delay, d2		0.9			0.9						5.7	36.3
Delay (s)		9.4			23.2						23.0	59.5
Level of Service		A			C						C	E
Approach Delay (s)		9.4			23.2			0.0			33.5	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	405	260	0	0	135	395	70	1185	35	0	0	0
Future Volume (veh/h)	405	260	0	0	135	395	70	1185	35	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	431	277	0	0	144	420	74	1261	37			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	531	888	0	0	518	417	89	1590	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	196	3508	1659			
Grp Volume(v), veh/h	431	277	0	0	144	420	715	620	37			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1895	1810	1659			
Q Serve(g_s), s	7.4	9.7	0.0	0.0	4.4	20.0	27.5	24.7	1.4			
Cycle Q Clear(g_c), s	7.4	9.7	0.0	0.0	4.4	20.0	27.5	24.7	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.10		1.00			
Lane Grp Cap(c), veh/h	531	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.81	0.31	0.00	0.00	0.28	1.01	0.83	0.76	0.05			
Avail Cap(c_a), veh/h	531	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.1	21.0	0.0	0.0	21.8	27.5	29.1	27.9	18.0			
Incr Delay (d2), s/veh	12.7	0.9	0.0	0.0	1.3	46.1	9.2	6.4	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.7	5.3	0.0	0.0	2.6	13.9	16.6	13.8	0.7			
LnGrp Delay(d),s/veh	41.8	21.9	0.0	0.0	23.1	73.7	38.3	34.3	18.2			
LnGrp LOS	D	C			C	F	D	C	B			
Approach Vol, veh/h		708			564			1372				
Approach Delay, s/veh		34.0			60.8			36.0				
Approach LOS		C			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		29.5		11.7			9.4	22.0
Green Ext Time (p_c), s		2.1		3.2			0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	325	25	20	230	35	10	190	25	25	350	20
Future Volume (veh/h)	40	325	25	20	230	35	10	190	25	25	350	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	353	27	22	250	38	11	207	27	27	380	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	221	467	36	178	419	64	63	651	82	75	702	39
Arrive On Green	0.33	0.33	0.32	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	880	1423	109	764	1277	194	21	1100	139	41	1187	66
Grp Volume(v), veh/h	43	0	380	22	0	288	245	0	0	429	0	0
Grp Sat Flow(s),veh/h/ln	880	0	1532	764	0	1471	1261	0	0	1295	0	0
Q Serve(g_s), s	3.3	0.0	16.6	2.1	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.3	0.0	16.6	18.7	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	221	0	503	178	0	483	796	0	0	817	0	0
V/C Ratio(X)	0.19	0.00	0.76	0.12	0.00	0.60	0.31	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	295	0	633	243	0	608	796	0	0	817	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.96	0.00	0.00	0.73	0.00	0.00
Uniform Delay (d), s/veh	29.0	0.0	22.5	38.9	0.0	28.7	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.0	0.3	0.0	1.1	1.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.5	0.5	0.0	5.9	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.5	0.0	26.5	39.2	0.0	29.8	1.0	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		423			310			245			429	
Approach Delay, s/veh		26.8			30.5			1.0			1.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.6		47.4		27.6		47.4
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		19.3		2.0		20.7		2.0
Green Ext Time (p_c), s		2.5		3.2		2.3		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	270	90	45	215	0	0	0	0	25	875	70
Future Volume (vph)	0	270	90	45	215	0	0	0	0	25	875	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1795						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	290	97	48	231	0	0	0	0	27	941	75
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	371	0	0	279	0	0	0	0	0	968	75
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.21									c0.24	
v/s Ratio Perm					0.17							0.07
v/c Ratio		0.47			0.38						0.51	0.18
Uniform Delay, d1		14.0			13.3						14.0	15.9
Progression Factor		0.31			1.31						0.17	0.25
Incremental Delay, d2		1.9			1.2						0.6	0.6
Delay (s)		6.1			18.5						3.0	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.1			18.5			0.0			3.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	90	0	0	115	20	145	1020	10	0	0	0
Future Volume (veh/h)	205	90	0	0	115	20	145	1020	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1591	1620	1620	1544	1620			
Adj Flow Rate, veh/h	225	99	0	0	126	22	159	1121	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	376	524	0	0	390	68	188	1398	14			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1107	1573	0	0	1171	204	321	2384	24			
Grp Volume(v), veh/h	225	99	0	0	0	148	673	0	618			
Grp Sat Flow(s),veh/h/ln	1107	1573	0	0	0	1375	1359	0	1370			
Q Serve(g_s), s	15.0	4.3	0.0	0.0	0.0	6.0	35.8	0.0	32.0			
Cycle Q Clear(g_c), s	21.0	4.3	0.0	0.0	0.0	6.0	35.8	0.0	32.0			
Prop In Lane	1.00		0.00	0.00		0.15	0.24		0.02			
Lane Grp Cap(c), veh/h	376	524	0	0	0	458	797	0	804			
V/C Ratio(X)	0.60	0.19	0.00	0.00	0.00	0.32	0.85	0.00	0.77			
Avail Cap(c_a), veh/h	376	524	0	0	0	458	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.6	24.2	0.0	0.0	0.0	18.7	27.0	0.0	25.4			
Incr Delay (d2), s/veh	6.9	0.8	0.0	0.0	0.0	1.9	10.7	0.0	7.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	2.0	0.0	0.0	0.0	2.5	15.8	0.0	13.7			
LnGrp Delay(d),s/veh	41.4	25.0	0.0	0.0	0.0	20.6	37.6	0.0	32.4			
LnGrp LOS	D	C				C	D		C			
Approach Vol, veh/h		324			148			1291				
Approach Delay, s/veh		36.4			20.6			35.1				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		37.8		23.0				8.0
Green Ext Time (p_c), s		2.6		0.1				2.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	180	35	55	240	25	10	160	55	45	300	45
Future Volume (veh/h)	40	180	35	55	240	25	10	160	55	45	300	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.96		0.90	0.97		0.93	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1571	1555	1620	1579	1555
Adj Flow Rate, veh/h	44	198	38	60	264	27	11	176	60	49	330	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	200	371	71	258	408	42	64	588	193	115	649	92
Arrive On Green	0.31	0.31	0.30	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	896	1212	233	951	1335	137	22	958	314	100	1056	150
Grp Volume(v), veh/h	44	0	236	60	0	291	247	0	0	428	0	0
Grp Sat Flow(s),veh/h/ln	896	0	1445	951	0	1472	1295	0	0	1306	0	0
Q Serve(g_s), s	3.4	0.0	10.2	4.6	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.7	0.0	10.2	14.7	0.0	14.3	12.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.09	0.04		0.24	0.11		0.11
Lane Grp Cap(c), veh/h	200	0	442	258	0	450	845	0	0	856	0	0
V/C Ratio(X)	0.22	0.00	0.53	0.23	0.00	0.65	0.29	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	284	0	578	347	0	589	845	0	0	856	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.83	0.00	0.00	0.79	0.00	0.00
Uniform Delay (d), s/veh	30.9	0.0	21.6	34.9	0.0	29.8	16.3	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.4	0.0	1.5	0.7	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.2	1.2	0.0	6.0	4.5	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.4	0.0	22.6	35.4	0.0	31.3	17.0	0.0	0.0	1.7	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		280			351			247			428	
Approach Delay, s/veh		23.9			32.0			17.0			1.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.9		49.1		25.9		49.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		19.7		14.0		16.7		2.0
Green Ext Time (p_c), s		2.1		3.2		2.4		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	130	85	110	240	0	0	0	0	70	810	115
Future Volume (vph)	0	130	85	110	240	0	0	0	0	70	810	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1647	1450						4228	1264
Flt Permitted		1.00	1.00	0.66	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1142	1450						4228	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	140	91	118	258	0	0	0	0	75	871	124
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	140	47	118	258	0	0	0	0	0	946	124
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	517	657						1950	465
v/s Ratio Prot		0.09			c0.18							
v/s Ratio Perm			0.04	0.10							0.22	0.10
v/c Ratio		0.19	0.09	0.23	0.39						0.49	0.27
Uniform Delay, d1		12.3	11.7	12.5	13.6						14.0	16.6
Progression Factor		1.85	3.79	0.68	0.75						1.65	1.52
Incremental Delay, d2		0.6	0.3	0.8	1.4						0.8	1.2
Delay (s)		23.3	44.6	9.4	11.7						23.8	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		31.6			11.0			0.0			24.1	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	175	0	0	260	130	90	995	50	0	0	0
Future Volume (vph)	30	175	0	0	260	130	90	995	50	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.95		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1326		1226	2456				
Flt Permitted	0.34	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	518	1588			1326		1226	2456				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	184	0	0	274	137	95	1047	53	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	5	0	0	0	0
Lane Group Flow (vph)	32	184	0	0	387	0	95	1095	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	207	635			530		637	1277				
v/s Ratio Prot		0.12			c0.29			c0.45				
v/s Ratio Perm	0.06						0.08					
v/c Ratio	0.15	0.29			0.73		0.15	0.86				
Uniform Delay, d1	14.4	15.3			19.1		9.4	15.6				
Progression Factor	1.71	1.66			0.88		0.77	0.63				
Incremental Delay, d2	1.5	1.1			7.3		0.3	4.5				
Delay (s)	26.2	26.5			24.0		7.5	14.3				
Level of Service	C	C			C		A	B				
Approach Delay (s)		26.4			24.0			13.7			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	330	1290	20	75	5	0	0	30	10
Future Volume (vph)	0	0	0	330	1290	20	75	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3770			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3770			1042			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	367	1433	22	83	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	367	1453	0	0	89	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2362			305			406	
v/s Ratio Prot					c0.39						0.03	
v/s Ratio Perm				0.30				c0.09				
v/c Ratio				0.48	0.62			0.29			0.09	
Uniform Delay, d1				7.5	8.5			20.5			19.2	
Progression Factor				0.26	0.27			0.65			1.00	
Incremental Delay, d2				1.3	0.7			2.3			0.4	
Delay (s)				3.3	3.1			15.7			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.1			15.7			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	145	1450	40	25	155	0	0	250	145
Future Volume (veh/h)	0	0	0	145	1450	40	25	155	0	0	250	145
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				163	1629	45	28	174	0	0	281	163
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				215	2290	65	55	218	0	0	264	153
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				374	3994	113	0	630	0	0	762	442
Grp Volume(v), veh/h				670	561	605	202	0	0	0	0	444
Grp Sat Flow(s),veh/h/ln				1539	1417	1526	630	0	0	0	0	1203
Q Serve(g_s), s				30.9	27.7	27.8	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				30.9	27.7	27.8	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.24		0.07	0.14		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	875	273	0	0	0	0	417
V/C Ratio(X)				0.76	0.69	0.69	0.74	0.00	0.00	0.00	0.00	1.06
Avail Cap(c_a), veh/h				882	813	875	273	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				25.5	24.2	24.2	26.3	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				6.1	4.8	4.5	16.4	0.0	0.0	0.0	0.0	62.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.7	12.0	12.8	5.1	0.0	0.0	0.0	0.0	15.9
LnGrp Delay(d),s/veh				31.6	29.0	28.7	42.7	0.0	0.0	0.0	0.0	95.5
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1837			202			444	
Approach Delay, s/veh					29.9			42.7			95.5	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		32.9		28.0
Green Ext Time (p_c), s				0.0		5.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	440	1380	0	0	0	0	0	725	395
Future Volume (vph)	0	0	0	440	1380	0	0	0	0	0	725	395
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	458	1438	0	0	0	0	0	755	411
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	275	1621	0	0	0	0	0	755	398
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.22	0.40							c0.38
v/c Ratio				0.42	0.76						0.47	0.99
Uniform Delay, d1				10.5	13.7						17.2	22.8
Progression Factor				0.69	0.63						1.63	1.61
Incremental Delay, d2				1.1	1.5						0.9	40.7
Delay (s)				8.4	10.1						29.1	77.5
Level of Service				A	B						C	E
Approach Delay (s)		0.0			9.9			0.0			46.1	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Irwin & 3rd

Aegis San Rafael
Existing (2017) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	950	220	870	1075	0	0	0	0
Future Volume (vph)	0	0	0	0	950	220	870	1075	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1033	239	946	1168	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	40	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1033	199	463	1631	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.29		0.44	c0.48				
v/s Ratio Perm						0.17						
v/c Ratio					0.79	0.48	0.78	0.86				
Uniform Delay, d1					21.5	18.6	12.9	14.0				
Progression Factor					0.78	0.63	0.76	0.73				
Incremental Delay, d2					3.6	2.8	6.6	3.6				
Delay (s)					20.3	14.5	16.4	13.8				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			19.2			14.4			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
16: Lindaro & 2nd

Aegis San Rafael
Existing (2017) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1505	85	0	0	0	0	50	195	50	285	0
Future Volume (veh/h)	40	1505	85	0	0	0	0	50	195	50	285	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1618	91				0	54	210	54	306	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	63	2547	147				0	535	432	379	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	119	4776	276				0	1385	1117	783	1355	0
Grp Volume(v), veh/h	509	801	442				0	54	210	54	306	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1339				0	1385	1117	783	1355	0
Q Serve(g_s), s	25.5	22.9	22.9				0.0	1.9	10.7	1.7	7.0	0.0
Cycle Q Clear(g_c), s	25.5	22.9	22.9				0.0	1.9	10.7	3.5	7.0	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	714				0	535	432	379	524	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.10	0.49	0.14	0.58	0.00
Avail Cap(c_a), veh/h	749	1294	714				0	535	432	379	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	23.8	23.9				0.0	14.7	17.4	5.9	6.0	0.0
Incr Delay (d2), s/veh	4.9	2.2	4.0				0.0	0.4	3.9	0.8	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	8.1	9.3				0.0	0.8	3.7	0.4	3.1	0.0
LnGrp Delay(d),s/veh	29.8	26.1	27.9				0.0	15.1	21.3	6.7	10.7	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1752						264			360	
Approach Delay, s/veh		27.6						20.0			10.1	
Approach LOS		C						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				12.7		27.5		9.0
Green Ext Time (p_c), s				2.7		6.5		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1600	35	0	0	0	0	85	45	115	225	0
Future Volume (veh/h)	120	1600	35	0	0	0	0	85	45	115	225	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	133	1778	39				0	94	50	128	250	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	179	2568	617				0	498	394	299	562	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	327	4697	1129				0	1333	1055	589	1567	0
Grp Volume(v), veh/h	566	1345	39				0	94	50	196	182	0
Grp Sat Flow(s),veh/h/ln	1392	1211	1129				0	1333	1055	953	1142	0
Q Serve(g_s), s	28.9	25.9	2.1				0.0	3.6	2.3	12.1	11.0	0.0
Cycle Q Clear(g_c), s	28.9	25.9	2.1				0.0	3.6	2.3	15.7	11.0	0.0
Prop In Lane	0.23		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	435	426	0
V/C Ratio(X)	0.74	0.68	0.06				0.00	0.19	0.13	0.45	0.43	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	435	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.8	24.6	14.8				0.0	15.8	15.5	28.3	25.4	0.0
Incr Delay (d2), s/veh	6.5	1.9	0.2				0.0	0.8	0.7	3.4	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	9.0	0.7				0.0	1.4	0.8	4.3	3.9	0.0
LnGrp Delay(d),s/veh	32.3	26.4	15.0				0.0	16.7	16.1	31.6	28.5	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		1950						144			378	
Approach Delay, s/veh		27.9						16.5			30.2	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				5.6		30.9		17.7
Green Ext Time (p_c), s				2.2		6.2		1.6

Intersection Summary		
HCM 2010 Ctrl Delay		27.6
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1075	915	0	0	0	0	0	0	215	990	0
Future Volume (vph)	0	1075	915	0	0	0	0	0	0	215	990	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4380	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4380	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1144	973	0	0	0	0	0	0	229	1053	0
RTOR Reduction (vph)	0	13	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1618	473	0	0	0	0	0	0	206	1076	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.37	c0.47							0.17	c0.40	
v/s Ratio Perm												
v/c Ratio		0.69	0.88							0.43	1.04	
Uniform Delay, d1		13.0	15.4							16.9	23.0	
Progression Factor		0.58	0.67							0.50	0.58	
Incremental Delay, d2		1.2	13.8							2.6	37.6	
Delay (s)		8.7	24.2							11.1	50.9	
Level of Service		A	C							B	D	
Approach Delay (s)		12.3			0.0			0.0			44.5	
Approach LOS		B			A			A			D	

Intersection Summary				
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.95			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	124.7%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: 101 NBOff Irwin/Irwin & 2nd

Aegis San Rafael
Existing (2017) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	725	0	0	0	0	0	1270	435	0	0	0
Future Volume (vph)	565	725	0	0	0	0	0	1270	435	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	614	788	0	0	0	0	0	1380	473	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	64	0	0	0
Lane Group Flow (vph)	443	925	0	0	0	0	0	1380	409	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.36				
v/s Ratio Perm	c0.41	0.25							c0.38			
v/c Ratio	0.87	0.53						0.80	0.84			
Uniform Delay, d1	18.0	14.2						17.6	18.1			
Progression Factor	0.54	0.42						1.00	1.00			
Incremental Delay, d2	14.4	0.9						3.9	16.1			
Delay (s)	24.0	6.9						21.5	34.2			
Level of Service	C	A						C	C			
Approach Delay (s)		12.5			0.0			24.7			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
1: Lincoln & Mission

Aegis San Rafael
Existing (2017) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	405	5	45	475	135	10	420	40	10	345	295
Future Volume (veh/h)	195	405	5	45	475	135	10	420	40	10	345	295
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1790	1728
Adj Flow Rate, veh/h	201	418	5	46	490	139	10	433	41	10	356	304
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	522	1011	12	521	606	172	54	882	83	52	570	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.95	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1685	20	920	1274	361	22	2713	255	18	1755	1295
Grp Volume(v), veh/h	201	0	423	46	0	629	269	0	215	366	0	304
Grp Sat Flow(s),veh/h/ln	1629	0	1706	920	0	1635	1652	0	1337	1773	0	1295
Q Serve(g_s), s	4.8	0.0	10.6	0.3	0.0	6.5	0.2	0.0	6.7	0.0	0.0	16.6
Cycle Q Clear(g_c), s	4.8	0.0	10.6	0.9	0.0	6.5	16.8	0.0	6.7	13.9	0.0	16.6
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.19	0.03		1.00
Lane Grp Cap(c), veh/h	522	0	1023	521	0	778	584	0	435	622	0	421
V/C Ratio(X)	0.39	0.00	0.41	0.09	0.00	0.81	0.46	0.00	0.50	0.59	0.00	0.72
Avail Cap(c_a), veh/h	564	0	1023	521	0	778	584	0	435	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.82	0.00	0.82	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	0.0	8.5	1.1	0.0	1.2	10.6	0.0	10.7	22.9	0.0	23.8
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.3	0.0	7.4	2.5	0.0	3.8	4.0	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	5.3	0.1	0.0	3.3	3.2	0.0	2.9	7.5	0.0	7.1
LnGrp Delay(d),s/veh	9.1	0.0	9.7	1.3	0.0	8.6	13.0	0.0	14.5	26.9	0.0	34.1
LnGrp LOS	A		A	A		A	B		B	C		C
Approach Vol, veh/h		624			675			484			670	
Approach Delay, s/veh		9.5			8.1			13.7			30.2	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	9.9	41.1		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		12.6		18.8	6.8	8.5		18.6
Green Ext Time (p_c), s		13.9		4.0	0.1	12.3		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	450	5	5	655	0	10
Future Volume (vph)	450	5	5	655	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	474	5	5	689	0	11
RTOR Reduction (vph)	1	0	0	0	10	0
Lane Group Flow (vph)	478	0	0	694	1	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	36.2			61.9	10.9	
Effective Green, g (s)	36.2			53.1	10.9	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	731			1073	185	
v/s Ratio Prot	c0.30				c0.00	
v/s Ratio Perm				c0.43		
v/c Ratio	0.65			0.65	0.01	
Uniform Delay, d1	17.0			7.9	29.9	
Progression Factor	0.66			0.63	1.00	
Incremental Delay, d2	4.2			0.1	0.0	
Delay (s)	15.5			5.2	29.9	
Level of Service	B			A	C	
Approach Delay (s)	15.5			5.2	29.9	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	460	0	0	660	5	15
Future Volume (vph)	460	0	0	660	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	511	0	0	733	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	511	0	0	733	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.1			36.2	16.9	
Effective Green, g (s)	47.1			36.2	16.9	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	934			718	298	
v/s Ratio Prot	c0.32			c0.46	c0.01	
v/s Ratio Perm						
v/c Ratio	0.55			1.02	0.03	
Uniform Delay, d1	10.0			21.9	25.1	
Progression Factor	0.13			1.08	0.95	
Incremental Delay, d2	0.5			32.6	0.0	
Delay (s)	1.8			56.4	23.9	
Level of Service	A			E	C	
Approach Delay (s)	1.8			56.4	23.9	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	435	40	30	160	0	0	0	0	275	975	500
Future Volume (vph)	0	435	40	30	160	0	0	0	0	275	975	500
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2832			1821						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2832			1641						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	453	42	31	167	0	0	0	0	286	1016	521
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	487	0	0	198	0	0	0	0	0	1302	521
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1132			656						1573	554
v/s Ratio Prot		c0.17									c0.43	
v/s Ratio Perm					0.12							c0.41
v/c Ratio		0.43			0.30						0.83	0.94
Uniform Delay, d1		17.4			16.4						16.0	21.5
Progression Factor		0.31			0.33						1.00	1.00
Incremental Delay, d2		1.0			1.0						5.2	26.0
Delay (s)		6.4			6.4						21.1	47.5
Level of Service		A			A						C	D
Approach Delay (s)		6.4			6.4			0.0			28.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	330	0	0	125	405	65	1530	55	0	0	0
Future Volume (veh/h)	380	330	0	0	125	405	65	1530	55	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	388	337	0	0	128	413	66	1561	56			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	506	833	0	0	446	359	74	1835	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	148	3669	1670			
Grp Volume(v), veh/h	388	337	0	0	128	413	872	755	56			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1954	1863	1670			
Q Serve(g_s), s	4.9	5.6	0.0	0.0	4.3	18.0	35.0	31.3	2.3			
Cycle Q Clear(g_c), s	4.9	5.6	0.0	0.0	4.3	18.0	35.0	31.3	2.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	506	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.77	0.40	0.00	0.00	0.29	1.15	0.89	0.81	0.07			
Avail Cap(c_a), veh/h	506	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.2	7.5	0.0	0.0	25.7	31.0	31.3	29.7	17.6			
Incr Delay (d2), s/veh	10.6	1.5	0.0	0.0	1.6	95.2	12.2	7.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.5	3.3	0.0	0.0	2.5	17.4	22.2	18.1	1.1			
LnGrp Delay(d),s/veh	33.8	8.9	0.0	0.0	27.3	126.2	43.5	37.3	17.8			
LnGrp LOS	C	A			C	F	D	D	B			
Approach Vol, veh/h		725			541			1683				
Approach Delay, s/veh		22.3			102.8			39.9				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		37.0		7.6			6.9	20.0
Green Ext Time (p_c), s		1.4		3.3			1.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	270	45	10	230	35	25	390	40	55	320	35
Future Volume (veh/h)	65	270	45	10	230	35	25	390	40	55	320	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	69	287	48	11	245	37	27	415	43	59	340	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	206	358	60	146	350	53	112	1479	151	238	1272	139
Arrive On Green	0.27	0.27	0.27	0.55	0.55	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	883	1314	220	803	1283	194	95	2267	231	278	1949	213
Grp Volume(v), veh/h	69	0	335	11	0	282	268	0	217	231	0	205
Grp Sat Flow(s),veh/h/ln	883	0	1533	803	0	1477	1429	0	1164	1261	0	1180
Q Serve(g_s), s	5.9	0.0	16.3	1.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.1	0.0	16.3	17.2	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.13	0.10		0.20	0.25		0.18
Lane Grp Cap(c), veh/h	206	0	418	146	0	403	982	0	760	879	0	770
V/C Ratio(X)	0.33	0.00	0.80	0.08	0.00	0.70	0.27	0.00	0.29	0.26	0.00	0.27
Avail Cap(c_a), veh/h	429	0	805	348	0	775	982	0	760	879	0	770
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.95	0.00	0.95	0.77	0.00	0.77
Uniform Delay (d), s/veh	32.7	0.0	27.1	24.4	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.4	0.1	0.0	0.8	0.7	0.0	0.9	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.0	0.2	0.0	4.5	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.1	0.0	28.5	24.4	0.0	16.7	0.7	0.0	0.9	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		404			293			485			436	
Approach Delay, s/veh		29.3			17.0			0.8			0.6	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.8		55.2		24.8		55.2
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		19.1		2.0		19.2		2.0
Green Ext Time (p_c), s		0.3		0.3		0.3		0.3

Intersection Summary		
HCM 2010 Ctrl Delay		10.8
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	225	160	30	150	0	0	0	0	25	975	115
Future Volume (vph)	0	225	160	30	150	0	0	0	0	25	975	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1703			1815						4174	1117
Flt Permitted		1.00			0.91						1.00	1.00
Satd. Flow (perm)		1703			1657						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	245	174	33	163	0	0	0	0	27	1060	125
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	196	0	0	0	0	0	1087	125
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		796			774						1930	417
v/s Ratio Prot		c0.23									c0.26	
v/s Ratio Perm					0.12							0.11
v/c Ratio		0.50			0.25						0.56	0.30
Uniform Delay, d1		14.8			12.9						15.6	17.7
Progression Factor		0.84			0.87						0.37	0.45
Incremental Delay, d2		2.2			0.7						0.8	1.3
Delay (s)		14.5			11.8						6.6	9.2
Level of Service		B			B						A	A
Approach Delay (s)		14.5			11.8			0.0			6.9	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2	
Intersection Capacity Utilization	70.9%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	150	0	0	110	105	65	1325	20	5	0	0
Future Volume (veh/h)	100	150	0	0	110	105	65	1325	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	102	153	0	0	112	107	66	1352	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	414	688	0	0	285	273	62	1338	21			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1048	1620	0	0	671	641	125	2677	41			
Grp Volume(v), veh/h	102	153	0	0	0	219	753	0	685			
Grp Sat Flow(s),veh/h/ln	1048	1620	0	0	0	1313	1422	0	1420			
Q Serve(g_s), s	3.7	1.4	0.0	0.0	0.0	9.3	40.0	0.0	38.3			
Cycle Q Clear(g_c), s	12.9	1.4	0.0	0.0	0.0	9.3	40.0	0.0	38.3			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	414	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.25	0.22	0.00	0.00	0.00	0.39	1.06	0.00	0.96			
Avail Cap(c_a), veh/h	414	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.6	3.6	0.0	0.0	0.0	16.0	33.4	0.0	32.7			
Incr Delay (d2), s/veh	1.4	0.7	0.0	0.0	0.0	2.1	50.5	0.0	26.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	0.7	0.0	0.0	0.0	3.7	25.7	0.0	20.2			
LnGrp Delay(d),s/veh	8.0	4.3	0.0	0.0	0.0	18.1	83.9	0.0	58.8			
LnGrp LOS	A	A				B	F		E			
Approach Vol, veh/h		255			219			1438				
Approach Delay, s/veh		5.8			18.1			71.9				
Approach LOS		A			B			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		14.9				11.3
Green Ext Time (p_c), s		0.0		2.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	56.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	300	55	50	235	65	35	325	35	35	290	65
Future Volume (veh/h)	75	300	55	50	235	65	35	325	35	35	290	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.99		0.90	0.94		0.88	0.97		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	82	326	60	54	255	71	38	353	38	38	315	71
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	331	452	83	212	422	117	150	1261	134	148	1100	242
Arrive On Green	0.37	0.37	0.36	0.73	0.73	0.73	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	930	1234	227	886	1152	321	175	2256	239	171	1968	434
Grp Volume(v), veh/h	82	0	386	54	0	326	235	0	194	237	0	187
Grp Sat Flow(s),veh/h/ln	930	0	1461	886	0	1473	1451	0	1220	1428	0	1144
Q Serve(g_s), s	5.7	0.0	18.2	4.0	0.0	8.5	0.0	0.0	10.9	0.3	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	18.2	22.2	0.0	8.5	10.0	0.0	10.9	11.2	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.16		0.20	0.16		0.38
Lane Grp Cap(c), veh/h	331	0	535	212	0	539	863	0	682	850	0	639
V/C Ratio(X)	0.25	0.00	0.72	0.25	0.00	0.60	0.27	0.00	0.28	0.28	0.00	0.29
Avail Cap(c_a), veh/h	479	0	767	353	0	773	863	0	682	850	0	639
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	1.00	0.00	1.00	0.94	0.00	0.94	0.96	0.00	0.96
Uniform Delay (d), s/veh	24.1	0.0	21.9	17.3	0.0	8.0	18.5	0.0	18.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.0	1.1	0.7	0.0	1.0	0.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.5	1.0	0.0	3.4	4.6	0.0	3.9	0.2	0.0	0.2
LnGrp Delay(d),s/veh	24.4	0.0	23.5	17.9	0.0	9.1	19.2	0.0	19.8	0.8	0.0	1.1
LnGrp LOS	C		C	B		A	B		B	A		A
Approach Vol, veh/h		468			380			429			424	
Approach Delay, s/veh		23.6			10.3			19.5			0.9	
Approach LOS		C			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.3		47.7		32.3		47.7
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		20.2		12.9		24.2		13.2
Green Ext Time (p_c), s		4.1		3.7		3.8		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	320	55	75	210	0	0	0	0	115	940	150
Future Volume (vph)	0	320	55	75	210	0	0	0	0	115	940	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1575	1506						4303	1264
Flt Permitted		1.00	1.00	0.43	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	711	1506						4303	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	356	61	83	233	0	0	0	0	128	1044	167
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	356	27	83	233	0	0	0	0	0	1172	167
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	319	677						2022	483
v/s Ratio Prot		c0.21			0.15							
v/s Ratio Perm			0.02	0.12							0.27	0.13
v/c Ratio		0.47	0.05	0.26	0.34						0.58	0.35
Uniform Delay, d1		15.4	12.4	13.7	14.3						15.4	17.6
Progression Factor		1.00	1.00	0.93	0.95						0.40	0.48
Incremental Delay, d2		2.1	0.2	1.9	1.3						1.1	1.7
Delay (s)		17.5	12.6	14.6	15.0						7.3	10.1
Level of Service		B	B	B	B						A	B
Approach Delay (s)		16.8			14.9			0.0			7.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	265	0	0	200	40	90	1110	235	0	0	0
Future Volume (vph)	170	265	0	0	200	40	90	1110	235	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1447	1620			1385		1235	2495				
Flt Permitted	0.50	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	754	1620			1385		1235	2495				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	276	0	0	208	42	94	1156	245	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	177	276	0	0	241	0	94	1380	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	273	587			502		694	1403				
v/s Ratio Prot		0.17			0.17			c0.55				
v/s Ratio Perm	c0.23						0.08					
v/c Ratio	0.65	0.47			0.48		0.14	0.98				
Uniform Delay, d1	21.3	19.6			19.7		8.3	17.1				
Progression Factor	1.48	1.52			1.14		0.36	0.31				
Incremental Delay, d2	10.0	2.4			3.1		0.2	12.3				
Delay (s)	41.6	32.2			25.5		3.1	17.6				
Level of Service	D	C			C		A	B				
Approach Delay (s)		35.8			25.5			16.7			0.0	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	175	1350	45	80	15	0	0	35	10
Future Volume (vph)	0	0	0	175	1350	45	80	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3902			1382			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3902			1098			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	188	1452	48	86	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	188	1496	0	0	102	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2438			329			417	
v/s Ratio Prot					c0.38						0.03	
v/s Ratio Perm				0.15				c0.09				
v/c Ratio				0.24	0.61			0.31			0.10	
Uniform Delay, d1				6.6	9.1			21.6			20.2	
Progression Factor				0.37	0.30			1.05			1.00	
Incremental Delay, d2				0.6	1.0			2.3			0.5	
Delay (s)				3.1	3.6			24.9			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.6			24.9			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	1400	115	30	270	0	0	225	130
Future Volume (veh/h)	0	0	0	80	1400	115	30	270	0	0	225	130
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1606	0	0	1536	1555
Adj Flow Rate, veh/h				82	1443	119	31	278	0	0	232	134
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	0	0	2	2
Cap, veh/h				126	2359	201	106	839	0	0	551	292
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				215	4015	342	155	2559	0	0	1710	866
Grp Volume(v), veh/h				609	508	528	158	151	0	0	205	161
Grp Sat Flow(s),veh/h/ln				1594	1461	1517	1253	1388	0	0	1459	1041
Q Serve(g_s), s				28.2	25.3	25.3	1.1	3.6	0.0	0.0	10.5	11.6
Cycle Q Clear(g_c), s				28.2	25.3	25.3	12.7	3.6	0.0	0.0	10.5	11.6
Prop In Lane				0.13		0.23	0.20		0.00	0.00		0.83
Lane Grp Cap(c), veh/h				937	858	891	477	468	0	0	492	351
V/C Ratio(X)				0.65	0.59	0.59	0.33	0.32	0.00	0.00	0.42	0.46
Avail Cap(c_a), veh/h				937	858	891	477	468	0	0	492	351
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.7	23.5	23.5	9.4	9.2	0.0	0.0	28.2	28.8
Incr Delay (d2), s/veh				3.5	3.0	2.9	1.9	1.8	0.0	0.0	2.6	4.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.4	11.0	11.4	1.6	1.6	0.0	0.0	4.6	3.8
LnGrp Delay(d),s/veh				28.2	26.5	26.4	11.2	11.0	0.0	0.0	30.8	33.0
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1644			309			366	
Approach Delay, s/veh					27.1			11.1			31.8	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				14.7		30.2		13.6
Green Ext Time (p_c), s				2.3		7.2		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	375	1335	0	0	0	0	0	700	415
Future Volume (vph)	0	0	0	375	1335	0	0	0	0	0	700	415
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	399	1420	0	0	0	0	0	745	441
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	0	0	239	1580	0	0	0	0	0	745	422
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.19	0.39							c0.40
v/c Ratio				0.33	0.68						0.50	1.14
Uniform Delay, d1				8.9	11.8						20.5	26.0
Progression Factor				0.69	0.68						1.20	1.24
Incremental Delay, d2				0.9	1.1						1.0	88.3
Delay (s)				7.0	9.1						25.7	120.5
Level of Service				A	A						C	F
Approach Delay (s)		0.0			8.8			0.0			61.0	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	770	185	935	1280	0	0	0	0
Future Volume (vph)	0	0	0	0	770	185	935	1280	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3474				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3474				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	802	193	974	1333	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	21	23	23	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	802	172	464	1797	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.21		0.43	c0.52				
v/s Ratio Perm						0.15						
v/c Ratio					0.56	0.38	0.80	0.96				
Uniform Delay, d1					19.1	17.6	15.0	17.7				
Progression Factor					0.91	0.85	0.86	0.81				
Incremental Delay, d2					1.2	1.9	5.0	7.3				
Delay (s)					18.7	16.9	18.0	21.7				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			18.3			20.9			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1555	65	0	0	0	0	85	295	65	145	0
Future Volume (veh/h)	50	1555	65	0	0	0	0	85	295	65	145	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	52	1620	68				0	89	307	68	151	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	80	2682	115				0	540	436	345	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	146	4875	210				0	1440	1163	764	1304	0
Grp Volume(v), veh/h	504	793	443				0	89	307	68	151	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1367				0	1440	1163	764	1304	0
Q Serve(g_s), s	26.4	23.7	23.8				0.0	3.3	17.9	6.5	8.4	0.0
Cycle Q Clear(g_c), s	26.4	23.7	23.8				0.0	3.3	17.9	9.8	8.4	0.0
Prop In Lane	0.10		0.15				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1347	752				0	540	436	345	489	0
V/C Ratio(X)	0.65	0.59	0.59				0.00	0.16	0.70	0.20	0.31	0.00
Avail Cap(c_a), veh/h	779	1347	752				0	540	436	345	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	24.5	24.5				0.0	16.7	21.2	27.7	25.6	0.0
Incr Delay (d2), s/veh	4.1	1.9	3.4				0.0	0.7	9.2	1.3	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	8.4	9.7				0.0	1.4	6.8	1.5	3.3	0.0
LnGrp Delay(d),s/veh	29.7	26.3	27.8				0.0	17.3	30.4	29.0	27.2	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1740						396			219	
Approach Delay, s/veh		27.7						27.5			27.8	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				19.9		28.4		11.8
Green Ext Time (p_c), s				2.1		7.5		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	1675	45	0	0	0	0	180	125	115	150	0
Future Volume (veh/h)	190	1675	45	0	0	0	0	180	125	115	150	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1352	0
Adj Flow Rate, veh/h	198	1745	47				0	188	130	120	156	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	272	2588	639				0	512	432	284	453	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	484	4601	1135				0	1412	1191	550	1310	0
Grp Volume(v), veh/h	573	1370	47				0	188	130	135	141	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	630	1169	0
Q Serve(g_s), s	30.8	27.6	2.7				0.0	7.8	6.3	8.2	3.5	0.0
Cycle Q Clear(g_c), s	30.8	27.6	2.7				0.0	7.8	6.3	16.1	3.5	0.0
Prop In Lane	0.35		1.00				0.00		1.00	0.89		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	313	424	0
V/C Ratio(X)	0.73	0.66	0.07				0.00	0.37	0.30	0.43	0.33	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	313	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.8	25.5	15.4				0.0	18.8	18.2	11.5	7.5	0.0
Incr Delay (d2), s/veh	5.8	1.7	0.2				0.0	2.0	1.8	4.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	9.7	0.9				0.0	3.3	2.3	2.3	1.3	0.0
LnGrp Delay(d),s/veh	32.6	27.2	15.6				0.0	20.8	20.0	15.8	9.6	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		1990						318			276	
Approach Delay, s/veh		28.5						20.5			12.6	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				9.8		32.8		18.1
Green Ext Time (p_c), s				2.5		7.4		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1150	1030	0	0	0	0	0	0	345	750	0
Future Volume (vph)	0	1150	1030	0	0	0	0	0	0	345	750	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4462	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4462	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1186	1062	0	0	0	0	0	0	356	773	0
RTOR Reduction (vph)	0	39	39	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1678	492	0	0	0	0	0	0	320	809	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2342	517							506	1080	
v/s Ratio Prot		0.38								0.25	c0.30	
v/s Ratio Perm			c0.50									
v/c Ratio		0.72	0.95							0.63	0.75	
Uniform Delay, d1		14.5	18.0							19.3	20.6	
Progression Factor		0.42	0.42							0.73	0.77	
Incremental Delay, d2		1.3	22.6							5.2	4.2	
Delay (s)		7.5	30.2							19.4	20.1	
Level of Service		A	C							B	C	
Approach Delay (s)		12.8			0.0			0.0			19.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	810	680	0	0	0	0	0	1425	625	0	0	0
Future Volume (vph)	810	680	0	0	0	0	0	1425	625	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3800						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3800						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	835	701	0	0	0	0	0	1469	644	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	92	0	0	0
Lane Group Flow (vph)	611	895	0	0	0	0	0	1469	552	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.55	0.24							c0.50			
v/c Ratio	1.12	0.48						0.86	1.15			
Uniform Delay, d1	20.5	13.7						20.3	22.5			
Progression Factor	0.64	0.56						1.00	1.00			
Incremental Delay, d2	69.8	0.6						6.1	90.4			
Delay (s)	83.0	8.4						26.4	112.9			
Level of Service	F	A						C	F			
Approach Delay (s)		38.8			0.0			52.8			0.0	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	453	20	35	437	146	6	200	35	45	320	336
Future Volume (veh/h)	135	453	20	35	437	146	6	200	35	45	320	336
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1676	1710	1800	1663	1728	1800	1769	1711
Adj Flow Rate, veh/h	141	472	21	36	455	152	6	208	36	47	333	350
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	385	900	40	422	513	171	53	437	74	104	558	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1607	71	865	1189	397	11	1214	206	139	1549	1372
Grp Volume(v), veh/h	141	0	493	36	0	607	250	0	0	380	0	350
Grp Sat Flow(s),veh/h/ln	1597	0	1678	865	0	1587	1431	0	0	1688	0	1372
Q Serve(g_s), s	3.4	0.0	13.7	0.8	0.0	16.8	0.0	0.0	0.0	4.9	0.0	16.4
Cycle Q Clear(g_c), s	3.4	0.0	13.7	4.9	0.0	16.8	5.6	0.0	0.0	13.6	0.0	16.4
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	385	0	940	422	0	685	564	0	0	661	0	494
V/C Ratio(X)	0.37	0.00	0.52	0.09	0.00	0.89	0.44	0.00	0.00	0.57	0.00	0.71
Avail Cap(c_a), veh/h	392	0	940	422	0	685	564	0	0	661	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.00	0.84	0.95	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	0.0	10.3	3.8	0.0	4.1	7.6	0.0	0.0	19.6	0.0	20.6
Incr Delay (d2), s/veh	0.2	0.0	2.1	0.3	0.0	13.6	2.4	0.0	0.0	3.6	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	6.8	0.2	0.0	8.8	2.5	0.0	0.0	7.1	0.0	7.4
LnGrp Delay(d),s/veh	12.2	0.0	12.4	4.1	0.0	17.7	9.9	0.0	0.0	23.2	0.0	29.0
LnGrp LOS	B		B	A		B	A			C		C
Approach Vol, veh/h		634			643			250			730	
Approach Delay, s/veh		12.3			16.9			9.9			26.0	
Approach LOS		B			B			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.6	35.4		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		15.7		7.6	5.4	18.8		18.4
Green Ext Time (p_c), s		12.5		8.6	0.0	7.6		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	523	10	5	613	0	5
Future Volume (vph)	523	10	5	613	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1598			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1598			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	545	10	5	639	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	554	0	0	644	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	32.1			57.1	11.7	
Effective Green, g (s)	32.1			48.3	11.7	
Actuated g/C Ratio	0.43			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	683			1032	213	
v/s Ratio Prot	c0.35				c0.00	
v/s Ratio Perm				0.40		
v/c Ratio	0.81			0.62	0.00	
Uniform Delay, d1	18.8			7.9	26.7	
Progression Factor	0.81			0.58	1.00	
Incremental Delay, d2	8.8			0.1	0.0	
Delay (s)	23.9			4.7	26.7	
Level of Service	C			A	C	
Approach Delay (s)	23.9			4.7	26.7	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	523	0	0	618	5	15
Future Volume (vph)	523	0	0	618	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	581	0	0	687	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	581	0	0	687	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.8			32.1	16.2	
Effective Green, g (s)	43.8			32.1	16.2	
Actuated g/C Ratio	0.58			0.43	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	927			679	304	
v/s Ratio Prot	c0.37			c0.43	c0.01	
v/s Ratio Perm						
v/c Ratio	0.63			1.01	0.03	
Uniform Delay, d1	10.2			21.4	23.2	
Progression Factor	0.27			1.22	1.26	
Incremental Delay, d2	0.8			31.1	0.0	
Delay (s)	3.6			57.4	29.1	
Level of Service	A			E	C	
Approach Delay (s)	3.6			57.4	29.1	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	486	51	30	175	0	0	0	0	185	885	438
Future Volume (vph)	0	486	51	30	175	0	0	0	0	185	885	438
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2800			1791						2911	1244
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2800			1613						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	506	53	31	182	0	0	0	0	193	922	456
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	549	0	0	213	0	0	0	0	0	1115	456
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1269			731						1358	464
v/s Ratio Prot		c0.20									c0.38	
v/s Ratio Perm					0.13							c0.37
v/c Ratio		0.43			0.29						0.82	0.98
Uniform Delay, d1		13.9			12.9						17.3	23.3
Progression Factor		0.62			1.70						1.00	1.00
Incremental Delay, d2		0.9			0.9						5.7	37.7
Delay (s)		9.5			22.9						23.0	61.0
Level of Service		A			C						C	E
Approach Delay (s)		9.5			22.9			0.0			34.0	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	406	260	0	0	136	395	74	1185	35	0	0	0
Future Volume (veh/h)	406	260	0	0	136	395	74	1185	35	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	432	277	0	0	145	420	79	1261	37			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	531	888	0	0	518	417	95	1585	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	209	3495	1659			
Grp Volume(v), veh/h	432	277	0	0	145	420	717	623	37			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1894	1810	1659			
Q Serve(g_s), s	7.5	9.7	0.0	0.0	4.4	20.0	27.6	24.8	1.4			
Cycle Q Clear(g_c), s	7.5	9.7	0.0	0.0	4.4	20.0	27.6	24.8	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.11		1.00			
Lane Grp Cap(c), veh/h	531	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.81	0.31	0.00	0.00	0.28	1.01	0.84	0.76	0.05			
Avail Cap(c_a), veh/h	531	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.2	21.0	0.0	0.0	21.8	27.5	29.2	28.0	18.0			
Incr Delay (d2), s/veh	12.9	0.9	0.0	0.0	1.3	46.1	9.4	6.5	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.7	5.3	0.0	0.0	2.6	13.9	16.7	13.9	0.7			
LnGrp Delay(d),s/veh	42.0	21.9	0.0	0.0	23.1	73.7	38.6	34.5	18.2			
LnGrp LOS	D	C			C	F	D	C	B			
Approach Vol, veh/h		709			565			1377				
Approach Delay, s/veh		34.2			60.7			36.2				
Approach LOS		C			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		29.6		11.7			9.5	22.0
Green Ext Time (p_c), s		2.0		3.2			0.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	325	25	20	230	35	10	191	25	25	350	20
Future Volume (veh/h)	40	325	25	20	230	35	10	191	25	25	350	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	353	27	22	250	38	11	208	27	27	380	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	221	467	36	178	419	64	63	651	82	75	702	39
Arrive On Green	0.33	0.33	0.32	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	880	1423	109	764	1277	194	21	1101	138	41	1187	66
Grp Volume(v), veh/h	43	0	380	22	0	288	246	0	0	429	0	0
Grp Sat Flow(s),veh/h/ln	880	0	1532	764	0	1471	1261	0	0	1295	0	0
Q Serve(g_s), s	3.3	0.0	16.6	2.1	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.3	0.0	16.6	18.7	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	221	0	503	178	0	483	796	0	0	817	0	0
V/C Ratio(X)	0.19	0.00	0.76	0.12	0.00	0.60	0.31	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	295	0	633	243	0	608	796	0	0	817	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.96	0.00	0.00	0.73	0.00	0.00
Uniform Delay (d), s/veh	29.0	0.0	22.5	38.9	0.0	28.7	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.0	0.3	0.0	1.1	1.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.5	0.5	0.0	5.9	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.5	0.0	26.5	39.2	0.0	29.8	1.0	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		423			310			246			429	
Approach Delay, s/veh		26.8			30.5			1.0			1.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.6		47.4		27.6		47.4
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		19.3		2.0		20.7		2.0
Green Ext Time (p_c), s		2.5		3.2		2.3		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	270	90	45	215	0	0	0	0	25	876	70
Future Volume (vph)	0	270	90	45	215	0	0	0	0	25	876	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1795						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	290	97	48	231	0	0	0	0	27	942	75
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	371	0	0	279	0	0	0	0	0	969	75
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.21									c0.24	
v/s Ratio Perm					0.17							0.07
v/c Ratio		0.47			0.38						0.51	0.18
Uniform Delay, d1		14.0			13.3						14.0	15.9
Progression Factor		0.31			1.31						0.17	0.25
Incremental Delay, d2		1.9			1.2						0.6	0.6
Delay (s)		6.1			18.5						3.1	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.1			18.5			0.0			3.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	90	0	0	115	20	145	1024	10	0	0	0
Future Volume (veh/h)	205	90	0	0	115	20	145	1024	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1591	1620	1620	1544	1620			
Adj Flow Rate, veh/h	225	99	0	0	126	22	159	1125	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	376	524	0	0	390	68	188	1399	14			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1107	1573	0	0	1171	204	320	2385	24			
Grp Volume(v), veh/h	225	99	0	0	0	148	676	0	619			
Grp Sat Flow(s),veh/h/ln	1107	1573	0	0	0	1375	1359	0	1370			
Q Serve(g_s), s	15.0	4.3	0.0	0.0	0.0	6.0	36.0	0.0	32.1			
Cycle Q Clear(g_c), s	21.0	4.3	0.0	0.0	0.0	6.0	36.0	0.0	32.1			
Prop In Lane	1.00		0.00	0.00		0.15	0.24		0.02			
Lane Grp Cap(c), veh/h	376	524	0	0	0	458	797	0	804			
V/C Ratio(X)	0.60	0.19	0.00	0.00	0.00	0.32	0.85	0.00	0.77			
Avail Cap(c_a), veh/h	376	524	0	0	0	458	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	34.6	24.2	0.0	0.0	0.0	18.7	27.0	0.0	25.5			
Incr Delay (d2), s/veh	6.9	0.8	0.0	0.0	0.0	1.9	10.8	0.0	7.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	2.0	0.0	0.0	0.0	2.5	15.9	0.0	13.7			
LnGrp Delay(d),s/veh	41.4	25.0	0.0	0.0	0.0	20.6	37.9	0.0	32.5			
LnGrp LOS	D	C				C	D		C			
Approach Vol, veh/h		324			148			1295				
Approach Delay, s/veh		36.4			20.6			35.3				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		38.0		23.0				8.0
Green Ext Time (p_c), s		2.5		0.1				2.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	180	35	55	240	25	10	161	55	45	300	45
Future Volume (veh/h)	40	180	35	55	240	25	10	161	55	45	300	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.96		0.90	0.97		0.93	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1571	1555	1620	1579	1555
Adj Flow Rate, veh/h	44	198	38	60	264	27	11	177	60	49	330	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	200	371	71	258	408	42	64	589	192	115	649	92
Arrive On Green	0.31	0.31	0.30	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	896	1212	233	951	1335	137	22	960	313	100	1056	150
Grp Volume(v), veh/h	44	0	236	60	0	291	248	0	0	428	0	0
Grp Sat Flow(s),veh/h/ln	896	0	1445	951	0	1472	1295	0	0	1306	0	0
Q Serve(g_s), s	3.4	0.0	10.2	4.6	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.7	0.0	10.2	14.7	0.0	14.3	12.1	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.09	0.04		0.24	0.11		0.11
Lane Grp Cap(c), veh/h	200	0	442	258	0	450	846	0	0	856	0	0
V/C Ratio(X)	0.22	0.00	0.53	0.23	0.00	0.65	0.29	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	284	0	578	347	0	589	846	0	0	856	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.82	0.00	0.00	0.79	0.00	0.00
Uniform Delay (d), s/veh	30.9	0.0	21.6	34.9	0.0	29.8	16.3	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.4	0.0	1.5	0.7	0.0	0.0	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.2	1.2	0.0	6.0	4.6	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.4	0.0	22.6	35.4	0.0	31.3	17.1	0.0	0.0	1.7	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		280			351			248			428	
Approach Delay, s/veh		23.9			32.0			17.1			1.7	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.9		49.1		25.9		49.1
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		19.7		14.1		16.7		2.0
Green Ext Time (p_c), s		2.1		3.2		2.4		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	130	85	110	240	0	0	0	0	70	811	115
Future Volume (vph)	0	130	85	110	240	0	0	0	0	70	811	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1647	1450						4228	1264
Flt Permitted		1.00	1.00	0.66	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1142	1450						4228	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	140	91	118	258	0	0	0	0	75	872	124
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	140	47	118	258	0	0	0	0	0	947	124
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	517	657						1950	465
v/s Ratio Prot		0.09			c0.18							
v/s Ratio Perm			0.04	0.10							0.22	0.10
v/c Ratio		0.19	0.09	0.23	0.39						0.49	0.27
Uniform Delay, d1		12.3	11.7	12.5	13.6						14.0	16.6
Progression Factor		1.85	3.78	0.68	0.75						1.65	1.52
Incremental Delay, d2		0.6	0.3	0.8	1.4						0.8	1.2
Delay (s)		23.3	44.5	9.4	11.7						23.9	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		31.6			11.0			0.0			24.2	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	175	0	0	260	130	90	999	50	0	0	0
Future Volume (vph)	30	175	0	0	260	130	90	999	50	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.95		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1326		1226	2456				
Flt Permitted	0.34	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	518	1588			1326		1226	2456				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	184	0	0	274	137	95	1052	53	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	5	0	0	0	0
Lane Group Flow (vph)	32	184	0	0	387	0	95	1100	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	207	635			530		637	1277				
v/s Ratio Prot		0.12			c0.29			c0.45				
v/s Ratio Perm	0.06						0.08					
v/c Ratio	0.15	0.29			0.73		0.15	0.86				
Uniform Delay, d1	14.4	15.3			19.1		9.4	15.7				
Progression Factor	1.71	1.66			0.88		0.77	0.63				
Incremental Delay, d2	1.5	1.1			7.3		0.3	4.6				
Delay (s)	26.2	26.5			24.0		7.5	14.4				
Level of Service	C	C			C		A	B				
Approach Delay (s)		26.4			24.0			13.9			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	330	1290	20	75	5	0	0	30	10
Future Volume (vph)	0	0	0	330	1290	20	75	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3770			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3770			1042			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	367	1433	22	83	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	367	1453	0	0	89	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2362			305			406	
v/s Ratio Prot					c0.39						0.03	
v/s Ratio Perm				0.30				c0.09				
v/c Ratio				0.48	0.62			0.29			0.09	
Uniform Delay, d1				7.5	8.5			20.5			19.2	
Progression Factor				0.26	0.27			0.65			1.00	
Incremental Delay, d2				1.3	0.7			2.3			0.4	
Delay (s)				3.3	3.1			15.7			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.1			15.7			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	145	1450	40	25	156	0	0	250	145
Future Volume (veh/h)	0	0	0	145	1450	40	25	156	0	0	250	145
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				163	1629	45	28	175	0	0	281	163
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				215	2290	65	55	219	0	0	264	153
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				374	3994	113	0	632	0	0	762	442
Grp Volume(v), veh/h				670	561	605	203	0	0	0	0	444
Grp Sat Flow(s),veh/h/ln				1539	1417	1526	632	0	0	0	0	1203
Q Serve(g_s), s				30.9	27.7	27.8	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				30.9	27.7	27.8	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.24		0.07	0.14		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	875	274	0	0	0	0	417
V/C Ratio(X)				0.76	0.69	0.69	0.74	0.00	0.00	0.00	0.00	1.06
Avail Cap(c_a), veh/h				882	813	875	274	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				25.5	24.2	24.2	26.3	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				6.1	4.8	4.5	16.5	0.0	0.0	0.0	0.0	62.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.7	12.0	12.8	5.2	0.0	0.0	0.0	0.0	15.9
LnGrp Delay(d),s/veh				31.6	29.0	28.7	42.8	0.0	0.0	0.0	0.0	95.5
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1837			203			444	
Approach Delay, s/veh					29.9			42.8			95.5	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		32.9		28.0
Green Ext Time (p_c), s				0.0		5.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	440	1380	0	0	0	0	0	726	395
Future Volume (vph)	0	0	0	440	1380	0	0	0	0	0	726	395
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	458	1438	0	0	0	0	0	756	411
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	275	1621	0	0	0	0	0	756	398
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.22	0.40							c0.38
v/c Ratio				0.42	0.76						0.47	0.99
Uniform Delay, d1				10.5	13.7						17.2	22.8
Progression Factor				0.69	0.63						1.63	1.61
Incremental Delay, d2				1.1	1.5						0.9	40.7
Delay (s)				8.4	10.1						29.1	77.5
Level of Service				A	B						C	E
Approach Delay (s)		0.0			9.9			0.0			46.1	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	107.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Irwin & 3rd

Aegis San Rafael
Existing (2017) With-Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	950	221	870	1078	0	0	0	0
Future Volume (vph)	0	0	0	0	950	221	870	1078	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1033	240	946	1172	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	40	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1033	200	463	1635	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.29		0.44	c0.48				
v/s Ratio Perm						0.17						
v/c Ratio					0.79	0.48	0.78	0.86				
Uniform Delay, d1					21.5	18.6	12.9	14.1				
Progression Factor					0.78	0.63	0.76	0.73				
Incremental Delay, d2					3.6	2.9	6.6	3.6				
Delay (s)					20.2	14.6	16.4	14.0				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			19.2			14.5			0.0	
Approach LOS		A			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
16: Lindaro & 2nd

Aegis San Rafael
Existing (2017) With-Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1505	85	0	0	0	0	50	196	50	285	0
Future Volume (veh/h)	40	1505	85	0	0	0	0	50	196	50	285	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1618	91				0	54	211	54	306	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	63	2547	147				0	535	432	379	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	119	4776	276				0	1385	1117	783	1355	0
Grp Volume(v), veh/h	509	801	442				0	54	211	54	306	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1339				0	1385	1117	783	1355	0
Q Serve(g_s), s	25.5	22.9	22.9				0.0	1.9	10.7	1.7	7.0	0.0
Cycle Q Clear(g_c), s	25.5	22.9	22.9				0.0	1.9	10.7	3.5	7.0	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	714				0	535	432	379	524	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.10	0.49	0.14	0.58	0.00
Avail Cap(c_a), veh/h	749	1294	714				0	535	432	379	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.9	23.8	23.9				0.0	14.7	17.4	5.9	6.0	0.0
Incr Delay (d2), s/veh	4.9	2.2	4.0				0.0	0.4	3.9	0.8	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	8.1	9.3				0.0	0.8	3.8	0.4	3.1	0.0
LnGrp Delay(d),s/veh	29.8	26.1	27.9				0.0	15.1	21.3	6.7	10.7	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1752						265			360	
Approach Delay, s/veh		27.6						20.0			10.1	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				12.7		27.5		9.0
Green Ext Time (p_c), s				2.7		6.5		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1600	35	0	0	0	0	85	45	115	225	0
Future Volume (veh/h)	121	1600	35	0	0	0	0	85	45	115	225	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	134	1778	39				0	94	50	128	250	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	180	2566	617				0	498	394	299	562	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	329	4695	1129				0	1333	1055	589	1567	0
Grp Volume(v), veh/h	566	1346	39				0	94	50	196	182	0
Grp Sat Flow(s),veh/h/ln	1391	1211	1129				0	1333	1055	953	1142	0
Q Serve(g_s), s	28.9	25.9	2.1				0.0	3.6	2.3	12.1	11.0	0.0
Cycle Q Clear(g_c), s	28.9	25.9	2.1				0.0	3.6	2.3	15.7	11.0	0.0
Prop In Lane	0.24		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	435	426	0
V/C Ratio(X)	0.74	0.68	0.06				0.00	0.19	0.13	0.45	0.43	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	435	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.8	24.6	14.8				0.0	15.8	15.5	28.3	25.4	0.0
Incr Delay (d2), s/veh	6.5	1.9	0.2				0.0	0.8	0.7	3.4	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	9.0	0.7				0.0	1.4	0.8	4.3	3.9	0.0
LnGrp Delay(d),s/veh	32.3	26.4	15.0				0.0	16.7	16.1	31.6	28.5	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		1951						144			378	
Approach Delay, s/veh		27.9						16.5			30.2	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				5.6		30.9		17.7
Green Ext Time (p_c), s				2.2		6.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1075	915	0	0	0	0	0	0	215	991	0
Future Volume (vph)	0	1075	915	0	0	0	0	0	0	215	991	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4380	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4380	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1144	973	0	0	0	0	0	0	229	1054	0
RTOR Reduction (vph)	0	13	13	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1618	473	0	0	0	0	0	0	206	1077	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.37	c0.47							0.17	c0.40	
v/s Ratio Perm												
v/c Ratio		0.69	0.88							0.43	1.04	
Uniform Delay, d1		13.0	15.4							16.9	23.0	
Progression Factor		0.58	0.67							0.50	0.58	
Incremental Delay, d2		1.2	13.8							2.6	37.9	
Delay (s)		8.7	24.2							11.1	51.2	
Level of Service		A	C							B	D	
Approach Delay (s)		12.3			0.0			0.0			44.7	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	725	0	0	0	0	0	1273	435	0	0	0
Future Volume (vph)	565	725	0	0	0	0	0	1273	435	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	614	788	0	0	0	0	0	1384	473	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	64	0	0	0
Lane Group Flow (vph)	443	925	0	0	0	0	0	1384	409	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.36				
v/s Ratio Perm	c0.41	0.25							c0.38			
v/c Ratio	0.87	0.53						0.80	0.84			
Uniform Delay, d1	18.0	14.2						17.6	18.1			
Progression Factor	0.53	0.42						1.00	1.00			
Incremental Delay, d2	14.4	0.9						4.0	16.1			
Delay (s)	24.0	6.9						21.6	34.2			
Level of Service	C	A						C	C			
Approach Delay (s)		12.5			0.0			24.8			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	414	6	45	479	136	11	420	40	10	345	296
Future Volume (veh/h)	196	414	6	45	479	136	11	420	40	10	345	296
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1791	1728
Adj Flow Rate, veh/h	202	427	6	46	494	140	11	433	41	10	356	305
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	518	1009	14	513	606	172	55	871	82	52	570	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.95	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1681	24	912	1274	361	24	2680	253	18	1755	1295
Grp Volume(v), veh/h	202	0	433	46	0	634	268	0	217	366	0	305
Grp Sat Flow(s),veh/h/ln	1629	0	1705	912	0	1635	1620	0	1337	1773	0	1295
Q Serve(g_s), s	4.8	0.0	10.9	0.3	0.0	6.8	0.5	0.0	6.7	0.0	0.0	16.6
Cycle Q Clear(g_c), s	4.8	0.0	10.9	1.3	0.0	6.8	17.1	0.0	6.7	13.9	0.0	16.6
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.19	0.03		1.00
Lane Grp Cap(c), veh/h	518	0	1023	513	0	778	573	0	435	622	0	421
V/C Ratio(X)	0.39	0.00	0.42	0.09	0.00	0.81	0.47	0.00	0.50	0.59	0.00	0.72
Avail Cap(c_a), veh/h	561	0	1023	513	0	778	573	0	435	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.81	0.00	0.81	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	0.0	8.6	1.1	0.0	1.2	10.6	0.0	10.7	22.9	0.0	23.8
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.3	0.0	7.6	2.6	0.0	3.8	4.0	0.0	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.4	0.1	0.0	3.4	3.2	0.0	2.9	7.5	0.0	7.1
LnGrp Delay(d),s/veh	9.2	0.0	9.9	1.4	0.0	8.8	13.2	0.0	14.5	26.9	0.0	34.2
LnGrp LOS	A		A	A		A	B		B	C		C
Approach Vol, veh/h		635			680			485			671	
Approach Delay, s/veh		9.6			8.3			13.8			30.2	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	9.9	41.1		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		12.9		19.1	6.8	8.8		18.6
Green Ext Time (p_c), s		14.1		3.8	0.1	12.5		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	459	5	5	659	0	10
Future Volume (vph)	459	5	5	659	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	483	5	5	694	0	11
RTOR Reduction (vph)	1	0	0	0	9	0
Lane Group Flow (vph)	487	0	0	699	2	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	35.8			61.6	11.2	
Effective Green, g (s)	35.8			52.8	11.2	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	723			1067	191	
v/s Ratio Prot	c0.30				c0.00	
v/s Ratio Perm				c0.43		
v/c Ratio	0.67			0.66	0.01	
Uniform Delay, d1	17.5			8.1	29.6	
Progression Factor	0.67			0.64	1.00	
Incremental Delay, d2	4.6			0.1	0.0	
Delay (s)	16.2			5.3	29.6	
Level of Service	B			A	C	
Approach Delay (s)	16.2			5.3	29.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	469	0	0	664	5	15
Future Volume (vph)	469	0	0	664	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	521	0	0	738	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	521	0	0	738	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.0			35.8	17.0	
Effective Green, g (s)	47.0			35.8	17.0	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	932			710	299	
v/s Ratio Prot	c0.33			c0.46	c0.01	
v/s Ratio Perm						
v/c Ratio	0.56			1.04	0.03	
Uniform Delay, d1	10.1			22.1	25.0	
Progression Factor	0.14			1.08	0.95	
Incremental Delay, d2	0.6			38.1	0.0	
Delay (s)	2.0			62.0	23.8	
Level of Service	A			E	C	
Approach Delay (s)	2.0			62.0	23.8	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	440	45	30	163	0	0	0	0	275	975	502
Future Volume (vph)	0	440	45	30	163	0	0	0	0	275	975	502
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2828			1821						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2828			1641						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	458	47	31	170	0	0	0	0	286	1016	523
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	495	0	0	201	0	0	0	0	0	1302	523
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1131			656						1573	554
v/s Ratio Prot		c0.18									c0.43	
v/s Ratio Perm					0.12							c0.41
v/c Ratio		0.44			0.31						0.83	0.94
Uniform Delay, d1		17.5			16.4						16.0	21.6
Progression Factor		0.31			0.34						1.00	1.00
Incremental Delay, d2		1.1			1.0						5.2	26.6
Delay (s)		6.6			6.5						21.1	48.2
Level of Service		A			A						C	D
Approach Delay (s)		6.6			6.5			0.0			28.9	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	331	0	0	126	405	67	1530	55	0	0	0
Future Volume (veh/h)	383	331	0	0	126	405	67	1530	55	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	391	338	0	0	129	413	68	1561	56			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	506	833	0	0	446	359	76	1832	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	152	3665	1670			
Grp Volume(v), veh/h	391	338	0	0	129	413	873	756	56			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1954	1863	1670			
Q Serve(g_s), s	5.1	5.6	0.0	0.0	4.3	18.0	35.0	31.3	2.3			
Cycle Q Clear(g_c), s	5.1	5.6	0.0	0.0	4.3	18.0	35.0	31.3	2.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	506	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.77	0.41	0.00	0.00	0.29	1.15	0.89	0.81	0.07			
Avail Cap(c_a), veh/h	506	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.3	7.5	0.0	0.0	25.7	31.0	31.3	29.8	17.6			
Incr Delay (d2), s/veh	11.0	1.5	0.0	0.0	1.6	95.2	12.3	7.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.6	3.3	0.0	0.0	2.6	17.4	22.3	18.2	1.1			
LnGrp Delay(d),s/veh	34.2	9.0	0.0	0.0	27.3	126.2	43.6	37.4	17.8			
LnGrp LOS	C	A			C	F	D	D	B			
Approach Vol, veh/h		729			542			1685				
Approach Delay, s/veh		22.5			102.7			40.0				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		37.0		7.6			7.1	20.0
Green Ext Time (p_c), s		1.4		3.3			1.5	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	270	45	10	230	35	25	391	40	55	321	35
Future Volume (veh/h)	65	270	45	10	230	35	25	391	40	55	321	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	69	287	48	11	245	37	27	416	43	59	341	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	206	358	60	146	350	53	112	1480	150	238	1273	139
Arrive On Green	0.27	0.27	0.27	0.55	0.55	0.53	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	883	1314	220	803	1283	194	95	2268	230	278	1951	213
Grp Volume(v), veh/h	69	0	335	11	0	282	269	0	217	232	0	205
Grp Sat Flow(s),veh/h/ln	883	0	1533	803	0	1477	1429	0	1165	1261	0	1180
Q Serve(g_s), s	5.9	0.0	16.3	1.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.1	0.0	16.3	17.2	0.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.13	0.10		0.20	0.25		0.18
Lane Grp Cap(c), veh/h	206	0	418	146	0	403	982	0	760	879	0	770
V/C Ratio(X)	0.33	0.00	0.80	0.08	0.00	0.70	0.27	0.00	0.29	0.26	0.00	0.27
Avail Cap(c_a), veh/h	429	0	805	348	0	775	982	0	760	879	0	770
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.95	0.00	0.95	0.77	0.00	0.77
Uniform Delay (d), s/veh	32.7	0.0	27.1	24.4	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.4	0.1	0.0	0.8	0.7	0.0	0.9	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.0	0.2	0.0	4.5	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.1	0.0	28.5	24.4	0.0	16.7	0.7	0.0	0.9	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		404			293			486			437	
Approach Delay, s/veh		29.3			17.0			0.8			0.6	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		24.8		55.2		24.8		55.2
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		19.1		2.0		19.2		2.0
Green Ext Time (p_c), s		0.3		0.3		0.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	225	160	30	150	0	0	0	0	25	980	115
Future Volume (vph)	0	225	160	30	150	0	0	0	0	25	980	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1703			1815						4174	1117
Flt Permitted		1.00			0.91						1.00	1.00
Satd. Flow (perm)		1703			1657						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	245	174	33	163	0	0	0	0	27	1065	125
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	396	0	0	196	0	0	0	0	0	1092	125
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		796			774						1930	417
v/s Ratio Prot		c0.23									c0.26	
v/s Ratio Perm					0.12							0.11
v/c Ratio		0.50			0.25						0.57	0.30
Uniform Delay, d1		14.8			12.9						15.7	17.7
Progression Factor		0.84			0.87						0.38	0.46
Incremental Delay, d2		2.2			0.7						0.8	1.3
Delay (s)		14.5			11.8						6.7	9.3
Level of Service		B			B						A	A
Approach Delay (s)		14.5			11.8			0.0			7.0	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	150	0	0	110	105	65	1327	20	5	0	0
Future Volume (veh/h)	100	150	0	0	110	105	65	1327	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	102	153	0	0	112	107	66	1354	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	414	688	0	0	285	273	62	1338	21			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1048	1620	0	0	671	641	124	2677	41			
Grp Volume(v), veh/h	102	153	0	0	0	219	754	0	686			
Grp Sat Flow(s),veh/h/ln	1048	1620	0	0	0	1313	1422	0	1421			
Q Serve(g_s), s	3.7	1.4	0.0	0.0	0.0	9.3	40.0	0.0	38.4			
Cycle Q Clear(g_c), s	12.9	1.4	0.0	0.0	0.0	9.3	40.0	0.0	38.4			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	414	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.25	0.22	0.00	0.00	0.00	0.39	1.06	0.00	0.97			
Avail Cap(c_a), veh/h	414	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.6	3.6	0.0	0.0	0.0	16.0	33.4	0.0	32.7			
Incr Delay (d2), s/veh	1.4	0.7	0.0	0.0	0.0	2.1	51.0	0.0	26.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	0.7	0.0	0.0	0.0	3.7	25.8	0.0	20.3			
LnGrp Delay(d),s/veh	8.0	4.3	0.0	0.0	0.0	18.1	84.4	0.0	59.0			
LnGrp LOS	A	A				B	F		E			
Approach Vol, veh/h		255			219			1440				
Approach Delay, s/veh		5.8			18.1			72.3				
Approach LOS		A			B			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		14.9				11.3
Green Ext Time (p_c), s		0.0		2.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	57.3
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	300	55	50	235	65	35	326	35	35	291	65
Future Volume (veh/h)	75	300	55	50	235	65	35	326	35	35	291	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.90	0.99		0.90	0.94		0.88	0.97		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	82	326	60	54	255	71	38	354	38	38	316	71
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	331	452	83	212	422	117	150	1262	133	147	1101	242
Arrive On Green	0.37	0.37	0.36	0.73	0.73	0.73	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	930	1234	227	886	1152	321	175	2258	239	170	1970	433
Grp Volume(v), veh/h	82	0	386	54	0	326	236	0	194	237	0	188
Grp Sat Flow(s),veh/h/ln	930	0	1461	886	0	1473	1451	0	1220	1428	0	1144
Q Serve(g_s), s	5.7	0.0	18.2	4.0	0.0	8.5	0.0	0.0	11.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	18.2	22.2	0.0	8.5	10.1	0.0	11.0	11.3	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.16		0.20	0.16		0.38
Lane Grp Cap(c), veh/h	331	0	535	212	0	539	863	0	682	850	0	640
V/C Ratio(X)	0.25	0.00	0.72	0.25	0.00	0.60	0.27	0.00	0.28	0.28	0.00	0.29
Avail Cap(c_a), veh/h	479	0	767	353	0	773	863	0	682	850	0	640
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	1.00	0.00	1.00	0.94	0.00	0.94	0.96	0.00	0.96
Uniform Delay (d), s/veh	24.1	0.0	21.9	17.3	0.0	8.0	18.5	0.0	18.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.6	0.6	0.0	1.1	0.7	0.0	1.0	0.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.5	1.0	0.0	3.4	4.7	0.0	3.9	0.2	0.0	0.2
LnGrp Delay(d),s/veh	24.4	0.0	23.5	17.9	0.0	9.1	19.2	0.0	19.8	0.8	0.0	1.1
LnGrp LOS	C		C	B		A	B		B	A		A
Approach Vol, veh/h		468			380			430			425	
Approach Delay, s/veh		23.6			10.3			19.5			0.9	
Approach LOS		C			B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.3		47.7		32.3		47.7
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		20.2		13.0		24.2		13.3
Green Ext Time (p_c), s		4.1		3.7		3.8		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	320	55	75	210	0	0	0	0	115	945	150
Future Volume (vph)	0	320	55	75	210	0	0	0	0	115	945	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1575	1506						4303	1264
Flt Permitted		1.00	1.00	0.43	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	711	1506						4303	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	356	61	83	233	0	0	0	0	128	1050	167
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	356	27	83	233	0	0	0	0	0	1178	167
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	319	677						2022	483
v/s Ratio Prot		c0.21			0.15							
v/s Ratio Perm			0.02	0.12							0.27	0.13
v/c Ratio		0.47	0.05	0.26	0.34						0.58	0.35
Uniform Delay, d1		15.4	12.4	13.7	14.3						15.5	17.6
Progression Factor		1.00	1.00	0.93	0.95						0.40	0.48
Incremental Delay, d2		2.1	0.2	1.9	1.3						1.1	1.7
Delay (s)		17.5	12.6	14.6	15.0						7.3	10.1
Level of Service		B	B	B	B						A	B
Approach Delay (s)		16.8			14.9			0.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	265	0	0	200	40	90	1112	235	0	0	0
Future Volume (vph)	170	265	0	0	200	40	90	1112	235	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1447	1620			1385		1235	2495				
Flt Permitted	0.50	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	754	1620			1385		1235	2495				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	276	0	0	208	42	94	1158	245	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	177	276	0	0	241	0	94	1382	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	273	587			502		694	1403				
v/s Ratio Prot		0.17			0.17			c0.55				
v/s Ratio Perm	c0.23						0.08					
v/c Ratio	0.65	0.47			0.48		0.14	0.99				
Uniform Delay, d1	21.3	19.6			19.7		8.3	17.2				
Progression Factor	1.48	1.52			1.14		0.36	0.31				
Incremental Delay, d2	10.0	2.4			3.1		0.2	12.6				
Delay (s)	41.6	32.1			25.5		3.2	17.9				
Level of Service	D	C			C		A	B				
Approach Delay (s)		35.8			25.5			17.0			0.0	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	176	1350	45	80	15	0	0	35	10
Future Volume (vph)	0	0	0	176	1350	45	80	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3902			1382			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3902			1098			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	189	1452	48	86	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	189	1496	0	0	102	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2438			329			417	
v/s Ratio Prot					c0.38						0.03	
v/s Ratio Perm				0.15				c0.09				
v/c Ratio				0.24	0.61			0.31			0.10	
Uniform Delay, d1				6.6	9.1			21.6			20.2	
Progression Factor				0.37	0.30			1.05			1.00	
Incremental Delay, d2				0.6	1.0			2.3			0.5	
Delay (s)				3.1	3.7			24.9			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.6			24.9			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	1400	115	30	271	0	0	225	131
Future Volume (veh/h)	0	0	0	80	1400	115	30	271	0	0	225	131
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1606	0	0	1536	1555
Adj Flow Rate, veh/h				82	1443	119	31	279	0	0	232	135
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	0	0	2	2
Cap, veh/h				126	2359	201	106	839	0	0	550	294
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				215	4015	342	155	2559	0	0	1705	870
Grp Volume(v), veh/h				609	508	528	158	152	0	0	206	161
Grp Sat Flow(s),veh/h/ln				1594	1461	1517	1253	1388	0	0	1459	1039
Q Serve(g_s), s				28.2	25.3	25.3	1.1	3.6	0.0	0.0	10.5	11.6
Cycle Q Clear(g_c), s				28.2	25.3	25.3	12.8	3.6	0.0	0.0	10.5	11.6
Prop In Lane				0.13		0.23	0.20		0.00	0.00		0.84
Lane Grp Cap(c), veh/h				937	858	891	477	468	0	0	492	351
V/C Ratio(X)				0.65	0.59	0.59	0.33	0.32	0.00	0.00	0.42	0.46
Avail Cap(c_a), veh/h				937	858	891	477	468	0	0	492	351
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				24.7	23.5	23.5	9.4	9.2	0.0	0.0	28.2	28.8
Incr Delay (d2), s/veh				3.5	3.0	2.9	1.9	1.8	0.0	0.0	2.6	4.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.4	11.0	11.4	1.6	1.6	0.0	0.0	4.6	3.8
LnGrp Delay(d),s/veh				28.2	26.5	26.4	11.2	11.0	0.0	0.0	30.8	33.1
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1644			310			367	
Approach Delay, s/veh					27.1			11.1			31.8	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				14.8		30.2		13.6
Green Ext Time (p_c), s				2.3		7.2		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	375	1335	0	0	0	0	0	705	415
Future Volume (vph)	0	0	0	375	1335	0	0	0	0	0	705	415
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	399	1420	0	0	0	0	0	750	441
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	0	0	239	1580	0	0	0	0	0	750	422
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.19	0.39							c0.40
v/c Ratio				0.33	0.68						0.51	1.14
Uniform Delay, d1				8.9	11.8						20.5	26.0
Progression Factor				0.69	0.68						1.20	1.24
Incremental Delay, d2				0.9	1.1						1.1	88.3
Delay (s)				7.0	9.1						25.8	120.5
Level of Service				A	A						C	F
Approach Delay (s)		0.0			8.8			0.0			60.8	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	770	186	935	1282	0	0	0	0
Future Volume (vph)	0	0	0	0	770	186	935	1282	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3475				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3475				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	802	194	974	1335	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	23	23	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	802	174	464	1799	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.21		0.43	c0.52				
v/s Ratio Perm						0.15						
v/c Ratio					0.56	0.38	0.80	0.96				
Uniform Delay, d1					19.1	17.6	15.0	17.7				
Progression Factor					0.91	0.85	0.86	0.82				
Incremental Delay, d2					1.2	1.9	5.0	7.4				
Delay (s)					18.7	16.9	18.0	21.8				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			18.3			21.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1555	65	0	0	0	0	85	296	65	146	0
Future Volume (veh/h)	50	1555	65	0	0	0	0	85	296	65	146	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	52	1620	68				0	89	308	68	152	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	80	2682	115				0	540	436	345	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	146	4875	210				0	1440	1163	763	1304	0
Grp Volume(v), veh/h	504	793	443				0	89	308	68	152	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1367				0	1440	1163	763	1304	0
Q Serve(g_s), s	26.4	23.7	23.8				0.0	3.3	18.0	6.5	8.5	0.0
Cycle Q Clear(g_c), s	26.4	23.7	23.8				0.0	3.3	18.0	9.8	8.5	0.0
Prop In Lane	0.10		0.15				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1347	752				0	540	436	345	489	0
V/C Ratio(X)	0.65	0.59	0.59				0.00	0.16	0.71	0.20	0.31	0.00
Avail Cap(c_a), veh/h	779	1347	752				0	540	436	345	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	24.5	24.5				0.0	16.7	21.3	27.7	25.6	0.0
Incr Delay (d2), s/veh	4.1	1.9	3.4				0.0	0.7	9.3	1.3	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	8.4	9.7				0.0	1.4	6.9	1.5	3.3	0.0
LnGrp Delay(d),s/veh	29.7	26.3	27.8				0.0	17.3	30.5	29.0	27.3	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1740						397			220	
Approach Delay, s/veh		27.7						27.6			27.8	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				20.0		28.4		11.8
Green Ext Time (p_c), s				2.1		7.5		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	1675	45	0	0	0	0	180	125	115	150	0
Future Volume (veh/h)	191	1675	45	0	0	0	0	180	125	115	150	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1352	0
Adj Flow Rate, veh/h	199	1745	47				0	188	130	120	156	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	274	2587	639				0	512	432	284	453	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	487	4598	1135				0	1412	1191	550	1310	0
Grp Volume(v), veh/h	574	1370	47				0	188	130	135	141	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	630	1169	0
Q Serve(g_s), s	30.8	27.6	2.7				0.0	7.8	6.3	8.2	3.5	0.0
Cycle Q Clear(g_c), s	30.8	27.6	2.7				0.0	7.8	6.3	16.1	3.5	0.0
Prop In Lane	0.35		1.00				0.00		1.00	0.89		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	313	424	0
V/C Ratio(X)	0.73	0.66	0.07				0.00	0.37	0.30	0.43	0.33	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	313	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.8	25.5	15.4				0.0	18.8	18.2	11.5	7.5	0.0
Incr Delay (d2), s/veh	5.8	1.7	0.2				0.0	2.0	1.8	4.3	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	9.7	0.9				0.0	3.3	2.3	2.3	1.3	0.0
LnGrp Delay(d),s/veh	32.6	27.2	15.6				0.0	20.8	20.0	15.8	9.6	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		1991						318			276	
Approach Delay, s/veh		28.5						20.5			12.6	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				9.8		32.8		18.1
Green Ext Time (p_c), s				2.5		7.3		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1150	1030	0	0	0	0	0	0	346	753	0
Future Volume (vph)	0	1150	1030	0	0	0	0	0	0	346	753	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4462	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4462	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1186	1062	0	0	0	0	0	0	357	776	0
RTOR Reduction (vph)	0	39	39	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1678	492	0	0	0	0	0	0	321	812	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2342	517							506	1080	
v/s Ratio Prot		0.38								0.25	c0.30	
v/s Ratio Perm			c0.50									
v/c Ratio		0.72	0.95							0.63	0.75	
Uniform Delay, d1		14.5	18.0							19.3	20.6	
Progression Factor		0.42	0.42							0.73	0.77	
Incremental Delay, d2		1.3	22.6							5.3	4.3	
Delay (s)		7.4	30.2							19.4	20.1	
Level of Service		A	C							B	C	
Approach Delay (s)		12.8			0.0			0.0			19.9	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	810	680	0	0	0	0	0	1427	625	0	0	0
Future Volume (vph)	810	680	0	0	0	0	0	1427	625	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3800						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3800						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	835	701	0	0	0	0	0	1471	644	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	92	0	0	0
Lane Group Flow (vph)	611	895	0	0	0	0	0	1471	552	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.55	0.24							c0.50			
v/c Ratio	1.12	0.48						0.86	1.15			
Uniform Delay, d1	20.5	13.7						20.4	22.5			
Progression Factor	0.64	0.56						1.00	1.00			
Incremental Delay, d2	69.8	0.6						6.1	90.4			
Delay (s)	83.0	8.4						26.5	112.9			
Level of Service	F	A						C	F			
Approach Delay (s)		38.8			0.0			52.8			0.0	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	470	20	35	450	150	5	210	35	45	335	350
Future Volume (veh/h)	140	470	20	35	450	150	5	210	35	45	335	350
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1676	1710	1800	1664	1728	1800	1769	1711
Adj Flow Rate, veh/h	146	490	21	36	469	156	5	219	36	47	349	365
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	358	901	39	409	513	171	52	443	72	102	560	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1610	69	851	1191	396	8	1230	199	133	1556	1372
Grp Volume(v), veh/h	146	0	511	36	0	625	260	0	0	396	0	365
Grp Sat Flow(s),veh/h/ln	1597	0	1679	851	0	1587	1437	0	0	1689	0	1372
Q Serve(g_s), s	3.5	0.0	14.4	0.9	0.0	19.2	0.0	0.0	0.0	5.7	0.0	17.4
Cycle Q Clear(g_c), s	3.5	0.0	14.4	5.7	0.0	19.2	5.9	0.0	0.0	14.3	0.0	17.4
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	358	0	940	409	0	684	566	0	0	662	0	494
V/C Ratio(X)	0.41	0.00	0.54	0.09	0.00	0.91	0.46	0.00	0.00	0.60	0.00	0.74
Avail Cap(c_a), veh/h	365	0	940	409	0	684	566	0	0	662	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.82	0.00	0.82	0.94	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.8	0.0	10.4	4.0	0.0	4.3	7.6	0.0	0.0	19.8	0.0	20.9
Incr Delay (d2), s/veh	0.3	0.0	2.3	0.3	0.0	16.1	2.5	0.0	0.0	4.0	0.0	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.3	0.2	0.0	10.2	2.6	0.0	0.0	7.5	0.0	7.9
LnGrp Delay(d),s/veh	13.1	0.0	12.7	4.4	0.0	20.4	10.1	0.0	0.0	23.8	0.0	30.5
LnGrp LOS	B		B	A		C	B			C		C
Approach Vol, veh/h		657			661			260			761	
Approach Delay, s/veh		12.8			19.5			10.1			27.0	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.7	35.3		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		16.4		7.9	5.5	21.2		19.4
Green Ext Time (p_c), s		12.7		8.9	0.0	6.5		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	545	10	5	635	0	5
Future Volume (vph)	545	10	5	635	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1599			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1599			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	568	10	5	661	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	577	0	0	666	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	31.6			56.7	12.1	
Effective Green, g (s)	31.6			47.9	12.1	
Actuated g/C Ratio	0.42			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	673			1023	220	
v/s Ratio Prot	c0.36				c0.00	
v/s Ratio Perm				0.42		
v/c Ratio	0.86			0.65	0.00	
Uniform Delay, d1	19.7			8.4	26.4	
Progression Factor	0.80			0.65	1.00	
Incremental Delay, d2	11.5			0.1	0.0	
Delay (s)	27.2			5.6	26.4	
Level of Service	C			A	C	
Approach Delay (s)	27.2			5.6	26.4	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	545	0	0	640	5	15
Future Volume (vph)	545	0	0	640	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	606	0	0	711	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	606	0	0	711	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.7			31.6	16.3	
Effective Green, g (s)	43.7			31.6	16.3	
Actuated g/C Ratio	0.58			0.42	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	925			669	306	
v/s Ratio Prot	c0.38			c0.45	c0.01	
v/s Ratio Perm						
v/c Ratio	0.66			1.06	0.03	
Uniform Delay, d1	10.6			21.7	23.1	
Progression Factor	0.33			1.22	1.25	
Incremental Delay, d2	1.0			45.9	0.0	
Delay (s)	4.5			72.3	28.9	
Level of Service	A			E	C	
Approach Delay (s)	4.5			72.3	28.9	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	505	50	30	180	0	0	0	0	195	925	455
Future Volume (vph)	0	505	50	30	180	0	0	0	0	195	925	455
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2802			1791						2911	1244
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2802			1613						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	526	52	31	188	0	0	0	0	203	964	474
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	568	0	0	219	0	0	0	0	0	1167	474
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1270			731						1358	464
v/s Ratio Prot		c0.20									c0.40	
v/s Ratio Perm					0.14							c0.38
v/c Ratio		0.45			0.30						0.86	1.02
Uniform Delay, d1		14.1			13.0						17.8	23.5
Progression Factor		0.64			1.72						1.00	1.00
Incremental Delay, d2		0.9			0.9						7.3	47.4
Delay (s)		10.0			23.2						25.1	70.9
Level of Service		A			C						C	E
Approach Delay (s)		10.0			23.2			0.0			38.3	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	270	0	0	140	415	75	1250	40	0	0	0
Future Volume (veh/h)	425	270	0	0	140	415	75	1250	40	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	452	287	0	0	149	441	80	1330	43			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	526	888	0	0	518	417	91	1588	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	201	3504	1659			
Grp Volume(v), veh/h	452	287	0	0	149	441	755	655	43			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1895	1810	1659			
Q Serve(g_s), s	8.6	10.1	0.0	0.0	4.6	20.0	29.3	26.2	1.7			
Cycle Q Clear(g_c), s	8.6	10.1	0.0	0.0	4.6	20.0	29.3	26.2	1.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.11		1.00			
Lane Grp Cap(c), veh/h	526	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.86	0.32	0.00	0.00	0.29	1.06	0.88	0.80	0.06			
Avail Cap(c_a), veh/h	526	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.7	21.2	0.0	0.0	21.8	27.5	29.9	28.6	18.1			
Incr Delay (d2), s/veh	16.6	1.0	0.0	0.0	1.4	60.4	12.4	8.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.7	5.6	0.0	0.0	2.6	15.6	18.3	15.0	0.8			
LnGrp Delay(d),s/veh	46.3	22.1	0.0	0.0	23.2	87.9	42.2	36.6	18.3			
LnGrp LOS	D	C			C	F	D	D	B			
Approach Vol, veh/h		739			590			1453				
Approach Delay, s/veh		36.9			71.6			39.0				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		31.3		12.1			10.6	22.0
Green Ext Time (p_c), s		1.1		3.3			0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.3
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	340	25	20	240	35	10	200	25	25	365	20
Future Volume (veh/h)	40	340	25	20	240	35	10	200	25	25	365	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	370	27	22	261	38	11	217	27	27	397	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	222	483	35	176	435	63	62	645	78	74	694	37
Arrive On Green	0.34	0.34	0.33	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	872	1429	104	754	1286	187	20	1109	134	40	1192	64
Grp Volume(v), veh/h	43	0	397	22	0	299	255	0	0	446	0	0
Grp Sat Flow(s),veh/h/ln	872	0	1533	754	0	1473	1263	0	0	1296	0	0
Q Serve(g_s), s	3.3	0.0	17.3	2.1	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.8	0.0	17.3	19.5	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	222	0	518	176	0	498	785	0	0	805	0	0
V/C Ratio(X)	0.19	0.00	0.77	0.12	0.00	0.60	0.32	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	288	0	634	233	0	609	785	0	0	805	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.95	0.00	0.00	0.70	0.00	0.00
Uniform Delay (d), s/veh	28.8	0.0	22.2	39.2	0.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.5	0.3	0.0	1.1	1.0	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.9	0.5	0.0	6.1	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.3	0.0	26.7	39.5	0.0	29.6	1.0	0.0	0.0	1.9	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		440			321			255			446	
Approach Delay, s/veh		26.9			30.3			1.0			1.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.4		46.6		28.4		46.6
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		19.8		2.0		21.5		2.0
Green Ext Time (p_c), s		2.6		3.4		2.3		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	285	95	45	225	0	0	0	0	25	915	75
Future Volume (vph)	0	285	95	45	225	0	0	0	0	25	915	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1796						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	306	102	48	242	0	0	0	0	27	984	81
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	392	0	0	290	0	0	0	0	0	1011	81
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.23									c0.25	
v/s Ratio Perm					0.18							0.07
v/c Ratio		0.49			0.39						0.53	0.20
Uniform Delay, d1		14.2			13.4						14.2	16.0
Progression Factor		0.32			1.32						0.17	0.25
Incremental Delay, d2		2.1			1.2						0.6	0.6
Delay (s)		6.6			18.8						3.0	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.6			18.8			0.0			3.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	95	0	0	120	20	150	1080	10	0	0	0
Future Volume (veh/h)	215	95	0	0	120	20	150	1080	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1590	1620	1620	1545	1620			
Adj Flow Rate, veh/h	236	104	0	0	132	22	165	1187	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	370	524	0	0	393	66	185	1403	14			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1101	1573	0	0	1180	197	315	2391	23			
Grp Volume(v), veh/h	236	104	0	0	0	154	711	0	652			
Grp Sat Flow(s),veh/h/ln	1101	1573	0	0	0	1377	1359	0	1371			
Q Serve(g_s), s	15.9	4.5	0.0	0.0	0.0	6.3	38.3	0.0	34.1			
Cycle Q Clear(g_c), s	22.2	4.5	0.0	0.0	0.0	6.3	38.3	0.0	34.1			
Prop In Lane	1.00		0.00	0.00		0.14	0.23		0.02			
Lane Grp Cap(c), veh/h	370	524	0	0	0	459	797	0	804			
V/C Ratio(X)	0.64	0.20	0.00	0.00	0.00	0.34	0.89	0.00	0.81			
Avail Cap(c_a), veh/h	370	524	0	0	0	459	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	24.3	0.0	0.0	0.0	18.8	27.9	0.0	26.3			
Incr Delay (d2), s/veh	8.1	0.8	0.0	0.0	0.0	2.0	14.4	0.0	8.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	2.1	0.0	0.0	0.0	2.6	17.6	0.0	14.9			
LnGrp Delay(d),s/veh	43.4	25.1	0.0	0.0	0.0	20.8	42.3	0.0	35.0			
LnGrp LOS	D	C				C	D		C			
Approach Vol, veh/h		340			154			1363				
Approach Delay, s/veh		37.8			20.8			38.8				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		40.3		24.2				8.3
Green Ext Time (p_c), s		1.4		0.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	190	35	60	250	25	10	170	65	45	315	45
Future Volume (veh/h)	40	190	35	60	250	25	10	170	65	45	315	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.90	0.97		0.91	0.97		0.92	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1569	1555	1620	1580	1555
Adj Flow Rate, veh/h	44	209	38	66	275	27	11	187	71	49	346	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	200	384	70	259	420	41	61	564	206	111	649	88
Arrive On Green	0.31	0.31	0.31	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	890	1226	223	944	1342	132	19	929	340	95	1069	144
Grp Volume(v), veh/h	44	0	247	66	0	302	269	0	0	444	0	0
Grp Sat Flow(s),veh/h/ln	890	0	1448	944	0	1473	1288	0	0	1308	0	0
Q Serve(g_s), s	3.4	0.0	10.6	5.1	0.0	14.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.2	0.0	10.6	15.7	0.0	14.8	13.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.09	0.04		0.26	0.11		0.11
Lane Grp Cap(c), veh/h	200	0	454	259	0	462	831	0	0	847	0	0
V/C Ratio(X)	0.22	0.00	0.54	0.26	0.00	0.65	0.32	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	277	0	579	340	0	589	831	0	0	847	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.77	0.00	0.00	0.76	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	21.3	35.2	0.0	29.7	17.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.0	0.5	0.0	1.6	0.8	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.3	1.4	0.0	6.3	5.0	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.3	0.0	22.3	35.7	0.0	31.4	17.9	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		291			368			269			444	
Approach Delay, s/veh		23.7			32.1			17.9			1.8	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.5		48.5		26.5		48.5
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		20.2		15.3		17.7		2.0
Green Ext Time (p_c), s		2.1		3.4		2.4		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	150	90	115	250	0	0	0	0	75	845	120
Future Volume (vph)	0	150	90	115	250	0	0	0	0	75	845	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1648	1450						4227	1264
Flt Permitted		1.00	1.00	0.64	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1102	1450						4227	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	161	97	124	269	0	0	0	0	81	909	129
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	161	53	124	269	0	0	0	0	0	990	129
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	499	657						1950	465
v/s Ratio Prot		0.10			c0.19							
v/s Ratio Perm			0.05	0.11							0.23	0.10
v/c Ratio		0.22	0.10	0.25	0.41						0.51	0.28
Uniform Delay, d1		12.4	11.7	12.6	13.8						14.2	16.7
Progression Factor		1.82	3.49	0.69	0.76						1.63	1.51
Incremental Delay, d2		0.7	0.4	1.0	1.5						0.8	1.3
Delay (s)		23.4	41.3	9.7	11.9						23.9	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		30.1			11.2			0.0			24.2	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	185	0	0	270	135	95	1040	55	0	0	0
Future Volume (vph)	45	185	0	0	270	135	95	1040	55	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.95		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1326		1226	2455				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	494	1588			1326		1226	2455				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	195	0	0	284	142	100	1095	58	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	5	0	0	0	0
Lane Group Flow (vph)	47	195	0	0	402	0	100	1148	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	197	635			530		637	1276				
v/s Ratio Prot		0.12			c0.30			c0.47				
v/s Ratio Perm	0.10						0.08					
v/c Ratio	0.24	0.31			0.76		0.16	0.90				
Uniform Delay, d1	14.9	15.4			19.4		9.4	16.2				
Progression Factor	1.69	1.67			0.88		0.76	0.63				
Incremental Delay, d2	2.7	1.2			8.3		0.3	5.7				
Delay (s)	28.0	26.9			25.4		7.4	16.0				
Level of Service	C	C			C		A	B				
Approach Delay (s)		27.1			25.4			15.3			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	345	1350	20	80	5	0	0	30	10
Future Volume (vph)	0	0	0	345	1350	20	80	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3770			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3770			1035			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	383	1500	22	89	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	383	1520	0	0	95	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2362			303			406	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.31				c0.09				
v/c Ratio				0.50	0.64			0.31			0.09	
Uniform Delay, d1				7.6	8.8			20.6			19.2	
Progression Factor				0.28	0.30			0.65			1.00	
Incremental Delay, d2				1.4	0.8			2.5			0.4	
Delay (s)				3.6	3.4			16.0			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.5			16.0			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	150	1515	40	25	170	0	0	260	150
Future Volume (veh/h)	0	0	0	150	1515	40	25	170	0	0	260	150
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				169	1702	45	28	191	0	0	292	169
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				213	2295	62	54	231	0	0	264	153
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				372	4002	109	0	667	0	0	762	441
Grp Volume(v), veh/h				699	585	632	219	0	0	0	0	461
Grp Sat Flow(s),veh/h/ln				1539	1417	1527	667	0	0	0	0	1203
Q Serve(g_s), s				32.5	29.1	29.1	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				32.5	29.1	29.1	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.24		0.07	0.13		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	876	286	0	0	0	0	417
V/C Ratio(X)				0.79	0.72	0.72	0.77	0.00	0.00	0.00	0.00	1.11
Avail Cap(c_a), veh/h				882	813	876	286	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				26.1	24.8	24.8	26.6	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				7.2	5.5	5.1	17.7	0.0	0.0	0.0	0.0	75.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.6	12.6	13.5	5.6	0.0	0.0	0.0	0.0	17.4
LnGrp Delay(d),s/veh				33.4	30.2	29.9	44.3	0.0	0.0	0.0	0.0	108.9
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1916			219			461	
Approach Delay, s/veh					31.3			44.3			108.9	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		34.5		28.0
Green Ext Time (p_c), s				0.0		4.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.2
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	460	1445	0	0	0	0	0	760	410
Future Volume (vph)	0	0	0	460	1445	0	0	0	0	0	760	410
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	479	1505	0	0	0	0	0	792	427
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	287	1697	0	0	0	0	0	792	416
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.23	0.42							c0.40
v/c Ratio				0.44	0.79						0.49	1.03
Uniform Delay, d1				10.6	14.2						17.4	23.0
Progression Factor				0.71	0.64						1.61	1.58
Incremental Delay, d2				1.1	1.6						1.0	52.4
Delay (s)				8.6	10.7						29.1	88.9
Level of Service				A	B						C	F
Approach Delay (s)		0.0			10.4			0.0			50.0	
Approach LOS		A			B			A			D	

Intersection Summary				
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)		6.0
Intersection Capacity Utilization	111.3%	ICU Level of Service		H
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
15: Irwin & 3rd

Aegis San Rafael
Future (2020) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	995	230	910	1125	0	0	0	0
Future Volume (vph)	0	0	0	0	995	230	910	1125	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1082	250	989	1223	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	35	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1082	215	484	1708	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.30		0.46	c0.51				
v/s Ratio Perm						0.19						
v/c Ratio					0.83	0.52	0.82	0.90				
Uniform Delay, d1					21.9	18.9	13.4	14.7				
Progression Factor					0.79	0.66	0.78	0.75				
Incremental Delay, d2					4.6	3.4	7.5	4.7				
Delay (s)					21.8	15.9	17.9	15.7				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			20.7			16.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
16: Lindaro & 2nd

Aegis San Rafael
Future (2020) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1575	90	0	0	0	0	50	205	50	300	0
Future Volume (veh/h)	40	1575	90	0	0	0	0	50	205	50	300	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1694	97				0	54	220	54	323	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	60	2547	150				0	535	432	377	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	113	4775	281				0	1385	1117	776	1355	0
Grp Volume(v), veh/h	533	838	462				0	54	220	54	323	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1338				0	1385	1117	776	1355	0
Q Serve(g_s), s	26.8	24.1	24.1				0.0	1.9	11.3	1.7	7.7	0.0
Cycle Q Clear(g_c), s	26.8	24.1	24.1				0.0	1.9	11.3	3.5	7.7	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	713				0	535	432	377	524	0
V/C Ratio(X)	0.71	0.65	0.65				0.00	0.10	0.51	0.14	0.62	0.00
Avail Cap(c_a), veh/h	749	1294	713				0	535	432	377	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	24.3	24.4				0.0	14.7	17.6	5.9	6.1	0.0
Incr Delay (d2), s/veh	5.7	2.5	4.5				0.0	0.4	4.2	0.8	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	8.5	9.8				0.0	0.8	4.0	0.4	3.4	0.0
LnGrp Delay(d),s/veh	31.2	26.9	28.9				0.0	15.1	21.8	6.7	11.4	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1834						274			377	
Approach Delay, s/veh		28.6						20.5			10.8	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				13.3		28.8		9.7
Green Ext Time (p_c), s				2.7		6.2		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1675	35	0	0	0	0	95	45	120	235	0
Future Volume (veh/h)	125	1675	35	0	0	0	0	95	45	120	235	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	139	1861	39				0	106	50	133	261	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	178	2568	617				0	498	394	293	558	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	326	4698	1129				0	1333	1055	573	1555	0
Grp Volume(v), veh/h	593	1407	39				0	106	50	203	191	0
Grp Sat Flow(s),veh/h/ln	1392	1211	1129				0	1333	1055	927	1142	0
Q Serve(g_s), s	30.5	27.3	2.1				0.0	4.1	2.3	12.8	11.6	0.0
Cycle Q Clear(g_c), s	30.5	27.3	2.1				0.0	4.1	2.3	16.8	11.6	0.0
Prop In Lane	0.23		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	425	426	0
V/C Ratio(X)	0.78	0.71	0.06				0.00	0.21	0.13	0.48	0.45	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	425	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	25.1	14.8				0.0	16.0	15.5	29.0	25.7	0.0
Incr Delay (d2), s/veh	7.7	2.2	0.2				0.0	1.0	0.7	3.8	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	9.6	0.7				0.0	1.6	0.8	4.5	4.1	0.0
LnGrp Delay(d),s/veh	34.1	27.3	15.0				0.0	17.0	16.1	32.8	29.1	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		2039						156			394	
Approach Delay, s/veh		29.1						16.7			31.0	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				6.1		32.5		18.8
Green Ext Time (p_c), s				2.3		5.4		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1130	955	0	0	0	0	0	0	225	1035	0
Future Volume (vph)	0	1130	955	0	0	0	0	0	0	225	1035	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4381	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4381	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1202	1016	0	0	0	0	0	0	239	1101	0
RTOR Reduction (vph)	0	11	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1699	497	0	0	0	0	0	0	215	1125	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.39	c0.49							0.17	c0.42	
v/s Ratio Perm												
v/c Ratio		0.73	0.93							0.45	1.09	
Uniform Delay, d1		13.3	16.1							17.1	23.0	
Progression Factor		0.61	0.69							0.50	0.57	
Incremental Delay, d2		1.5	19.1							2.7	53.6	
Delay (s)		9.6	30.2							11.2	66.7	
Level of Service		A	C							B	E	
Approach Delay (s)		14.4			0.0			0.0			57.8	
Approach LOS		B			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	129.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: 101 NBOff Irwin/Irwin & 2nd

Aegis San Rafael
Future (2020) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	760	0	0	0	0	0	1330	455	0	0	0
Future Volume (vph)	590	760	0	0	0	0	0	1330	455	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	826	0	0	0	0	0	1446	495	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	464	969	0	0	0	0	0	1446	438	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.43	0.26							c0.41			
v/c Ratio	0.91	0.56						0.84	0.90			
Uniform Delay, d1	18.6	14.4						18.0	19.0			
Progression Factor	0.51	0.41						1.00	1.00			
Incremental Delay, d2	18.1	0.9						5.0	22.5			
Delay (s)	27.5	6.9						23.0	41.4			
Level of Service	C	A						C	D			
Approach Delay (s)		13.6			0.0			27.7			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
1: Lincoln & Mission

Aegis San Rafael
Future (2020) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	425	5	45	495	140	10	440	40	10	360	310
Future Volume (veh/h)	205	425	5	45	495	140	10	440	40	10	360	310
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1791	1728
Adj Flow Rate, veh/h	211	438	5	46	510	144	10	454	41	10	371	320
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	498	1012	12	506	604	170	53	864	79	52	571	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.94	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1686	19	904	1275	360	19	2657	243	17	1756	1295
Grp Volume(v), veh/h	211	0	443	46	0	654	279	0	226	381	0	320
Grp Sat Flow(s),veh/h/ln	1629	0	1706	904	0	1635	1579	0	1340	1773	0	1295
Q Serve(g_s), s	5.1	0.0	11.2	0.4	0.0	8.6	0.9	0.0	7.2	0.0	0.0	17.7
Cycle Q Clear(g_c), s	5.1	0.0	11.2	1.5	0.0	8.6	18.6	0.0	7.2	14.6	0.0	17.7
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.18	0.03		1.00
Lane Grp Cap(c), veh/h	498	0	1023	506	0	774	560	0	436	622	0	421
V/C Ratio(X)	0.42	0.00	0.43	0.09	0.00	0.84	0.50	0.00	0.52	0.61	0.00	0.76
Avail Cap(c_a), veh/h	536	0	1023	506	0	774	560	0	436	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.79	0.00	0.79	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	0.0	8.6	1.2	0.0	1.4	10.7	0.0	10.8	23.2	0.0	24.2
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.3	0.0	8.9	2.9	0.0	4.1	4.4	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	5.5	0.1	0.0	4.1	3.6	0.0	3.0	8.0	0.0	7.7
LnGrp Delay(d),s/veh	9.6	0.0	10.0	1.5	0.0	10.3	13.6	0.0	14.9	27.6	0.0	36.4
LnGrp LOS	A		A	A		B	B		B	C		D
Approach Vol, veh/h		654			700			505			701	
Approach Delay, s/veh		9.9			9.7			14.2			31.6	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	10.1	40.9		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		13.2		20.6	7.1	10.6		19.7
Green Ext Time (p_c), s		14.6		2.9	0.1	12.4		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	470	5	5	685	0	10
Future Volume (vph)	470	5	5	685	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	495	5	5	721	0	11
RTOR Reduction (vph)	1	0	0	0	9	0
Lane Group Flow (vph)	499	0	0	726	2	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	35.7			61.4	11.4	
Effective Green, g (s)	35.7			52.6	11.4	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	721			1063	194	
v/s Ratio Prot	c0.31				c0.00	
v/s Ratio Perm				c0.45		
v/c Ratio	0.69			0.68	0.01	
Uniform Delay, d1	17.8			8.5	29.4	
Progression Factor	0.66			0.78	1.00	
Incremental Delay, d2	5.0			0.2	0.0	
Delay (s)	16.7			6.8	29.5	
Level of Service	B			A	C	
Approach Delay (s)	16.7			6.8	29.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	480	0	0	690	5	15
Future Volume (vph)	480	0	0	690	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	533	0	0	767	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	533	0	0	767	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.1			35.7	16.9	
Effective Green, g (s)	47.1			35.7	16.9	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	934			708	298	
v/s Ratio Prot	c0.34			c0.48	c0.01	
v/s Ratio Perm						
v/c Ratio	0.57			1.08	0.03	
Uniform Delay, d1	10.2			22.1	25.1	
Progression Factor	0.15			1.08	0.95	
Incremental Delay, d2	0.6			52.1	0.0	
Delay (s)	2.2			76.0	23.9	
Level of Service	A			E	C	
Approach Delay (s)	2.2			76.0	23.9	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: Hetherton/101 SB Off Hetherton & Mission

Aegis San Rafael
Future (2020) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	455	40	30	165	0	0	0	0	290	1025	525
Future Volume (vph)	0	455	40	30	165	0	0	0	0	290	1025	525
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2834			1822						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2834			1639						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	474	42	31	172	0	0	0	0	302	1068	547
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	508	0	0	203	0	0	0	0	0	1370	547
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1133			655						1573	554
v/s Ratio Prot		c0.18									c0.46	
v/s Ratio Perm					0.12							c0.43
v/c Ratio		0.45			0.31						0.87	0.99
Uniform Delay, d1		17.5			16.4						16.6	22.3
Progression Factor		0.32			0.32						1.00	1.00
Incremental Delay, d2		1.1			1.0						6.9	35.3
Delay (s)		6.7			6.3						23.5	57.5
Level of Service		A			A						C	E
Approach Delay (s)		6.7			6.3			0.0			33.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
5: Irwin/101 NBOn Mission & Mission

Aegis San Rafael
Future (2020) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	345	0	0	130	425	70	1600	60	0	0	0
Future Volume (veh/h)	395	345	0	0	130	425	70	1600	60	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	403	352	0	0	133	434	71	1633	61			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	501	833	0	0	446	359	76	1832	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	152	3665	1670			
Grp Volume(v), veh/h	403	352	0	0	133	434	913	791	61			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1954	1863	1670			
Q Serve(g_s), s	6.1	6.0	0.0	0.0	4.5	18.0	36.9	33.0	2.5			
Cycle Q Clear(g_c), s	6.1	6.0	0.0	0.0	4.5	18.0	36.9	33.0	2.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	501	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.80	0.42	0.00	0.00	0.30	1.21	0.94	0.85	0.07			
Avail Cap(c_a), veh/h	501	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.6	7.5	0.0	0.0	25.8	31.0	32.1	30.5	17.7			
Incr Delay (d2), s/veh	12.9	1.6	0.0	0.0	1.7	117.5	16.8	9.5	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.3	3.5	0.0	0.0	2.6	19.6	24.5	19.5	1.2			
LnGrp Delay(d),s/veh	36.4	9.1	0.0	0.0	27.5	148.5	49.0	40.0	17.9			
LnGrp LOS	D	A			C	F	D	D	B			
Approach Vol, veh/h		755			567			1765				
Approach Delay, s/veh		23.7			120.1			43.9				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		38.9		8.0			8.1	20.0
Green Ext Time (p_c), s		0.0		3.5			1.3	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	280	45	10	240	35	25	410	40	60	335	35
Future Volume (veh/h)	70	280	45	10	240	35	25	410	40	60	335	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	74	298	48	11	255	37	27	436	43	64	356	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	204	366	59	143	357	52	107	1482	144	243	1255	131
Arrive On Green	0.28	0.28	0.27	0.55	0.55	0.54	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	875	1322	213	795	1291	187	90	2287	222	287	1935	202
Grp Volume(v), veh/h	74	0	346	11	0	292	280	0	226	241	0	216
Grp Sat Flow(s),veh/h/ln	875	0	1535	795	0	1478	1431	0	1166	1242	0	1182
Q Serve(g_s), s	6.4	0.0	16.8	1.0	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.1	0.0	16.8	17.8	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.13	0.10		0.19	0.27		0.17
Lane Grp Cap(c), veh/h	204	0	425	143	0	409	977	0	756	862	0	766
V/C Ratio(X)	0.36	0.00	0.81	0.08	0.00	0.71	0.29	0.00	0.30	0.28	0.00	0.28
Avail Cap(c_a), veh/h	422	0	806	340	0	776	977	0	756	862	0	766
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94	0.74	0.00	0.74
Uniform Delay (d), s/veh	33.0	0.0	27.1	24.4	0.0	15.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.1	0.0	0.9	0.7	0.0	1.0	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.3	0.2	0.0	4.6	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.4	0.0	28.5	24.5	0.0	16.5	0.7	0.0	1.0	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		420			303			506			457	
Approach Delay, s/veh		29.4			16.8			0.8			0.6	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.1		54.9		25.1		54.9
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		20.1		2.0		19.8		2.0
Green Ext Time (p_c), s		0.3		0.4		0.3		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		10.8
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	235	165	30	155	0	0	0	0	25	1030	120
Future Volume (vph)	0	235	165	30	155	0	0	0	0	25	1030	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1703			1816						4174	1117
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1703			1657						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	255	179	33	168	0	0	0	0	27	1120	130
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	414	0	0	201	0	0	0	0	0	1147	130
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		796			774						1930	417
v/s Ratio Prot		c0.24									c0.27	
v/s Ratio Perm					0.12							0.12
v/c Ratio		0.52			0.26						0.59	0.31
Uniform Delay, d1		15.0			12.9						15.9	17.8
Progression Factor		0.85			0.86						0.37	0.45
Incremental Delay, d2		2.4			0.6						0.9	1.2
Delay (s)		15.0			11.7						6.8	9.3
Level of Service		B			B						A	A
Approach Delay (s)		15.0			11.7			0.0			7.1	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.60			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2	
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	155	0	0	115	110	70	1385	20	5	0	0
Future Volume (veh/h)	105	155	0	0	115	110	70	1385	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	107	158	0	0	117	112	71	1413	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	405	688	0	0	285	273	64	1337	20			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1039	1620	0	0	671	642	128	2675	40			
Grp Volume(v), veh/h	107	158	0	0	0	229	788	0	716			
Grp Sat Flow(s),veh/h/ln	1039	1620	0	0	0	1312	1422	0	1421			
Q Serve(g_s), s	4.1	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Cycle Q Clear(g_c), s	13.9	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	405	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.26	0.23	0.00	0.00	0.00	0.41	1.11	0.00	1.01			
Avail Cap(c_a), veh/h	405	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.9	3.6	0.0	0.0	0.0	16.1	33.4	0.0	33.4			
Incr Delay (d2), s/veh	1.6	0.8	0.0	0.0	0.0	2.2	67.3	0.0	35.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	0.0	0.0	3.9	29.0	0.0	22.8			
LnGrp Delay(d),s/veh	8.5	4.3	0.0	0.0	0.0	18.4	100.7	0.0	69.3			
LnGrp LOS	A	A				B	F		F			
Approach Vol, veh/h		265			229			1504				
Approach Delay, s/veh		6.0			18.4			85.7				
Approach LOS		A			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		15.9				11.8
Green Ext Time (p_c), s		0.0		2.1				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	67.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	315	60	55	245	70	35	340	35	35	305	70
Future Volume (veh/h)	80	315	60	55	245	70	35	340	35	35	305	70
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	0.99		0.91	0.94		0.87	0.97		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	87	342	65	60	266	76	38	370	38	38	332	76
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	350	472	90	218	440	126	141	1233	125	137	1068	239
Arrive On Green	0.38	0.38	0.38	0.77	0.77	0.76	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	918	1227	233	872	1145	327	165	2280	230	158	1976	441
Grp Volume(v), veh/h	87	0	407	60	0	342	244	0	202	250	0	196
Grp Sat Flow(s),veh/h/ln	918	0	1460	872	0	1472	1454	0	1222	1436	0	1139
Q Serve(g_s), s	6.0	0.0	19.0	4.5	0.0	8.1	0.0	0.0	11.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	19.0	23.6	0.0	8.1	10.5	0.0	11.5	11.8	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.16		0.19	0.15		0.39
Lane Grp Cap(c), veh/h	350	0	561	218	0	566	838	0	661	828	0	616
V/C Ratio(X)	0.25	0.00	0.73	0.28	0.00	0.60	0.29	0.00	0.31	0.30	0.00	0.32
Avail Cap(c_a), veh/h	480	0	767	340	0	773	838	0	661	828	0	616
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	0.76	0.00	0.76	0.93	0.00	0.93	0.95	0.00	0.95
Uniform Delay (d), s/veh	22.7	0.0	21.0	16.2	0.0	6.7	19.4	0.0	19.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.5	0.0	0.8	0.8	0.0	1.1	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.9	1.1	0.0	3.2	4.9	0.0	4.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.0	0.0	22.9	16.7	0.0	7.5	20.2	0.0	20.9	0.9	0.0	1.3
LnGrp LOS	C		C	B		A	C		C	A		A
Approach Vol, veh/h		494			402			446			446	
Approach Delay, s/veh		22.9			8.8			20.5			1.1	
Approach LOS		C			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.7		46.3		33.7		46.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		21.0		13.5		25.6		13.8
Green Ext Time (p_c), s		4.4		3.9		4.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	60	80	220	0	0	0	0	120	990	155
Future Volume (vph)	0	335	60	80	220	0	0	0	0	120	990	155
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1578	1506						4303	1264
Flt Permitted		1.00	1.00	0.41	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	686	1506						4303	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	372	67	89	244	0	0	0	0	133	1100	172
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	372	30	89	244	0	0	0	0	0	1233	172
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	308	677						2022	483
v/s Ratio Prot		c0.22			0.16							
v/s Ratio Perm			0.03	0.13							0.29	0.14
v/c Ratio		0.49	0.06	0.29	0.36						0.61	0.36
Uniform Delay, d1		15.6	12.4	13.9	14.4						15.7	17.7
Progression Factor		1.00	1.00	0.93	0.95						0.39	0.47
Incremental Delay, d2		2.3	0.2	2.2	1.4						1.2	1.7
Delay (s)		17.9	12.7	15.2	15.1						7.4	9.9
Level of Service		B	B	B	B						A	A
Approach Delay (s)		17.1			15.2			0.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	275	0	0	210	40	95	1160	245	0	0	0
Future Volume (vph)	180	275	0	0	210	40	95	1160	245	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1448	1620			1387		1235	2495				
Flt Permitted	0.48	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	734	1620			1387		1235	2495				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	286	0	0	219	42	99	1208	255	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	188	286	0	0	252	0	99	1442	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	266	587			502		694	1403				
v/s Ratio Prot		0.18			0.18			c0.58				
v/s Ratio Perm	c0.26						0.08					
v/c Ratio	0.71	0.49			0.50		0.14	1.03				
Uniform Delay, d1	21.9	19.7			19.9		8.3	17.5				
Progression Factor	1.48	1.51			1.13		0.36	0.31				
Incremental Delay, d2	12.8	2.5			3.4		0.2	21.9				
Delay (s)	45.2	32.4			25.9		3.1	27.3				
Level of Service	D	C			C		A	C				
Approach Delay (s)		37.4			25.9			25.8			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	185	1410	45	85	15	0	0	35	10
Future Volume (vph)	0	0	0	185	1410	45	85	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3903			1381			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3903			1091			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	199	1516	48	91	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	199	1560	0	0	107	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2439			327			417	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.16				c0.10				
v/c Ratio				0.25	0.64			0.33			0.10	
Uniform Delay, d1				6.7	9.4			21.7			20.2	
Progression Factor				0.35	0.27			1.06			1.00	
Incremental Delay, d2				0.6	1.0			2.5			0.5	
Delay (s)				2.9	3.5			25.4			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.4			25.4			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	1465	120	30	280	0	0	235	135
Future Volume (veh/h)	0	0	0	85	1465	120	30	280	0	0	235	135
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1606	1620	1620	1536	1555
Adj Flow Rate, veh/h				88	1510	124	31	289	0	0	242	139
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	1	2	2	2
Cap, veh/h				129	2357	200	103	840	0	0	551	292
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				220	4012	340	146	2562	0	0	1711	866
Grp Volume(v), veh/h				637	531	553	163	157	0	0	214	167
Grp Sat Flow(s),veh/h/ln				1594	1461	1517	1247	1388	0	0	1459	1041
Q Serve(g_s), s				29.7	26.7	26.7	1.2	3.8	0.0	0.0	11.0	12.1
Cycle Q Clear(g_c), s				29.7	26.7	26.7	13.3	3.8	0.0	0.0	11.0	12.1
Prop In Lane				0.14		0.22	0.19		0.00	0.00		0.83
Lane Grp Cap(c), veh/h				937	858	892	474	468	0	0	492	351
V/C Ratio(X)				0.68	0.62	0.62	0.34	0.33	0.00	0.00	0.43	0.48
Avail Cap(c_a), veh/h				937	858	892	474	468	0	0	492	351
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.3	24.0	24.1	9.4	9.2	0.0	0.0	28.4	29.0
Incr Delay (d2), s/veh				4.0	3.3	3.2	2.0	1.9	0.0	0.0	2.8	4.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.2	11.6	12.0	1.7	1.6	0.0	0.0	4.8	3.9
LnGrp Delay(d),s/veh				29.3	27.4	27.3	11.4	11.1	0.0	0.0	31.2	33.5
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1722			320			381	
Approach Delay, s/veh					28.1			11.3			32.2	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				15.3		31.7		14.1
Green Ext Time (p_c), s				2.4		7.2		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	390	1400	0	0	0	0	0	730	445
Future Volume (vph)	0	0	0	390	1400	0	0	0	0	0	730	445
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	415	1489	0	0	0	0	0	777	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	249	1655	0	0	0	0	0	777	457
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.20	0.41							c0.43
v/c Ratio				0.35	0.71						0.52	1.24
Uniform Delay, d1				9.0	12.2						20.7	26.0
Progression Factor				0.68	0.67						1.18	1.22
Incremental Delay, d2				0.9	1.2						1.1	125.1
Delay (s)				7.0	9.4						25.6	156.8
Level of Service				A	A						C	F
Approach Delay (s)		0.0			9.1			0.0			75.2	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	805	195	980	1340	0	0	0	0
Future Volume (vph)	0	0	0	0	805	195	980	1340	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3474				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3474				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	839	203	1021	1396	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	20	20	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	839	186	490	1887	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.22		0.45	c0.54				
v/s Ratio Perm						0.16						
v/c Ratio					0.58	0.41	0.85	1.01				
Uniform Delay, d1					19.4	17.8	15.7	18.5				
Progression Factor					0.92	0.87	0.89	0.84				
Incremental Delay, d2					1.4	2.2	5.5	14.9				
Delay (s)					19.2	17.7	19.5	30.4				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			18.9			28.1			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1630	70	0	0	0	0	90	310	70	150	0
Future Volume (veh/h)	50	1630	70	0	0	0	0	90	310	70	150	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	52	1698	73				0	94	323	73	156	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	77	2682	118				0	540	436	338	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	139	4876	215				0	1440	1163	749	1304	0
Grp Volume(v), veh/h	528	831	464				0	94	323	73	156	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1366				0	1440	1163	749	1304	0
Q Serve(g_s), s	27.9	25.0	25.0				0.0	3.5	19.2	7.2	8.7	0.0
Cycle Q Clear(g_c), s	27.9	25.0	25.0				0.0	3.5	19.2	10.7	8.7	0.0
Prop In Lane	0.10		0.16				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1346	751				0	540	436	338	489	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.17	0.74	0.22	0.32	0.00
Avail Cap(c_a), veh/h	779	1346	751				0	540	436	338	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	25.0	25.0				0.0	16.7	21.6	28.2	25.7	0.0
Incr Delay (d2), s/veh	4.7	2.1	3.8				0.0	0.7	10.8	1.5	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	8.9	10.2				0.0	1.5	7.4	1.6	3.4	0.0
LnGrp Delay(d),s/veh	30.8	27.1	28.8				0.0	17.4	32.4	29.6	27.4	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1823						417			229	
Approach Delay, s/veh		28.6						29.0			28.1	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				21.2		29.9		12.7
Green Ext Time (p_c), s				2.0		7.4		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1750	45	0	0	0	0	190	130	120	155	0
Future Volume (veh/h)	200	1750	45	0	0	0	0	190	130	120	155	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1352	0
Adj Flow Rate, veh/h	208	1823	47				0	198	135	125	161	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	274	2586	639				0	512	432	279	449	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	487	4598	1135				0	1412	1191	535	1299	0
Grp Volume(v), veh/h	599	1432	47				0	198	135	139	147	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	604	1169	0
Q Serve(g_s), s	32.4	29.1	2.7				0.0	8.3	6.5	9.1	3.7	0.0
Cycle Q Clear(g_c), s	32.4	29.1	2.7				0.0	8.3	6.5	17.4	3.7	0.0
Prop In Lane	0.35		1.00				0.00		1.00	0.90		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	305	424	0
V/C Ratio(X)	0.76	0.69	0.07				0.00	0.39	0.31	0.46	0.35	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	305	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.4	26.1	15.4				0.0	18.9	18.3	12.0	7.5	0.0
Incr Delay (d2), s/veh	6.8	1.9	0.2				0.0	2.2	1.9	4.9	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	10.2	0.9				0.0	3.6	2.4	2.5	1.4	0.0
LnGrp Delay(d),s/veh	34.2	28.0	15.6				0.0	21.1	20.2	16.9	9.8	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		2078						333			286	
Approach Delay, s/veh		29.5						20.7			13.2	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				10.3		34.4		19.4
Green Ext Time (p_c), s				2.7		6.7		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

HCM Signalized Intersection Capacity Analysis
18: 101 SBOn 2nd/Hetherton & 2nd

Aegis San Rafael
Future (2020) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1205	1075	0	0	0	0	0	0	360	785	0
Future Volume (vph)	0	1205	1075	0	0	0	0	0	0	360	785	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4463	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4463	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1242	1108	0	0	0	0	0	0	371	809	0
RTOR Reduction (vph)	0	35	35	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1761	519	0	0	0	0	0	0	334	846	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2343	517							506	1080	
v/s Ratio Prot		0.39								0.26	c0.31	
v/s Ratio Perm			c0.53									
v/c Ratio		0.86dr	1.00							0.66	0.78	
Uniform Delay, d1		14.9	19.0							19.6	21.0	
Progression Factor		0.47	0.47							0.73	0.77	
Incremental Delay, d2		1.6	34.0							5.8	5.0	
Delay (s)		8.6	42.9							20.0	21.1	
Level of Service		A	D							C	C	
Approach Delay (s)		16.7			0.0			0.0			20.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: 101 NBOff Irwin/Irwin & 2nd

Aegis San Rafael
Future (2020) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	845	710	0	0	0	0	0	1495	655	0	0	0
Future Volume (vph)	845	710	0	0	0	0	0	1495	655	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3801						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3801						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	871	732	0	0	0	0	0	1541	675	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	84	0	0	0
Lane Group Flow (vph)	638	935	0	0	0	0	0	1541	591	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.40				
v/s Ratio Perm	c0.57	0.25							c0.54			
v/c Ratio	1.17	0.50						0.91	1.23			
Uniform Delay, d1	20.5	13.9						21.0	22.5			
Progression Factor	0.63	0.56						1.00	1.00			
Incremental Delay, d2	88.4	0.7						8.4	122.0			
Delay (s)	101.4	8.5						29.4	144.5			
Level of Service	F	A						C	F			
Approach Delay (s)		46.3			0.0			64.5			0.0	
Approach LOS		D			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	473	20	35	457	151	6	210	35	45	335	351
Future Volume (veh/h)	140	473	20	35	457	151	6	210	35	45	335	351
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1677	1710	1800	1663	1728	1800	1769	1711
Adj Flow Rate, veh/h	146	493	21	36	476	157	6	219	36	47	349	366
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	345	902	38	406	515	170	53	441	71	102	560	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1610	69	849	1194	394	11	1225	198	133	1556	1372
Grp Volume(v), veh/h	146	0	514	36	0	633	261	0	0	396	0	366
Grp Sat Flow(s),veh/h/ln	1597	0	1679	849	0	1588	1433	0	0	1689	0	1372
Q Serve(g_s), s	3.5	0.0	14.6	0.9	0.0	20.4	0.0	0.0	0.0	5.7	0.0	17.5
Cycle Q Clear(g_c), s	3.5	0.0	14.6	5.8	0.0	20.4	6.0	0.0	0.0	14.3	0.0	17.5
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	345	0	940	406	0	684	565	0	0	662	0	494
V/C Ratio(X)	0.42	0.00	0.55	0.09	0.00	0.92	0.46	0.00	0.00	0.60	0.00	0.74
Avail Cap(c_a), veh/h	353	0	940	406	0	684	565	0	0	662	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.81	0.00	0.81	0.94	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	10.5	4.1	0.0	4.4	7.6	0.0	0.0	19.8	0.0	20.9
Incr Delay (d2), s/veh	0.3	0.0	2.3	0.3	0.0	17.4	2.6	0.0	0.0	4.0	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.3	0.2	0.0	10.9	2.7	0.0	0.0	7.5	0.0	7.9
LnGrp Delay(d),s/veh	13.6	0.0	12.8	4.4	0.0	21.8	10.2	0.0	0.0	23.8	0.0	30.6
LnGrp LOS	B		B	A		C	B			C		C
Approach Vol, veh/h		660			669			261			762	
Approach Delay, s/veh		12.9			20.8			10.2			27.1	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.7	35.3		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		16.6		8.0	5.5	22.4		19.5
Green Ext Time (p_c), s		12.8		8.9	0.0	5.9		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	548	10	5	643	0	5
Future Volume (vph)	548	10	5	643	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1599			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1599			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	571	10	5	670	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	580	0	0	675	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	31.6			56.7	12.1	
Effective Green, g (s)	31.6			47.9	12.1	
Actuated g/C Ratio	0.42			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	673			1023	220	
v/s Ratio Prot	c0.36				c0.00	
v/s Ratio Perm				0.42		
v/c Ratio	0.86			0.66	0.00	
Uniform Delay, d1	19.7			8.5	26.4	
Progression Factor	0.80			0.69	1.00	
Incremental Delay, d2	11.8			0.1	0.0	
Delay (s)	27.5			6.0	26.4	
Level of Service	C			A	C	
Approach Delay (s)	27.5			6.0	26.4	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	548	0	0	648	5	15
Future Volume (vph)	548	0	0	648	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	609	0	0	720	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	609	0	0	720	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.7			31.6	16.3	
Effective Green, g (s)	43.7			31.6	16.3	
Actuated g/C Ratio	0.58			0.42	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	925			669	306	
v/s Ratio Prot	c0.38			c0.45	c0.01	
v/s Ratio Perm						
v/c Ratio	0.66			1.08	0.03	
Uniform Delay, d1	10.6			21.7	23.1	
Progression Factor	0.34			1.21	1.25	
Incremental Delay, d2	1.0			50.4	0.0	
Delay (s)	4.6			76.8	28.9	
Level of Service	A			E	C	
Approach Delay (s)	4.6			76.8	28.9	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	506	51	30	185	0	0	0	0	195	925	458
Future Volume (vph)	0	506	51	30	185	0	0	0	0	195	925	458
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2802			1791						2911	1244
Flt Permitted		1.00			0.90						0.99	1.00
Satd. Flow (perm)		2802			1616						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	527	53	31	193	0	0	0	0	203	964	477
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	570	0	0	224	0	0	0	0	0	1167	477
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1270			732						1358	464
v/s Ratio Prot		c0.20									c0.40	
v/s Ratio Perm					0.14							c0.38
v/c Ratio		0.45			0.31						0.86	1.03
Uniform Delay, d1		14.1			13.0						17.8	23.5
Progression Factor		0.65			1.69						1.00	1.00
Incremental Delay, d2		0.9			0.9						7.3	49.1
Delay (s)		10.0			22.9						25.1	72.6
Level of Service		B			C						C	E
Approach Delay (s)		10.0			22.9			0.0			38.9	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	426	270	0	0	141	415	79	1250	40	0	0	0
Future Volume (veh/h)	426	270	0	0	141	415	79	1250	40	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	453	287	0	0	150	441	84	1330	43			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	525	888	0	0	518	417	95	1584	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	210	3494	1659			
Grp Volume(v), veh/h	453	287	0	0	150	441	757	657	43			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1894	1810	1659			
Q Serve(g_s), s	8.7	10.1	0.0	0.0	4.6	20.0	29.4	26.3	1.7			
Cycle Q Clear(g_c), s	8.7	10.1	0.0	0.0	4.6	20.0	29.4	26.3	1.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.11		1.00			
Lane Grp Cap(c), veh/h	525	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.86	0.32	0.00	0.00	0.29	1.06	0.88	0.80	0.06			
Avail Cap(c_a), veh/h	525	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.7	21.2	0.0	0.0	21.9	27.5	29.9	28.6	18.1			
Incr Delay (d2), s/veh	16.9	1.0	0.0	0.0	1.4	60.4	12.6	8.1	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.7	5.6	0.0	0.0	2.7	15.6	18.4	15.1	0.8			
LnGrp Delay(d),s/veh	46.6	22.1	0.0	0.0	23.3	87.9	42.5	36.7	18.3			
LnGrp LOS	D	C			C	F	D	D	B			
Approach Vol, veh/h		740			591			1457				
Approach Delay, s/veh		37.1			71.5			39.2				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		31.4		12.1			10.7	22.0
Green Ext Time (p_c), s		1.0		3.3			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	340	25	20	240	35	10	201	25	25	365	20
Future Volume (veh/h)	40	340	25	20	240	35	10	201	25	25	365	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	370	27	22	261	38	11	218	27	27	397	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	222	483	35	176	435	63	62	646	77	74	694	37
Arrive On Green	0.34	0.34	0.33	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	872	1429	104	754	1286	187	20	1110	133	40	1192	64
Grp Volume(v), veh/h	43	0	397	22	0	299	256	0	0	446	0	0
Grp Sat Flow(s),veh/h/ln	872	0	1533	754	0	1473	1263	0	0	1296	0	0
Q Serve(g_s), s	3.3	0.0	17.3	2.1	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.8	0.0	17.3	19.5	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	222	0	518	176	0	498	785	0	0	805	0	0
V/C Ratio(X)	0.19	0.00	0.77	0.12	0.00	0.60	0.33	0.00	0.00	0.55	0.00	0.00
Avail Cap(c_a), veh/h	288	0	634	233	0	609	785	0	0	805	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.95	0.00	0.00	0.70	0.00	0.00
Uniform Delay (d), s/veh	28.8	0.0	22.2	39.2	0.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.5	0.3	0.0	1.1	1.0	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	7.9	0.5	0.0	6.1	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.3	0.0	26.7	39.5	0.0	29.6	1.0	0.0	0.0	1.9	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		440			321			256			446	
Approach Delay, s/veh		26.9			30.3			1.0			1.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.4		46.6		28.4		46.6
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		19.8		2.0		21.5		2.0
Green Ext Time (p_c), s		2.6		3.4		2.3		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	285	95	45	225	0	0	0	0	25	916	75
Future Volume (vph)	0	285	95	45	225	0	0	0	0	25	916	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1796						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	306	102	48	242	0	0	0	0	27	985	81
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	392	0	0	290	0	0	0	0	0	1012	81
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.23									c0.25	
v/s Ratio Perm					0.18							0.07
v/c Ratio		0.49			0.39						0.53	0.20
Uniform Delay, d1		14.2			13.4						14.2	16.0
Progression Factor		0.32			1.32						0.17	0.25
Incremental Delay, d2		2.1			1.2						0.6	0.6
Delay (s)		6.6			18.8						3.0	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.6			18.8			0.0			3.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	95	0	0	120	20	150	1084	10	0	0	0
Future Volume (veh/h)	215	95	0	0	120	20	150	1084	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1590	1620	1620	1545	1620			
Adj Flow Rate, veh/h	236	104	0	0	132	22	165	1191	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	370	524	0	0	393	66	184	1403	14			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1101	1573	0	0	1180	197	314	2392	23			
Grp Volume(v), veh/h	236	104	0	0	0	154	713	0	654			
Grp Sat Flow(s),veh/h/ln	1101	1573	0	0	0	1377	1359	0	1371			
Q Serve(g_s), s	15.9	4.5	0.0	0.0	0.0	6.3	38.4	0.0	34.2			
Cycle Q Clear(g_c), s	22.2	4.5	0.0	0.0	0.0	6.3	38.4	0.0	34.2			
Prop In Lane	1.00		0.00	0.00		0.14	0.23		0.02			
Lane Grp Cap(c), veh/h	370	524	0	0	0	459	797	0	804			
V/C Ratio(X)	0.64	0.20	0.00	0.00	0.00	0.34	0.89	0.00	0.81			
Avail Cap(c_a), veh/h	370	524	0	0	0	459	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	24.3	0.0	0.0	0.0	18.8	28.0	0.0	26.3			
Incr Delay (d2), s/veh	8.1	0.8	0.0	0.0	0.0	2.0	14.6	0.0	8.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	2.1	0.0	0.0	0.0	2.6	17.7	0.0	15.0			
LnGrp Delay(d),s/veh	43.4	25.1	0.0	0.0	0.0	20.8	42.6	0.0	35.1			
LnGrp LOS	D	C				C	D		D			
Approach Vol, veh/h		340			154			1367				
Approach Delay, s/veh		37.8			20.8			39.0				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		40.4		24.2				8.3
Green Ext Time (p_c), s		1.3		0.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	190	35	60	250	25	10	171	65	45	315	45
Future Volume (veh/h)	40	190	35	60	250	25	10	171	65	45	315	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.90	0.97		0.91	0.97		0.92	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1569	1555	1620	1580	1555
Adj Flow Rate, veh/h	44	209	38	66	275	27	11	188	71	49	346	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	200	384	70	259	420	41	61	565	206	111	649	88
Arrive On Green	0.31	0.31	0.31	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	890	1226	223	944	1342	132	19	931	339	95	1069	144
Grp Volume(v), veh/h	44	0	247	66	0	302	270	0	0	444	0	0
Grp Sat Flow(s),veh/h/ln	890	0	1448	944	0	1473	1288	0	0	1308	0	0
Q Serve(g_s), s	3.4	0.0	10.6	5.1	0.0	14.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.2	0.0	10.6	15.7	0.0	14.8	13.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.09	0.04		0.26	0.11		0.11
Lane Grp Cap(c), veh/h	200	0	454	259	0	462	832	0	0	847	0	0
V/C Ratio(X)	0.22	0.00	0.54	0.26	0.00	0.65	0.32	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	277	0	579	340	0	589	832	0	0	847	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.76	0.00	0.00	0.76	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	21.3	35.2	0.0	29.7	17.1	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.0	0.5	0.0	1.6	0.8	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.3	1.4	0.0	6.3	5.0	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.3	0.0	22.3	35.7	0.0	31.4	17.9	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		291			368			270			444	
Approach Delay, s/veh		23.7			32.1			17.9			1.8	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.5		48.5		26.5		48.5
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		20.2		15.3		17.7		2.0
Green Ext Time (p_c), s		2.1		3.4		2.4		3.6

Intersection Summary		
HCM 2010 Ctrl Delay		17.7
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	150	90	115	250	0	0	0	0	75	846	120
Future Volume (vph)	0	150	90	115	250	0	0	0	0	75	846	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1648	1450						4227	1264
Flt Permitted		1.00	1.00	0.64	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1102	1450						4227	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	161	97	124	269	0	0	0	0	81	910	129
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	161	53	124	269	0	0	0	0	0	991	129
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	499	657						1950	465
v/s Ratio Prot		0.10			c0.19							
v/s Ratio Perm			0.05	0.11							0.23	0.10
v/c Ratio		0.22	0.10	0.25	0.41						0.51	0.28
Uniform Delay, d1		12.4	11.7	12.6	13.8						14.2	16.7
Progression Factor		1.82	3.49	0.69	0.76						1.63	1.51
Incremental Delay, d2		0.7	0.4	1.0	1.5						0.8	1.3
Delay (s)		23.3	41.3	9.7	11.9						24.0	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		30.1			11.2			0.0			24.3	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	82.9%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	185	0	0	270	135	95	1044	55	0	0	0
Future Volume (vph)	45	185	0	0	270	135	95	1044	55	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.95		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1326		1226	2455				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	494	1588			1326		1226	2455				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	195	0	0	284	142	100	1099	58	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	5	0	0	0	0
Lane Group Flow (vph)	47	195	0	0	402	0	100	1152	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	197	635			530		637	1276				
v/s Ratio Prot		0.12			c0.30			c0.47				
v/s Ratio Perm	0.10						0.08					
v/c Ratio	0.24	0.31			0.76		0.16	0.90				
Uniform Delay, d1	14.9	15.4			19.4		9.4	16.3				
Progression Factor	1.69	1.67			0.88		0.76	0.63				
Incremental Delay, d2	2.7	1.2			8.3		0.3	5.8				
Delay (s)	28.0	26.9			25.4		7.4	16.2				
Level of Service	C	C			C		A	B				
Approach Delay (s)		27.1			25.4			15.5			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	345	1350	20	80	5	0	0	30	10
Future Volume (vph)	0	0	0	345	1350	20	80	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3770			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3770			1035			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	383	1500	22	89	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	383	1520	0	0	95	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2362			303			406	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.31				c0.09				
v/c Ratio				0.50	0.64			0.31			0.09	
Uniform Delay, d1				7.6	8.8			20.6			19.2	
Progression Factor				0.28	0.30			0.65			1.00	
Incremental Delay, d2				1.4	0.8			2.5			0.4	
Delay (s)				3.6	3.4			16.0			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.5			16.0			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	150	1515	40	25	171	0	0	260	150
Future Volume (veh/h)	0	0	0	150	1515	40	25	171	0	0	260	150
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				169	1702	45	28	192	0	0	292	169
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				213	2295	62	54	231	0	0	264	153
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				372	4002	109	0	668	0	0	762	441
Grp Volume(v), veh/h				699	585	632	220	0	0	0	0	461
Grp Sat Flow(s),veh/h/ln				1539	1417	1527	668	0	0	0	0	1203
Q Serve(g_s), s				32.5	29.1	29.1	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				32.5	29.1	29.1	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.24		0.07	0.13		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	876	286	0	0	0	0	417
V/C Ratio(X)				0.79	0.72	0.72	0.77	0.00	0.00	0.00	0.00	1.11
Avail Cap(c_a), veh/h				882	813	876	286	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				26.1	24.8	24.8	26.6	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				7.2	5.5	5.1	18.0	0.0	0.0	0.0	0.0	75.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.6	12.6	13.5	5.7	0.0	0.0	0.0	0.0	17.4
LnGrp Delay(d),s/veh				33.4	30.2	29.9	44.6	0.0	0.0	0.0	0.0	108.9
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1916			220			461	
Approach Delay, s/veh					31.3			44.6			108.9	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		34.5		28.0
Green Ext Time (p_c), s				0.0		4.9		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		46.2
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	460	1445	0	0	0	0	0	761	410
Future Volume (vph)	0	0	0	460	1445	0	0	0	0	0	761	410
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	479	1505	0	0	0	0	0	793	427
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	287	1697	0	0	0	0	0	793	416
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.23	0.42							c0.40
v/c Ratio				0.44	0.79						0.49	1.03
Uniform Delay, d1				10.6	14.2						17.4	23.0
Progression Factor				0.71	0.64						1.61	1.58
Incremental Delay, d2				1.1	1.6						1.0	52.4
Delay (s)				8.6	10.7						29.1	88.9
Level of Service				A	B						C	F
Approach Delay (s)		0.0			10.4			0.0			50.0	
Approach LOS		A			B			A			D	

Intersection Summary				
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio	0.89			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)		6.0
Intersection Capacity Utilization	111.3%	ICU Level of Service		H
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	995	231	910	1128	0	0	0	0
Future Volume (vph)	0	0	0	0	995	231	910	1128	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1082	251	989	1226	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	35	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1082	216	484	1711	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.30		0.46	c0.51				
v/s Ratio Perm						0.19						
v/c Ratio					0.83	0.52	0.82	0.90				
Uniform Delay, d1					21.9	18.9	13.4	14.7				
Progression Factor					0.79	0.66	0.78	0.75				
Incremental Delay, d2					4.6	3.4	7.5	4.8				
Delay (s)					21.8	15.9	17.9	15.8				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			20.7			16.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1575	90	0	0	0	0	50	206	50	300	0
Future Volume (veh/h)	40	1575	90	0	0	0	0	50	206	50	300	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1694	97				0	54	222	54	323	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	60	2547	150				0	535	432	376	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	113	4775	281				0	1385	1117	775	1355	0
Grp Volume(v), veh/h	533	838	462				0	54	222	54	323	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1338				0	1385	1117	775	1355	0
Q Serve(g_s), s	26.8	24.1	24.1				0.0	1.9	11.4	1.7	7.7	0.0
Cycle Q Clear(g_c), s	26.8	24.1	24.1				0.0	1.9	11.4	3.5	7.7	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	713				0	535	432	376	524	0
V/C Ratio(X)	0.71	0.65	0.65				0.00	0.10	0.51	0.14	0.62	0.00
Avail Cap(c_a), veh/h	749	1294	713				0	535	432	376	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	24.3	24.4				0.0	14.7	17.6	5.9	6.1	0.0
Incr Delay (d2), s/veh	5.7	2.5	4.5				0.0	0.4	4.3	0.8	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	8.5	9.8				0.0	0.8	4.0	0.4	3.4	0.0
LnGrp Delay(d),s/veh	31.2	26.9	28.9				0.0	15.1	21.9	6.7	11.4	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1834						276			377	
Approach Delay, s/veh		28.6						20.6			10.8	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				13.4		28.8		9.7
Green Ext Time (p_c), s				2.7		6.2		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.0
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	1675	35	0	0	0	0	95	45	120	235	0
Future Volume (veh/h)	126	1675	35	0	0	0	0	95	45	120	235	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	140	1861	39				0	106	50	133	261	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	180	2567	617				0	498	394	293	558	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	329	4695	1129				0	1333	1055	573	1555	0
Grp Volume(v), veh/h	593	1408	39				0	106	50	203	191	0
Grp Sat Flow(s),veh/h/ln	1391	1211	1129				0	1333	1055	927	1142	0
Q Serve(g_s), s	30.5	27.3	2.1				0.0	4.1	2.3	12.8	11.6	0.0
Cycle Q Clear(g_c), s	30.5	27.3	2.1				0.0	4.1	2.3	16.8	11.6	0.0
Prop In Lane	0.24		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	425	426	0
V/C Ratio(X)	0.78	0.71	0.06				0.00	0.21	0.13	0.48	0.45	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	425	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.4	25.1	14.8				0.0	16.0	15.5	29.0	25.7	0.0
Incr Delay (d2), s/veh	7.8	2.2	0.2				0.0	1.0	0.7	3.8	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	9.6	0.7				0.0	1.6	0.8	4.5	4.1	0.0
LnGrp Delay(d),s/veh	34.2	27.3	15.0				0.0	17.0	16.1	32.8	29.1	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		2040						156			394	
Approach Delay, s/veh		29.1						16.7			31.0	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				6.1		32.5		18.8
Green Ext Time (p_c), s				2.3		5.4		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1130	955	0	0	0	0	0	0	225	1036	0
Future Volume (vph)	0	1130	955	0	0	0	0	0	0	225	1036	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4381	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4381	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1202	1016	0	0	0	0	0	0	239	1102	0
RTOR Reduction (vph)	0	11	11	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1699	497	0	0	0	0	0	0	215	1126	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.39	c0.49							0.17	c0.42	
v/s Ratio Perm												
v/c Ratio		0.73	0.93							0.45	1.09	
Uniform Delay, d1		13.3	16.1							17.1	23.0	
Progression Factor		0.61	0.69							0.50	0.57	
Incremental Delay, d2		1.5	19.1							2.7	53.9	
Delay (s)		9.6	30.2							11.2	67.0	
Level of Service		A	C							B	E	
Approach Delay (s)		14.4			0.0			0.0			58.1	
Approach LOS		B			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	129.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	590	760	0	0	0	0	0	1333	455	0	0	0
Future Volume (vph)	590	760	0	0	0	0	0	1333	455	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	826	0	0	0	0	0	1449	495	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	57	0	0	0
Lane Group Flow (vph)	464	969	0	0	0	0	0	1449	438	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.43	0.26							c0.41			
v/c Ratio	0.91	0.56						0.84	0.90			
Uniform Delay, d1	18.6	14.4						18.1	19.0			
Progression Factor	0.51	0.41						1.00	1.00			
Incremental Delay, d2	18.1	0.9						5.0	22.5			
Delay (s)	27.5	6.9						23.1	41.4			
Level of Service	C	A						C	D			
Approach Delay (s)		13.6			0.0			27.8			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	635	800	9	2	1
Future Vol, veh/h	1	635	800	9	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	706	889	10	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	899	0	-	0	1602	894
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	756	-	-	-	116	340
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	756	-	-	-	116	340
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	487	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	29.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	756	-	-	-	149
HCM Lane V/C Ratio	0.001	-	-	-	0.022
HCM Control Delay (s)	9.8	0	-	-	29.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	0	505	730	1
Future Vol, veh/h	1	0	0	505	730	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	561	811	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1373	406	812	0	-	0
Stage 1	812	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	148	595	812	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	595	812	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	570	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	812	-	148	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	0	-	29.5	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	434	6	45	499	141	11	440	40	10	360	311
Future Volume (veh/h)	206	434	6	45	499	141	11	440	40	10	360	311
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1791	1728
Adj Flow Rate, veh/h	212	447	6	46	514	145	11	454	41	10	371	321
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	493	1009	14	498	603	170	53	853	79	52	571	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.94	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1682	23	896	1275	360	20	2625	242	17	1756	1295
Grp Volume(v), veh/h	212	0	453	46	0	659	279	0	227	381	0	321
Grp Sat Flow(s),veh/h/ln	1629	0	1705	896	0	1635	1547	0	1340	1773	0	1295
Q Serve(g_s), s	5.1	0.0	11.6	0.4	0.0	9.1	1.1	0.0	7.2	0.0	0.0	17.8
Cycle Q Clear(g_c), s	5.1	0.0	11.6	1.8	0.0	9.1	18.9	0.0	7.2	14.6	0.0	17.8
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.18	0.03		1.00
Lane Grp Cap(c), veh/h	493	0	1023	498	0	774	550	0	436	622	0	421
V/C Ratio(X)	0.43	0.00	0.44	0.09	0.00	0.85	0.51	0.00	0.52	0.61	0.00	0.76
Avail Cap(c_a), veh/h	531	0	1023	498	0	774	550	0	436	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.79	0.00	0.79	0.94	0.00	0.94	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.5	0.0	8.7	1.3	0.0	1.4	10.7	0.0	10.8	23.2	0.0	24.2
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.3	0.0	9.3	3.1	0.0	4.1	4.4	0.0	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	5.8	0.1	0.0	4.5	3.6	0.0	3.0	8.0	0.0	7.8
LnGrp Delay(d),s/veh	9.7	0.0	10.1	1.5	0.0	10.7	13.8	0.0	14.9	27.6	0.0	36.5
LnGrp LOS	A		B	A		B	B		B	C		D
Approach Vol, veh/h		665			705			506			702	
Approach Delay, s/veh		10.0			10.1			14.3			31.7	
Approach LOS		A			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	10.1	40.9		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		13.6		20.9	7.1	11.1		19.8
Green Ext Time (p_c), s		14.8		2.7	0.1	12.4		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	479	5	5	689	0	10
Future Volume (vph)	479	5	5	689	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	504	5	5	725	0	11
RTOR Reduction (vph)	1	0	0	0	9	0
Lane Group Flow (vph)	508	0	0	730	2	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	35.6			61.3	11.5	
Effective Green, g (s)	35.6			52.5	11.5	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	719			1061	196	
v/s Ratio Prot	c0.31				c0.00	
v/s Ratio Perm				c0.45		
v/c Ratio	0.71			0.69	0.01	
Uniform Delay, d1	18.0			8.6	29.4	
Progression Factor	0.66			0.79	1.00	
Incremental Delay, d2	5.3			0.2	0.0	
Delay (s)	17.1			7.0	29.4	
Level of Service	B			A	C	
Approach Delay (s)	17.1			7.0	29.4	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	489	0	0	694	5	15
Future Volume (vph)	489	0	0	694	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	543	0	0	771	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	543	0	0	771	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.1			35.6	16.9	
Effective Green, g (s)	47.1			35.6	16.9	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	934			706	298	
v/s Ratio Prot	c0.34			c0.49	c0.01	
v/s Ratio Perm						
v/c Ratio	0.58			1.09	0.03	
Uniform Delay, d1	10.3			22.2	25.1	
Progression Factor	0.16			1.07	0.95	
Incremental Delay, d2	0.7			55.2	0.0	
Delay (s)	2.4			79.1	23.9	
Level of Service	A			E	C	
Approach Delay (s)	2.4			79.1	23.9	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	460	45	30	168	0	0	0	0	290	1025	527
Future Volume (vph)	0	460	45	30	168	0	0	0	0	290	1025	527
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2830			1822						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2830			1639						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	479	47	31	175	0	0	0	0	302	1068	549
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	517	0	0	206	0	0	0	0	0	1370	549
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1132			655						1573	554
v/s Ratio Prot		c0.18									c0.46	
v/s Ratio Perm					0.13							c0.43
v/c Ratio		0.46			0.31						0.87	0.99
Uniform Delay, d1		17.6			16.5						16.6	22.3
Progression Factor		0.33			0.33						1.00	1.00
Incremental Delay, d2		1.1			1.0						6.9	36.1
Delay (s)		6.9			6.4						23.5	58.4
Level of Service		A			A						C	E
Approach Delay (s)		6.9			6.4			0.0			33.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	398	346	0	0	131	425	72	1600	60	0	0	0
Future Volume (veh/h)	398	346	0	0	131	425	72	1600	60	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	406	353	0	0	134	434	73	1633	61			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	501	833	0	0	446	359	78	1830	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	156	3661	1670			
Grp Volume(v), veh/h	406	353	0	0	134	434	914	792	61			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1953	1863	1670			
Q Serve(g_s), s	6.3	6.0	0.0	0.0	4.5	18.0	37.0	33.0	2.5			
Cycle Q Clear(g_c), s	6.3	6.0	0.0	0.0	4.5	18.0	37.0	33.0	2.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	501	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.81	0.42	0.00	0.00	0.30	1.21	0.94	0.85	0.07			
Avail Cap(c_a), veh/h	501	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.6	7.5	0.0	0.0	25.8	31.0	32.1	30.5	17.7			
Incr Delay (d2), s/veh	13.3	1.6	0.0	0.0	1.7	117.5	17.0	9.6	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.4	3.5	0.0	0.0	2.7	19.6	24.6	19.5	1.2			
LnGrp Delay(d),s/veh	37.0	9.1	0.0	0.0	27.5	148.5	49.1	40.1	17.9			
LnGrp LOS	D	A			C	F	D	D	B			
Approach Vol, veh/h		759			568			1767				
Approach Delay, s/veh		24.0			120.0			44.0				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		39.0		8.0			8.3	20.0
Green Ext Time (p_c), s		0.0		3.5			1.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	280	45	10	240	35	25	411	40	60	336	35
Future Volume (veh/h)	70	280	45	10	240	35	25	411	40	60	336	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	74	298	48	11	255	37	27	437	43	64	357	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	204	366	59	143	357	52	107	1483	143	243	1255	131
Arrive On Green	0.28	0.28	0.27	0.55	0.55	0.54	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	875	1322	213	795	1291	187	89	2287	221	287	1936	202
Grp Volume(v), veh/h	74	0	346	11	0	292	280	0	227	241	0	217
Grp Sat Flow(s),veh/h/ln	875	0	1535	795	0	1478	1431	0	1167	1243	0	1182
Q Serve(g_s), s	6.4	0.0	16.8	1.0	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.1	0.0	16.8	17.8	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.13	0.10		0.19	0.27		0.17
Lane Grp Cap(c), veh/h	204	0	425	143	0	409	977	0	756	863	0	767
V/C Ratio(X)	0.36	0.00	0.81	0.08	0.00	0.71	0.29	0.00	0.30	0.28	0.00	0.28
Avail Cap(c_a), veh/h	422	0	806	340	0	776	977	0	756	863	0	767
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94	0.74	0.00	0.74
Uniform Delay (d), s/veh	33.0	0.0	27.1	24.4	0.0	15.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.5	0.1	0.0	0.9	0.7	0.0	1.0	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.3	0.2	0.0	4.6	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.4	0.0	28.5	24.5	0.0	16.5	0.7	0.0	1.0	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		420			303			507			458	
Approach Delay, s/veh		29.4			16.8			0.8			0.6	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.1		54.9		25.1		54.9
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		20.1		2.0		19.8		2.0
Green Ext Time (p_c), s		0.3		0.4		0.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	235	165	30	155	0	0	0	0	25	1035	120
Future Volume (vph)	0	235	165	30	155	0	0	0	0	25	1035	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1703			1816						4174	1117
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1703			1657						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	255	179	33	168	0	0	0	0	27	1125	130
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	415	0	0	201	0	0	0	0	0	1152	130
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		796			774						1930	417
v/s Ratio Prot		c0.24									c0.28	
v/s Ratio Perm					0.12							0.12
v/c Ratio		0.52			0.26						0.60	0.31
Uniform Delay, d1		15.0			12.9						16.0	17.8
Progression Factor		0.85			0.86						0.38	0.46
Incremental Delay, d2		2.4			0.6						0.9	1.2
Delay (s)		15.1			11.7						6.9	9.4
Level of Service		B			B						A	A
Approach Delay (s)		15.1			11.7			0.0			7.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	155	0	0	115	110	70	1387	20	5	0	0
Future Volume (veh/h)	105	155	0	0	115	110	70	1387	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	107	158	0	0	117	112	71	1415	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	405	688	0	0	285	273	64	1338	20			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1039	1620	0	0	671	642	128	2675	40			
Grp Volume(v), veh/h	107	158	0	0	0	229	789	0	717			
Grp Sat Flow(s),veh/h/ln	1039	1620	0	0	0	1312	1422	0	1421			
Q Serve(g_s), s	4.1	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Cycle Q Clear(g_c), s	13.9	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	405	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.26	0.23	0.00	0.00	0.00	0.41	1.11	0.00	1.01			
Avail Cap(c_a), veh/h	405	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.9	3.6	0.0	0.0	0.0	16.1	33.4	0.0	33.4			
Incr Delay (d2), s/veh	1.6	0.8	0.0	0.0	0.0	2.2	67.8	0.0	36.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	0.0	0.0	3.9	29.1	0.0	22.9			
LnGrp Delay(d),s/veh	8.5	4.3	0.0	0.0	0.0	18.4	101.2	0.0	69.6			
LnGrp LOS	A	A				B	F		F			
Approach Vol, veh/h		265			229			1506				
Approach Delay, s/veh		6.0			18.4			86.2				
Approach LOS		A			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		15.9				11.8
Green Ext Time (p_c), s		0.0		2.1				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	315	60	55	245	70	35	341	35	35	306	70
Future Volume (veh/h)	80	315	60	55	245	70	35	341	35	35	306	70
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	0.99		0.91	0.94		0.87	0.97		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	87	342	65	60	266	76	38	371	38	38	333	76
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	350	472	90	218	440	126	141	1234	124	137	1069	238
Arrive On Green	0.38	0.38	0.38	0.77	0.77	0.76	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	918	1227	233	872	1145	327	164	2281	230	157	1978	440
Grp Volume(v), veh/h	87	0	407	60	0	342	245	0	202	250	0	197
Grp Sat Flow(s),veh/h/ln	918	0	1460	872	0	1472	1454	0	1222	1436	0	1139
Q Serve(g_s), s	6.0	0.0	19.0	4.5	0.0	8.1	0.0	0.0	11.5	0.3	0.0	0.0
Cycle Q Clear(g_c), s	14.1	0.0	19.0	23.6	0.0	8.1	10.6	0.0	11.5	11.8	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.16		0.19	0.15		0.39
Lane Grp Cap(c), veh/h	350	0	561	218	0	566	838	0	661	828	0	616
V/C Ratio(X)	0.25	0.00	0.73	0.28	0.00	0.60	0.29	0.00	0.31	0.30	0.00	0.32
Avail Cap(c_a), veh/h	480	0	767	340	0	773	838	0	661	828	0	616
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	1.00	0.00	1.00	0.93	0.00	0.93	0.95	0.00	0.95
Uniform Delay (d), s/veh	22.7	0.0	21.0	16.2	0.0	6.7	19.4	0.0	19.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.7	0.0	1.0	0.8	0.0	1.1	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.9	1.1	0.0	3.2	4.9	0.0	4.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.0	0.0	22.9	16.9	0.0	7.7	20.3	0.0	20.9	0.9	0.0	1.3
LnGrp LOS	C		C	B		A	C		C	A		A
Approach Vol, veh/h		494			402			447			447	
Approach Delay, s/veh		22.9			9.1			20.6			1.1	
Approach LOS		C			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.7		46.3		33.7		46.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		21.0		13.5		25.6		13.8
Green Ext Time (p_c), s		4.4		3.9		4.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	335	60	80	220	0	0	0	0	120	995	155
Future Volume (vph)	0	335	60	80	220	0	0	0	0	120	995	155
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1578	1506						4303	1264
Flt Permitted		1.00	1.00	0.41	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	686	1506						4303	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	372	67	89	244	0	0	0	0	133	1106	172
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	372	30	89	244	0	0	0	0	0	1239	172
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	308	677						2022	483
v/s Ratio Prot		c0.22			0.16							
v/s Ratio Perm			0.03	0.13							0.29	0.14
v/c Ratio		0.49	0.06	0.29	0.36						0.61	0.36
Uniform Delay, d1		15.6	12.4	13.9	14.4						15.8	17.7
Progression Factor		1.00	1.00	0.93	0.95						0.39	0.47
Incremental Delay, d2		2.3	0.2	2.2	1.4						1.2	1.7
Delay (s)		17.9	12.7	15.2	15.1						7.4	10.0
Level of Service		B	B	B	B						A	A
Approach Delay (s)		17.1			15.2			0.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	275	0	0	210	40	95	1162	245	0	0	0
Future Volume (vph)	180	275	0	0	210	40	95	1162	245	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1448	1620			1387		1235	2495				
Flt Permitted	0.48	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	734	1620			1387		1235	2495				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	286	0	0	219	42	99	1210	255	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	188	286	0	0	252	0	99	1444	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	266	587			502		694	1403				
v/s Ratio Prot		0.18			0.18			c0.58				
v/s Ratio Perm	c0.26						0.08					
v/c Ratio	0.71	0.49			0.50		0.14	1.03				
Uniform Delay, d1	21.9	19.7			19.9		8.3	17.5				
Progression Factor	1.48	1.51			1.13		0.36	0.31				
Incremental Delay, d2	12.8	2.5			3.4		0.1	22.4				
Delay (s)	45.1	32.3			25.9		3.1	27.8				
Level of Service	D	C			C		A	C				
Approach Delay (s)		37.4			25.9			26.2			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	186	1410	45	85	15	0	0	35	10
Future Volume (vph)	0	0	0	186	1410	45	85	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3903			1381			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3903			1091			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	200	1516	48	91	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	200	1560	0	0	107	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2439			327			417	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.16				c0.10				
v/c Ratio				0.25	0.64			0.33			0.10	
Uniform Delay, d1				6.7	9.4			21.7			20.2	
Progression Factor				0.35	0.27			1.06			1.00	
Incremental Delay, d2				0.6	1.0			2.5			0.5	
Delay (s)				2.9	3.5			25.4			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.5			25.4			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	1465	120	30	281	0	0	235	136
Future Volume (veh/h)	0	0	0	85	1465	120	30	281	0	0	235	136
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1605	0	0	1536	1555
Adj Flow Rate, veh/h				88	1510	124	31	290	0	0	242	140
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	0	0	2	2
Cap, veh/h				129	2357	200	102	840	0	0	550	293
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				220	4012	340	145	2562	0	0	1706	869
Grp Volume(v), veh/h				637	531	553	164	157	0	0	215	167
Grp Sat Flow(s),veh/h/ln				1594	1461	1517	1247	1388	0	0	1459	1040
Q Serve(g_s), s				29.7	26.7	26.7	1.2	3.8	0.0	0.0	11.0	12.1
Cycle Q Clear(g_c), s				29.7	26.7	26.7	13.4	3.8	0.0	0.0	11.0	12.1
Prop In Lane				0.14		0.22	0.19		0.00	0.00		0.84
Lane Grp Cap(c), veh/h				937	858	892	474	468	0	0	492	351
V/C Ratio(X)				0.68	0.62	0.62	0.35	0.34	0.00	0.00	0.44	0.48
Avail Cap(c_a), veh/h				937	858	892	474	468	0	0	492	351
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.3	24.0	24.1	9.4	9.2	0.0	0.0	28.4	29.0
Incr Delay (d2), s/veh				4.0	3.3	3.2	2.0	1.9	0.0	0.0	2.8	4.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.2	11.6	12.0	1.7	1.6	0.0	0.0	4.8	3.9
LnGrp Delay(d),s/veh				29.3	27.4	27.3	11.4	11.2	0.0	0.0	31.2	33.6
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1722			321			382	
Approach Delay, s/veh					28.1			11.3			32.3	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				15.4		31.7		14.1
Green Ext Time (p_c), s				2.4		7.2		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	390	1400	0	0	0	0	0	735	445
Future Volume (vph)	0	0	0	390	1400	0	0	0	0	0	735	445
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	415	1489	0	0	0	0	0	782	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	249	1655	0	0	0	0	0	782	457
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.18	
v/s Ratio Perm				0.20	0.41							c0.43
v/c Ratio				0.35	0.71						0.53	1.24
Uniform Delay, d1				9.0	12.2						20.7	26.0
Progression Factor				0.68	0.67						1.18	1.22
Incremental Delay, d2				0.9	1.2						1.1	125.1
Delay (s)				7.0	9.4						25.6	156.7
Level of Service				A	A						C	F
Approach Delay (s)		0.0			9.1			0.0			75.0	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	115.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	805	196	980	1342	0	0	0	0
Future Volume (vph)	0	0	0	0	805	196	980	1342	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3474				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3474				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	839	204	1021	1398	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	20	20	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	839	187	490	1889	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.22		0.45	c0.54				
v/s Ratio Perm						0.16						
v/c Ratio					0.58	0.41	0.85	1.01				
Uniform Delay, d1					19.4	17.8	15.7	18.5				
Progression Factor					0.92	0.87	0.89	0.84				
Incremental Delay, d2					1.4	2.2	5.5	15.2				
Delay (s)					19.2	17.8	19.5	30.7				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			18.9			28.4			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1630	70	0	0	0	0	90	311	70	151	0
Future Volume (veh/h)	50	1630	70	0	0	0	0	90	311	70	151	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	52	1698	73				0	94	324	73	157	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	77	2682	118				0	540	436	338	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	139	4876	215				0	1440	1163	749	1304	0
Grp Volume(v), veh/h	528	831	464				0	94	324	73	157	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1366				0	1440	1163	749	1304	0
Q Serve(g_s), s	27.9	25.0	25.0				0.0	3.5	19.3	7.2	8.8	0.0
Cycle Q Clear(g_c), s	27.9	25.0	25.0				0.0	3.5	19.3	10.7	8.8	0.0
Prop In Lane	0.10		0.16				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1346	751				0	540	436	338	489	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.17	0.74	0.22	0.32	0.00
Avail Cap(c_a), veh/h	779	1346	751				0	540	436	338	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	25.0	25.0				0.0	16.7	21.7	28.2	25.8	0.0
Incr Delay (d2), s/veh	4.7	2.1	3.8				0.0	0.7	10.9	1.5	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	8.9	10.2				0.0	1.5	7.4	1.6	3.4	0.0
LnGrp Delay(d),s/veh	30.8	27.1	28.8				0.0	17.4	32.5	29.6	27.5	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1823						418			230	
Approach Delay, s/veh		28.6						29.1			28.2	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				21.3		29.9		12.7
Green Ext Time (p_c), s				2.0		7.4		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	1750	45	0	0	0	0	190	130	120	155	0
Future Volume (veh/h)	201	1750	45	0	0	0	0	190	130	120	155	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1352	0
Adj Flow Rate, veh/h	209	1823	47				0	198	135	125	161	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	275	2585	639				0	512	432	279	449	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	489	4596	1135				0	1412	1191	535	1299	0
Grp Volume(v), veh/h	600	1432	47				0	198	135	139	147	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	604	1169	0
Q Serve(g_s), s	32.4	29.1	2.7				0.0	8.3	6.5	9.1	3.7	0.0
Cycle Q Clear(g_c), s	32.4	29.1	2.7				0.0	8.3	6.5	17.4	3.7	0.0
Prop In Lane	0.35		1.00				0.00		1.00	0.90		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	305	424	0
V/C Ratio(X)	0.76	0.69	0.07				0.00	0.39	0.31	0.46	0.35	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	305	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.5	26.1	15.4				0.0	18.9	18.3	12.0	7.5	0.0
Incr Delay (d2), s/veh	6.8	1.9	0.2				0.0	2.2	1.9	4.9	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.1	10.2	0.9				0.0	3.6	2.4	2.5	1.4	0.0
LnGrp Delay(d),s/veh	34.3	28.0	15.6				0.0	21.1	20.2	16.9	9.8	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		2079						333			286	
Approach Delay, s/veh		29.5						20.7			13.2	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				10.3		34.4		19.4
Green Ext Time (p_c), s				2.7		6.7		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1205	1075	0	0	0	0	0	0	361	788	0
Future Volume (vph)	0	1205	1075	0	0	0	0	0	0	361	788	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4463	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4463	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1242	1108	0	0	0	0	0	0	372	812	0
RTOR Reduction (vph)	0	35	35	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1761	519	0	0	0	0	0	0	335	849	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2343	517							506	1080	
v/s Ratio Prot		0.39								0.26	c0.31	
v/s Ratio Perm			c0.53									
v/c Ratio		0.86dr	1.00							0.66	0.79	
Uniform Delay, d1		14.9	19.0							19.6	21.0	
Progression Factor		0.47	0.47							0.73	0.76	
Incremental Delay, d2		1.6	34.2							5.8	5.1	
Delay (s)		8.6	43.1							20.1	21.1	
Level of Service		A	D							C	C	
Approach Delay (s)		16.7			0.0			0.0			20.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	845	710	0	0	0	0	0	1497	655	0	0	0
Future Volume (vph)	845	710	0	0	0	0	0	1497	655	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3801						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3801						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	871	732	0	0	0	0	0	1543	675	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	84	0	0	0
Lane Group Flow (vph)	638	935	0	0	0	0	0	1543	591	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.40				
v/s Ratio Perm	c0.57	0.25							c0.54			
v/c Ratio	1.17	0.50						0.91	1.23			
Uniform Delay, d1	20.5	13.9						21.0	22.5			
Progression Factor	0.63	0.56						1.00	1.00			
Incremental Delay, d2	88.4	0.6						8.5	122.0			
Delay (s)	101.4	8.5						29.5	144.5			
Level of Service	F	A						C	F			
Approach Delay (s)		46.3			0.0			64.5			0.0	
Approach LOS		D			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	475	20	35	455	155	5	210	35	45	340	355
Future Volume (veh/h)	140	475	20	35	455	155	5	210	35	45	340	355
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1676	1710	1800	1664	1728	1800	1769	1711
Adj Flow Rate, veh/h	146	495	21	36	474	161	5	219	36	47	354	370
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	341	902	38	405	510	173	52	443	72	101	561	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1610	68	847	1183	402	8	1230	199	132	1558	1372
Grp Volume(v), veh/h	146	0	516	36	0	635	260	0	0	401	0	370
Grp Sat Flow(s),veh/h/ln	1597	0	1679	847	0	1585	1437	0	0	1690	0	1372
Q Serve(g_s), s	3.5	0.0	14.6	0.9	0.0	20.9	0.0	0.0	0.0	5.9	0.0	17.7
Cycle Q Clear(g_c), s	3.5	0.0	14.6	5.9	0.0	20.9	5.9	0.0	0.0	14.6	0.0	17.7
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	341	0	940	405	0	684	566	0	0	662	0	494
V/C Ratio(X)	0.43	0.00	0.55	0.09	0.00	0.93	0.46	0.00	0.00	0.61	0.00	0.75
Avail Cap(c_a), veh/h	348	0	940	405	0	684	566	0	0	662	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.82	0.00	0.82	0.94	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	0.0	10.5	4.1	0.0	4.4	7.6	0.0	0.0	19.9	0.0	21.0
Incr Delay (d2), s/veh	0.3	0.0	2.3	0.4	0.0	18.0	2.5	0.0	0.0	4.1	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.3	0.2	0.0	11.0	2.6	0.0	0.0	7.7	0.0	8.1
LnGrp Delay(d),s/veh	13.7	0.0	12.8	4.4	0.0	22.4	10.1	0.0	0.0	24.0	0.0	31.0
LnGrp LOS	B		B	A		C	B			C		C
Approach Vol, veh/h		662			671			260			771	
Approach Delay, s/veh		13.0			21.4			10.1			27.4	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.7	35.3		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		16.6		7.9	5.5	22.9		19.7
Green Ext Time (p_c), s		12.9		8.9	0.0	5.7		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	10	5	640	0	5
Future Volume (vph)	550	10	5	640	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1599			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1599			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	573	10	5	667	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	582	0	0	672	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	31.5			56.6	12.2	
Effective Green, g (s)	31.5			47.8	12.2	
Actuated g/C Ratio	0.42			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	671			1021	222	
v/s Ratio Prot	c0.36				c0.00	
v/s Ratio Perm				0.42		
v/c Ratio	0.87			0.66	0.00	
Uniform Delay, d1	19.9			8.5	26.3	
Progression Factor	0.79			0.67	1.00	
Incremental Delay, d2	12.3			0.1	0.0	
Delay (s)	28.0			5.8	26.3	
Level of Service	C			A	C	
Approach Delay (s)	28.0			5.8	26.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	0	0	645	5	15
Future Volume (vph)	550	0	0	645	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	611	0	0	717	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	611	0	0	717	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.7			31.5	16.3	
Effective Green, g (s)	43.7			31.5	16.3	
Actuated g/C Ratio	0.58			0.42	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	925			666	306	
v/s Ratio Prot	c0.38			c0.45	c0.01	
v/s Ratio Perm						
v/c Ratio	0.66			1.08	0.03	
Uniform Delay, d1	10.6			21.8	23.1	
Progression Factor	0.35			1.22	1.25	
Incremental Delay, d2	1.0			50.5	0.0	
Delay (s)	4.7			77.0	29.0	
Level of Service	A			E	C	
Approach Delay (s)	4.7			77.0	29.0	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	510	55	30	180	0	0	0	0	195	935	460
Future Volume (vph)	0	510	55	30	180	0	0	0	0	195	935	460
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2799			1791						2911	1244
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2799			1610						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	531	57	31	188	0	0	0	0	203	974	479
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	577	0	0	219	0	0	0	0	0	1177	479
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1268			729						1358	464
v/s Ratio Prot		c0.21									c0.40	
v/s Ratio Perm					0.14							c0.38
v/c Ratio		0.46			0.30						0.87	1.03
Uniform Delay, d1		14.1			13.0						17.9	23.5
Progression Factor		0.65			1.72						1.00	1.00
Incremental Delay, d2		0.9			0.9						7.6	50.3
Delay (s)		10.1			23.2						25.6	73.8
Level of Service		B			C						C	E
Approach Delay (s)		10.1			23.2			0.0			39.5	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	275	0	0	140	415	75	1260	40	0	0	0
Future Volume (veh/h)	425	275	0	0	140	415	75	1260	40	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	452	293	0	0	149	441	80	1340	43			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	526	888	0	0	518	417	90	1589	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	199	3505	1659			
Grp Volume(v), veh/h	452	293	0	0	149	441	760	660	43			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1895	1810	1659			
Q Serve(g_s), s	8.6	10.3	0.0	0.0	4.6	20.0	29.5	26.4	1.7			
Cycle Q Clear(g_c), s	8.6	10.3	0.0	0.0	4.6	20.0	29.5	26.4	1.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.11		1.00			
Lane Grp Cap(c), veh/h	526	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.86	0.33	0.00	0.00	0.29	1.06	0.88	0.80	0.06			
Avail Cap(c_a), veh/h	526	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.7	21.3	0.0	0.0	21.8	27.5	30.0	28.7	18.1			
Incr Delay (d2), s/veh	16.6	1.0	0.0	0.0	1.4	60.4	12.9	8.2	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.7	5.7	0.0	0.0	2.6	15.6	18.6	15.1	0.8			
LnGrp Delay(d),s/veh	46.3	22.3	0.0	0.0	23.2	87.9	42.9	36.9	18.3			
LnGrp LOS	D	C			C	F	D	D	B			
Approach Vol, veh/h		745			590			1463				
Approach Delay, s/veh		36.8			71.6			39.5				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		31.5		12.3			10.6	22.0
Green Ext Time (p_c), s		0.9		3.3			0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	345	25	20	245	35	10	200	25	25	370	20
Future Volume (veh/h)	40	345	25	20	245	35	10	200	25	25	370	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	375	27	22	266	38	11	217	27	27	402	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	222	488	35	176	440	63	61	642	77	74	691	37
Arrive On Green	0.34	0.34	0.33	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	868	1430	103	750	1290	184	20	1109	134	39	1193	63
Grp Volume(v), veh/h	43	0	402	22	0	304	255	0	0	451	0	0
Grp Sat Flow(s),veh/h/ln	868	0	1533	750	0	1474	1262	0	0	1296	0	0
Q Serve(g_s), s	3.3	0.0	17.6	2.1	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.1	0.0	17.6	19.7	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	222	0	523	176	0	503	781	0	0	801	0	0
V/C Ratio(X)	0.19	0.00	0.77	0.12	0.00	0.60	0.33	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	284	0	634	230	0	609	781	0	0	801	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.95	0.00	0.00	0.69	0.00	0.00
Uniform Delay (d), s/veh	28.9	0.0	22.1	39.2	0.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.7	0.3	0.0	1.1	1.1	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	8.0	0.5	0.0	6.2	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.3	0.0	26.8	39.5	0.0	29.6	1.1	0.0	0.0	2.0	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		445			326			255			451	
Approach Delay, s/veh		27.0			30.3			1.1			2.0	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.6		46.4		28.6		46.4
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		20.1		2.0		21.7		2.0
Green Ext Time (p_c), s		2.6		3.4		2.3		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

HCM Signalized Intersection Capacity Analysis
7: Hetherton & 5th

Aegis San Rafael
Future (2040) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	285	95	45	225	0	0	0	0	25	925	75
Future Volume (vph)	0	285	95	45	225	0	0	0	0	25	925	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1796						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	306	102	48	242	0	0	0	0	27	995	81
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	392	0	0	290	0	0	0	0	0	1022	81
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.23									c0.25	
v/s Ratio Perm					0.18							0.07
v/c Ratio		0.49			0.39						0.53	0.20
Uniform Delay, d1		14.2			13.4						14.2	16.0
Progression Factor		0.32			1.29						0.17	0.25
Incremental Delay, d2		2.1			1.2						0.6	0.6
Delay (s)		6.6			18.5						3.1	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.6			18.5			0.0			3.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
8: Irwin & 5th

Aegis San Rafael
Future (2040) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	95	0	0	120	20	155	1090	10	0	0	0
Future Volume (veh/h)	215	95	0	0	120	20	155	1090	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1590	1620	1620	1545	1620			
Adj Flow Rate, veh/h	236	104	0	0	132	22	170	1198	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	370	524	0	0	393	66	188	1400	13			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1101	1573	0	0	1180	197	321	2386	23			
Grp Volume(v), veh/h	236	104	0	0	0	154	720	0	659			
Grp Sat Flow(s),veh/h/ln	1101	1573	0	0	0	1377	1359	0	1371			
Q Serve(g_s), s	15.9	4.5	0.0	0.0	0.0	6.3	38.8	0.0	34.6			
Cycle Q Clear(g_c), s	22.2	4.5	0.0	0.0	0.0	6.3	38.8	0.0	34.6			
Prop In Lane	1.00		0.00	0.00		0.14	0.24		0.02			
Lane Grp Cap(c), veh/h	370	524	0	0	0	459	797	0	804			
V/C Ratio(X)	0.64	0.20	0.00	0.00	0.00	0.34	0.90	0.00	0.82			
Avail Cap(c_a), veh/h	370	524	0	0	0	459	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	24.3	0.0	0.0	0.0	18.8	28.1	0.0	26.4			
Incr Delay (d2), s/veh	8.1	0.8	0.0	0.0	0.0	2.0	15.5	0.0	9.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	2.1	0.0	0.0	0.0	2.6	18.0	0.0	15.2			
LnGrp Delay(d),s/veh	43.4	25.1	0.0	0.0	0.0	20.8	43.6	0.0	35.6			
LnGrp LOS	D	C				C	D		D			
Approach Vol, veh/h		340			154			1379				
Approach Delay, s/veh		37.8			20.8			39.8				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		40.8		24.2				8.3
Green Ext Time (p_c), s		1.1		0.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	190	35	60	255	25	10	170	65	45	315	45
Future Volume (veh/h)	40	190	35	60	255	25	10	170	65	45	315	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.90	0.97		0.91	0.97		0.92	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1569	1555	1620	1580	1555
Adj Flow Rate, veh/h	44	209	38	66	280	27	11	187	71	49	346	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	199	388	71	262	425	41	61	561	205	110	646	87
Arrive On Green	0.32	0.32	0.31	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	887	1226	223	945	1345	130	19	929	340	95	1070	144
Grp Volume(v), veh/h	44	0	247	66	0	307	269	0	0	444	0	0
Grp Sat Flow(s),veh/h/ln	887	0	1449	945	0	1474	1288	0	0	1309	0	0
Q Serve(g_s), s	3.5	0.0	10.5	5.1	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	10.5	15.6	0.0	15.0	13.3	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.09	0.04		0.26	0.11		0.11
Lane Grp Cap(c), veh/h	199	0	458	262	0	466	827	0	0	843	0	0
V/C Ratio(X)	0.22	0.00	0.54	0.25	0.00	0.66	0.33	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	273	0	579	341	0	590	827	0	0	843	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.75	0.00	0.00	0.75	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	21.1	35.0	0.0	29.7	17.2	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.5	0.0	1.7	0.8	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.3	1.4	0.0	6.4	5.0	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.3	0.0	22.1	35.5	0.0	31.4	18.0	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		291			373			269			444	
Approach Delay, s/veh		23.5			32.1			18.0			1.8	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.7		48.3		26.7		48.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		20.5		15.3		17.6		2.0
Green Ext Time (p_c), s		2.1		3.4		2.5		3.6

Intersection Summary		
HCM 2010 Ctrl Delay		17.8
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	150	90	115	255	0	0	0	0	75	855	120
Future Volume (vph)	0	150	90	115	255	0	0	0	0	75	855	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1648	1450						4228	1264
Flt Permitted		1.00	1.00	0.64	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1102	1450						4228	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	161	97	124	274	0	0	0	0	81	919	129
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	161	53	124	274	0	0	0	0	0	1000	129
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	499	657						1950	465
v/s Ratio Prot		0.10			c0.19							
v/s Ratio Perm			0.05	0.11							0.24	0.10
v/c Ratio		0.22	0.10	0.25	0.42						0.51	0.28
Uniform Delay, d1		12.4	11.7	12.6	13.8						14.3	16.7
Progression Factor		1.81	3.46	0.68	0.76						1.63	1.50
Incremental Delay, d2		0.7	0.4	0.9	1.6						0.8	1.3
Delay (s)		23.2	40.9	9.6	12.0						24.0	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		29.9			11.3			0.0			24.3	
Approach LOS		C			B			A			C	

Intersection Summary				
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6	
Intersection Capacity Utilization	83.4%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	185	0	0	275	135	95	1050	55	0	0	0
Future Volume (vph)	45	185	0	0	275	135	95	1050	55	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.96		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1327		1226	2455				
Flt Permitted	0.32	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	486	1588			1327		1226	2455				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	195	0	0	289	142	100	1105	58	0	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	5	0	0	0	0
Lane Group Flow (vph)	47	195	0	0	408	0	100	1158	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	194	635			530		637	1276				
v/s Ratio Prot		0.12			c0.31			c0.47				
v/s Ratio Perm	0.10						0.08					
v/c Ratio	0.24	0.31			0.77		0.16	0.91				
Uniform Delay, d1	14.9	15.4			19.5		9.4	16.4				
Progression Factor	1.70	1.67			0.88		0.77	0.63				
Incremental Delay, d2	2.8	1.2			8.8		0.3	6.0				
Delay (s)	28.2	26.9			25.9		7.5	16.4				
Level of Service	C	C			C		A	B				
Approach Delay (s)		27.2			25.9			15.7			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	350	1365	20	80	5	0	0	30	10
Future Volume (vph)	0	0	0	350	1365	20	80	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3771			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3771			1035			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	389	1517	22	89	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	389	1537	0	0	95	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2363			303			406	
v/s Ratio Prot					c0.41						0.03	
v/s Ratio Perm				0.32				c0.09				
v/c Ratio				0.51	0.65			0.31			0.09	
Uniform Delay, d1				7.7	8.8			20.6			19.2	
Progression Factor				0.29	0.31			0.65			1.00	
Incremental Delay, d2				1.5	0.8			2.5			0.4	
Delay (s)				3.7	3.6			15.9			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.6			15.9			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	155	1530	40	25	170	0	0	265	155
Future Volume (veh/h)	0	0	0	155	1530	40	25	170	0	0	265	155
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				174	1719	45	28	191	0	0	298	174
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				217	2292	62	54	231	0	0	263	154
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				379	3997	108	0	667	0	0	759	443
Grp Volume(v), veh/h				707	592	639	219	0	0	0	0	472
Grp Sat Flow(s),veh/h/ln				1538	1417	1527	667	0	0	0	0	1203
Q Serve(g_s), s				32.9	29.5	29.5	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				32.9	29.5	29.5	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.25		0.07	0.13		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	876	286	0	0	0	0	417
V/C Ratio(X)				0.80	0.73	0.73	0.77	0.00	0.00	0.00	0.00	1.13
Avail Cap(c_a), veh/h				882	813	876	286	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				26.3	24.9	24.9	26.6	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				7.6	5.7	5.3	17.7	0.0	0.0	0.0	0.0	85.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.9	12.9	13.8	5.6	0.0	0.0	0.0	0.0	18.5
LnGrp Delay(d),s/veh				33.9	30.6	30.3	44.3	0.0	0.0	0.0	0.0	118.4
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1938			219			472	
Approach Delay, s/veh					31.7			44.3			118.4	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		34.9		28.0
Green Ext Time (p_c), s				0.0		4.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	465	1455	0	0	0	0	0	765	415
Future Volume (vph)	0	0	0	465	1455	0	0	0	0	0	765	415
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	484	1516	0	0	0	0	0	797	432
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	290	1710	0	0	0	0	0	797	422
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.23	0.43							c0.40
v/c Ratio				0.44	0.80						0.50	1.05
Uniform Delay, d1				10.7	14.2						17.5	23.0
Progression Factor				0.71	0.65						1.61	1.58
Incremental Delay, d2				1.1	1.6						1.0	56.5
Delay (s)				8.6	10.8						29.1	92.9
Level of Service				A	B						C	F
Approach Delay (s)		0.0			10.5			0.0			51.5	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	112.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
15: Irwin & 3rd

Aegis San Rafael
Future (2040) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1005	230	920	1135	0	0	0	0
Future Volume (vph)	0	0	0	0	1005	230	920	1135	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1092	250	1000	1234	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	35	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1092	215	490	1724	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.30		0.46	c0.51				
v/s Ratio Perm						0.19						
v/c Ratio					0.84	0.52	0.83	0.91				
Uniform Delay, d1					22.0	18.9	13.6	14.8				
Progression Factor					0.79	0.67	0.78	0.75				
Incremental Delay, d2					4.9	3.4	7.8	5.0				
Delay (s)					22.2	16.0	18.4	16.2				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			21.1			16.7			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
16: Lindaro & 2nd

Aegis San Rafael
Future (2040) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1590	90	0	0	0	0	55	205	55	300	0
Future Volume (veh/h)	40	1590	90	0	0	0	0	55	205	55	300	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1710	97				0	59	220	59	323	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	60	2549	148				0	535	432	374	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	112	4779	278				0	1385	1117	773	1355	0
Grp Volume(v), veh/h	538	846	466				0	59	220	59	323	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1338				0	1385	1117	773	1355	0
Q Serve(g_s), s	27.1	24.3	24.3				0.0	2.0	11.3	1.9	7.7	0.0
Cycle Q Clear(g_c), s	27.1	24.3	24.3				0.0	2.0	11.3	3.9	7.7	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	714				0	535	432	374	524	0
V/C Ratio(X)	0.72	0.65	0.65				0.00	0.11	0.51	0.16	0.62	0.00
Avail Cap(c_a), veh/h	749	1294	714				0	535	432	374	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	24.4	24.5				0.0	14.7	17.6	6.0	6.1	0.0
Incr Delay (d2), s/veh	5.8	2.6	4.6				0.0	0.4	4.2	0.9	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	8.7	9.9				0.0	0.8	4.0	0.5	3.4	0.0
LnGrp Delay(d),s/veh	31.4	27.0	29.1				0.0	15.2	21.8	6.9	11.4	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1850						279			382	
Approach Delay, s/veh		28.8						20.4			10.7	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				13.3		29.1		9.7
Green Ext Time (p_c), s				2.8		6.1		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1690	35	0	0	0	0	95	45	120	235	0
Future Volume (veh/h)	125	1690	35	0	0	0	0	95	45	120	235	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	139	1878	39				0	106	50	133	261	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	177	2570	617				0	498	394	293	558	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	324	4701	1129				0	1333	1055	573	1555	0
Grp Volume(v), veh/h	598	1419	39				0	106	50	203	191	0
Grp Sat Flow(s),veh/h/ln	1392	1211	1129				0	1333	1055	927	1142	0
Q Serve(g_s), s	30.8	27.6	2.1				0.0	4.1	2.3	12.8	11.6	0.0
Cycle Q Clear(g_c), s	30.8	27.6	2.1				0.0	4.1	2.3	16.8	11.6	0.0
Prop In Lane	0.23		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	425	426	0
V/C Ratio(X)	0.79	0.71	0.06				0.00	0.21	0.13	0.48	0.45	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	425	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	25.2	14.8				0.0	16.0	15.5	29.0	25.7	0.0
Incr Delay (d2), s/veh	8.0	2.2	0.2				0.0	1.0	0.7	3.8	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	9.7	0.7				0.0	1.6	0.8	4.5	4.1	0.0
LnGrp Delay(d),s/veh	34.5	27.5	15.0				0.0	17.0	16.1	32.8	29.1	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		2056						156			394	
Approach Delay, s/veh		29.3						16.7			31.0	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				6.1		32.8		18.8
Green Ext Time (p_c), s				2.3		5.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1140	965	0	0	0	0	0	0	225	1045	0
Future Volume (vph)	0	1140	965	0	0	0	0	0	0	225	1045	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4380	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4380	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1213	1027	0	0	0	0	0	0	239	1112	0
RTOR Reduction (vph)	0	10	10	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1717	503	0	0	0	0	0	0	215	1136	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.39	c0.50							0.17	c0.42	
v/s Ratio Perm												
v/c Ratio		0.73	0.94							0.45	1.10	
Uniform Delay, d1		13.4	16.3							17.1	23.0	
Progression Factor		0.62	0.69							0.50	0.57	
Incremental Delay, d2		1.5	20.7							2.7	57.5	
Delay (s)		9.9	32.0							11.2	70.6	
Level of Service		A	C							B	E	
Approach Delay (s)		15.0			0.0			0.0			61.2	
Approach LOS		B			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	130.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: 101 NBOff Irwin/Irwin & 2nd

Aegis San Rafael
Future (2040) Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	765	0	0	0	0	0	1340	460	0	0	0
Future Volume (vph)	600	765	0	0	0	0	0	1340	460	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	652	832	0	0	0	0	0	1457	500	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	56	0	0	0
Lane Group Flow (vph)	472	978	0	0	0	0	0	1457	444	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.43	0.26							c0.41			
v/c Ratio	0.93	0.56						0.84	0.91			
Uniform Delay, d1	18.8	14.5						18.1	19.1			
Progression Factor	0.51	0.41						1.00	1.00			
Incremental Delay, d2	20.1	1.0						5.2	24.1			
Delay (s)	29.6	6.9						23.3	43.2			
Level of Service	C	A						C	D			
Approach Delay (s)		14.4			0.0			28.4			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
1: Lincoln & Mission

Aegis San Rafael
Future (2040) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	425	5	45	500	140	10	445	40	10	365	310
Future Volume (veh/h)	205	425	5	45	500	140	10	445	40	10	365	310
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1790	1728
Adj Flow Rate, veh/h	211	438	5	46	515	144	10	459	41	10	376	320
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	494	1012	12	506	605	169	53	865	78	52	571	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.94	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1686	19	904	1278	357	18	2660	241	17	1756	1295
Grp Volume(v), veh/h	211	0	443	46	0	659	282	0	228	386	0	320
Grp Sat Flow(s),veh/h/ln	1629	0	1706	904	0	1636	1579	0	1341	1773	0	1295
Q Serve(g_s), s	5.1	0.0	11.2	0.4	0.0	8.9	0.9	0.0	7.3	0.0	0.0	17.7
Cycle Q Clear(g_c), s	5.1	0.0	11.2	1.5	0.0	8.9	18.6	0.0	7.3	14.8	0.0	17.7
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.18	0.03		1.00
Lane Grp Cap(c), veh/h	494	0	1023	506	0	774	560	0	436	622	0	421
V/C Ratio(X)	0.43	0.00	0.43	0.09	0.00	0.85	0.50	0.00	0.52	0.62	0.00	0.76
Avail Cap(c_a), veh/h	532	0	1023	506	0	774	560	0	436	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.79	0.00	0.79	0.93	0.00	0.93	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	0.0	8.6	1.2	0.0	1.4	10.7	0.0	10.8	23.2	0.0	24.2
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.3	0.0	9.2	3.0	0.0	4.2	4.6	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	5.5	0.1	0.0	4.5	3.6	0.0	3.1	8.1	0.0	7.7
LnGrp Delay(d),s/veh	9.7	0.0	10.0	1.5	0.0	10.6	13.7	0.0	15.0	27.8	0.0	36.4
LnGrp LOS	A		A	A		B	B		B	C		D
Approach Vol, veh/h		654			705			510			706	
Approach Delay, s/veh		9.9			10.0			14.3			31.7	
Approach LOS		A			A			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	10.1	40.9		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		13.2		20.6	7.1	10.9		19.7
Green Ext Time (p_c), s		14.7		2.9	0.1	12.4		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.8
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	475	5	5	690	0	10
Future Volume (vph)	475	5	5	690	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	500	5	5	726	0	11
RTOR Reduction (vph)	1	0	0	0	9	0
Lane Group Flow (vph)	504	0	0	731	2	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	35.7			61.4	11.4	
Effective Green, g (s)	35.7			52.6	11.4	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	721			1063	194	
v/s Ratio Prot	c0.31				c0.00	
v/s Ratio Perm				c0.45		
v/c Ratio	0.70			0.69	0.01	
Uniform Delay, d1	17.8			8.6	29.4	
Progression Factor	0.67			0.80	1.00	
Incremental Delay, d2	5.1			0.2	0.0	
Delay (s)	17.0			7.0	29.5	
Level of Service	B			A	C	
Approach Delay (s)	17.0			7.0	29.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	485	0	0	695	5	15
Future Volume (vph)	485	0	0	695	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	539	0	0	772	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	539	0	0	772	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.1			35.7	16.9	
Effective Green, g (s)	47.1			35.7	16.9	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	934			708	298	
v/s Ratio Prot	c0.34			c0.49	c0.01	
v/s Ratio Perm						
v/c Ratio	0.58			1.09	0.03	
Uniform Delay, d1	10.2			22.1	25.1	
Progression Factor	0.16			1.07	0.95	
Incremental Delay, d2	0.7			54.4	0.0	
Delay (s)	2.3			78.1	23.8	
Level of Service	A			E	C	
Approach Delay (s)	2.3			78.1	23.8	
Approach LOS	A			E	C	

Intersection Summary			
HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: Hetherton/101 SB Off Hetherton & Mission

Aegis San Rafael
Future (2040) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	460	40	30	170	0	0	0	0	290	1035	530
Future Volume (vph)	0	460	40	30	170	0	0	0	0	290	1035	530
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2834			1822						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2834			1642						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	479	42	31	177	0	0	0	0	302	1078	552
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	513	0	0	208	0	0	0	0	0	1380	552
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1133			656						1573	554
v/s Ratio Prot		c0.18									c0.46	
v/s Ratio Perm					0.13							c0.44
v/c Ratio		0.45			0.32						0.88	1.00
Uniform Delay, d1		17.6			16.5						16.7	22.4
Progression Factor		0.32			0.31						1.00	1.00
Incremental Delay, d2		1.1			1.0						7.2	37.4
Delay (s)		6.8			6.2						24.0	59.8
Level of Service		A			A						C	E
Approach Delay (s)		6.8			6.2			0.0			34.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 Signalized Intersection Summary
5: Irwin/101 NBOn Mission & Mission

Aegis San Rafael
Future (2040) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	350	0	0	135	425	70	1615	60	0	0	0
Future Volume (veh/h)	400	350	0	0	135	425	70	1615	60	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	408	357	0	0	138	434	71	1648	61			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	499	833	0	0	446	359	75	1833	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	151	3666	1670			
Grp Volume(v), veh/h	408	357	0	0	138	434	921	798	61			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1954	1863	1670			
Q Serve(g_s), s	6.6	6.1	0.0	0.0	4.6	18.0	37.3	33.3	2.5			
Cycle Q Clear(g_c), s	6.6	6.1	0.0	0.0	4.6	18.0	37.3	33.3	2.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	499	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.82	0.43	0.00	0.00	0.31	1.21	0.94	0.86	0.07			
Avail Cap(c_a), veh/h	499	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.7	7.6	0.0	0.0	25.8	31.0	32.3	30.6	17.7			
Incr Delay (d2), s/veh	13.9	1.6	0.0	0.0	1.8	117.5	18.0	10.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.7	3.5	0.0	0.0	2.8	19.6	25.1	19.8	1.2			
LnGrp Delay(d),s/veh	37.6	9.2	0.0	0.0	27.6	148.5	50.3	40.6	17.9			
LnGrp LOS	D	A			C	F	D	D	B			
Approach Vol, veh/h		765			572			1780				
Approach Delay, s/veh		24.3			119.4			44.8				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		39.3		8.1			8.6	20.0
Green Ext Time (p_c), s		0.0		3.5			1.2	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	285	50	10	245	35	25	410	40	60	340	35
Future Volume (veh/h)	70	285	50	10	245	35	25	410	40	60	340	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	74	303	53	11	261	37	27	436	43	64	362	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	204	364	64	138	362	51	107	1476	143	240	1256	129
Arrive On Green	0.28	0.28	0.27	0.56	0.56	0.54	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	871	1303	228	789	1296	184	89	2286	221	283	1945	200
Grp Volume(v), veh/h	74	0	356	11	0	298	280	0	226	244	0	219
Grp Sat Flow(s),veh/h/ln	871	0	1531	789	0	1479	1430	0	1166	1246	0	1183
Q Serve(g_s), s	6.5	0.0	17.5	1.0	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.4	0.0	17.5	18.5	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.12	0.10		0.19	0.26		0.17
Lane Grp Cap(c), veh/h	204	0	428	138	0	413	973	0	753	861	0	763
V/C Ratio(X)	0.36	0.00	0.83	0.08	0.00	0.72	0.29	0.00	0.30	0.28	0.00	0.29
Avail Cap(c_a), veh/h	417	0	804	332	0	777	973	0	753	861	0	763
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94	0.74	0.00	0.74
Uniform Delay (d), s/veh	33.1	0.0	27.1	24.7	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.6	0.1	0.0	0.9	0.7	0.0	1.0	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.5	0.2	0.0	4.7	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.5	0.0	28.7	24.8	0.0	16.3	0.7	0.0	1.0	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		430			309			506			463	
Approach Delay, s/veh		29.5			16.6			0.8			0.7	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.4		54.6		25.4		54.6
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		20.4		2.0		20.5		2.0
Green Ext Time (p_c), s		0.3		0.4		0.3		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		10.9
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	235	170	30	160	0	0	0	0	25	1035	120
Future Volume (vph)	0	235	170	30	160	0	0	0	0	25	1035	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1701			1817						4174	1117
Flt Permitted		1.00			0.91						1.00	1.00
Satd. Flow (perm)		1701			1659						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	255	185	33	174	0	0	0	0	27	1125	130
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	421	0	0	207	0	0	0	0	0	1152	130
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			775						1930	417
v/s Ratio Prot		c0.25									c0.28	
v/s Ratio Perm					0.12							0.12
v/c Ratio		0.53			0.27						0.60	0.31
Uniform Delay, d1		15.1			13.0						16.0	17.8
Progression Factor		0.85			0.86						0.37	0.45
Incremental Delay, d2		2.5			0.7						0.9	1.2
Delay (s)		15.3			11.8						6.8	9.3
Level of Service		B			B						A	A
Approach Delay (s)		15.3			11.8			0.0			7.1	
Approach LOS		B			B			A			A	

Intersection Summary				
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.61			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2	
Intersection Capacity Utilization	72.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	160	0	0	115	110	70	1400	20	5	0	0
Future Volume (veh/h)	105	160	0	0	115	110	70	1400	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	107	163	0	0	117	112	71	1429	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	405	688	0	0	285	273	63	1338	20			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1039	1620	0	0	671	642	127	2677	39			
Grp Volume(v), veh/h	107	163	0	0	0	229	796	0	724			
Grp Sat Flow(s),veh/h/ln	1039	1620	0	0	0	1312	1422	0	1421			
Q Serve(g_s), s	4.1	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Cycle Q Clear(g_c), s	13.9	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	405	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.26	0.24	0.00	0.00	0.00	0.41	1.12	0.00	1.02			
Avail Cap(c_a), veh/h	405	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.9	3.6	0.0	0.0	0.0	16.1	33.4	0.0	33.4			
Incr Delay (d2), s/veh	1.6	0.8	0.0	0.0	0.0	2.2	71.6	0.0	38.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	0.0	0.0	3.9	29.9	0.0	23.3			
LnGrp Delay(d),s/veh	8.5	4.4	0.0	0.0	0.0	18.4	105.0	0.0	72.0			
LnGrp LOS	A	A				B	F		F			
Approach Vol, veh/h		270			229			1520				
Approach Delay, s/veh		6.0			18.4			89.3				
Approach LOS		A			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		15.9				11.8
Green Ext Time (p_c), s		0.0		2.1				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	70.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	315	60	55	250	70	35	345	35	35	305	70
Future Volume (veh/h)	80	315	60	55	250	70	35	345	35	35	305	70
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	0.99		0.91	0.94		0.87	0.97		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	87	342	65	60	272	76	38	375	38	38	332	76
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	347	472	90	218	443	124	140	1236	123	137	1065	238
Arrive On Green	0.38	0.38	0.38	0.77	0.77	0.76	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	914	1227	233	872	1152	322	163	2288	228	157	1972	441
Grp Volume(v), veh/h	87	0	407	60	0	348	247	0	204	250	0	196
Grp Sat Flow(s),veh/h/ln	914	0	1460	872	0	1474	1456	0	1222	1430	0	1139
Q Serve(g_s), s	6.1	0.0	19.0	4.5	0.0	8.3	0.0	0.0	11.6	0.4	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	19.0	23.5	0.0	8.3	10.7	0.0	11.6	12.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.15		0.19	0.15		0.39
Lane Grp Cap(c), veh/h	347	0	562	218	0	567	839	0	661	825	0	616
V/C Ratio(X)	0.25	0.00	0.72	0.28	0.00	0.61	0.29	0.00	0.31	0.30	0.00	0.32
Avail Cap(c_a), veh/h	475	0	767	340	0	774	839	0	661	825	0	616
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	1.00	0.00	1.00	0.93	0.00	0.93	0.95	0.00	0.95
Uniform Delay (d), s/veh	22.9	0.0	21.0	16.2	0.0	6.7	19.5	0.0	19.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.7	0.0	1.1	0.8	0.0	1.1	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.9	1.1	0.0	3.3	4.9	0.0	4.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.2	0.0	22.9	16.9	0.0	7.8	20.3	0.0	21.0	0.9	0.0	1.3
LnGrp LOS	C		C	B		A	C		C	A		A
Approach Vol, veh/h		494			408			451			446	
Approach Delay, s/veh		22.9			9.1			20.6			1.1	
Approach LOS		C			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.8		46.2		33.8		46.2
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		21.0		13.6		25.5		14.0
Green Ext Time (p_c), s		4.4		3.9		4.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

HCM Signalized Intersection Capacity Analysis
10: Hetherton & 4th

Aegis San Rafael
Future (2040) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	60	80	220	0	0	0	0	120	1000	160
Future Volume (vph)	0	340	60	80	220	0	0	0	0	120	1000	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1579	1506						4304	1264
Flt Permitted		1.00	1.00	0.41	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	677	1506						4304	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	378	67	89	244	0	0	0	0	133	1111	178
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	378	30	89	244	0	0	0	0	0	1244	178
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	304	677						2022	483
v/s Ratio Prot		c0.23			0.16							
v/s Ratio Perm			0.03	0.13							0.29	0.14
v/c Ratio		0.50	0.06	0.29	0.36						0.62	0.37
Uniform Delay, d1		15.6	12.4	13.9	14.4						15.8	17.8
Progression Factor		1.00	1.00	0.93	0.95						0.40	0.47
Incremental Delay, d2		2.4	0.2	2.3	1.4						1.2	1.8
Delay (s)		18.0	12.7	15.3	15.2						7.6	10.3
Level of Service		B	B	B	B						A	B
Approach Delay (s)		17.2			15.2			0.0			7.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
11: Irwin & 4th

Aegis San Rafael
Future (2040) Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	280	0	0	210	40	95	1170	250	0	0	0
Future Volume (vph)	180	280	0	0	210	40	95	1170	250	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1448	1620			1387		1235	2494				
Flt Permitted	0.48	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	734	1620			1387		1235	2494				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	292	0	0	219	42	99	1219	260	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	188	292	0	0	252	0	99	1458	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	266	587			502		694	1402				
v/s Ratio Prot		0.18			0.18			c0.58				
v/s Ratio Perm	c0.26						0.08					
v/c Ratio	0.71	0.50			0.50		0.14	1.04				
Uniform Delay, d1	21.9	19.8			19.9		8.3	17.5				
Progression Factor	1.48	1.51			1.13		0.36	0.31				
Incremental Delay, d2	12.8	2.6			3.4		0.1	25.8				
Delay (s)	45.1	32.6			25.9		3.1	31.1				
Level of Service	D	C			C		A	C				
Approach Delay (s)		37.5			25.9			29.4			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	185	1425	45	85	15	0	0	35	10
Future Volume (vph)	0	0	0	185	1425	45	85	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3903			1381			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3903			1091			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	199	1532	48	91	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	199	1576	0	0	107	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2439			327			417	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.16				c0.10				
v/c Ratio				0.25	0.65			0.33			0.10	
Uniform Delay, d1				6.7	9.4			21.7			20.2	
Progression Factor				0.35	0.26			1.06			1.00	
Incremental Delay, d2				0.6	1.0			2.5			0.5	
Delay (s)				2.9	3.5			25.5			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.4			25.5			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	1480	120	30	285	0	0	240	135
Future Volume (veh/h)	0	0	0	85	1480	120	30	285	0	0	240	135
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1605	0	0	1536	1555
Adj Flow Rate, veh/h				88	1526	124	31	294	0	0	247	139
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	0	0	2	2
Cap, veh/h				128	2361	198	101	842	0	0	555	289
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				218	4018	337	142	2567	0	0	1723	857
Grp Volume(v), veh/h				643	536	558	166	159	0	0	217	169
Grp Sat Flow(s),veh/h/ln				1594	1461	1518	1249	1388	0	0	1459	1044
Q Serve(g_s), s				30.0	26.9	27.0	1.3	3.9	0.0	0.0	11.1	12.2
Cycle Q Clear(g_c), s				30.0	26.9	27.0	13.5	3.9	0.0	0.0	11.1	12.2
Prop In Lane				0.14		0.22	0.19		0.00	0.00		0.82
Lane Grp Cap(c), veh/h				937	858	892	475	468	0	0	492	352
V/C Ratio(X)				0.69	0.62	0.63	0.35	0.34	0.00	0.00	0.44	0.48
Avail Cap(c_a), veh/h				937	858	892	475	468	0	0	492	352
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.4	24.2	24.2	9.4	9.2	0.0	0.0	28.5	29.0
Incr Delay (d2), s/veh				4.1	3.4	3.3	2.0	2.0	0.0	0.0	2.8	4.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.3	11.7	12.2	1.7	1.7	0.0	0.0	4.9	4.0
LnGrp Delay(d),s/veh				29.5	27.6	27.5	11.5	11.2	0.0	0.0	31.3	33.7
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1738			325			386	
Approach Delay, s/veh					28.3			11.3			32.3	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				15.5		32.0		14.2
Green Ext Time (p_c), s				2.4		7.2		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	395	1415	0	0	0	0	0	740	445
Future Volume (vph)	0	0	0	395	1415	0	0	0	0	0	740	445
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	420	1505	0	0	0	0	0	787	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	252	1673	0	0	0	0	0	787	457
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.20	0.41							c0.43
v/c Ratio				0.35	0.72						0.53	1.24
Uniform Delay, d1				9.1	12.3						20.8	26.0
Progression Factor				0.68	0.67						1.18	1.21
Incremental Delay, d2				0.9	1.2						1.1	125.8
Delay (s)				7.0	9.5						25.7	157.3
Level of Service				A	A						C	F
Approach Delay (s)		0.0			9.1			0.0			75.1	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	815	195	990	1350	0	0	0	0
Future Volume (vph)	0	0	0	0	815	195	990	1350	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3474				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3474				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	849	203	1031	1406	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	19	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	849	186	496	1903	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.23		0.46	c0.55				
v/s Ratio Perm						0.16						
v/c Ratio					0.59	0.41	0.86	1.02				
Uniform Delay, d1					19.4	17.8	15.9	18.5				
Progression Factor					0.92	0.87	0.89	0.84				
Incremental Delay, d2					1.4	2.2	5.7	17.1				
Delay (s)					19.3	17.7	19.9	32.7				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			19.0			30.0			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1645	70	0	0	0	0	90	310	70	155	0
Future Volume (veh/h)	55	1645	70	0	0	0	0	90	310	70	155	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	57	1714	73				0	94	323	73	161	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	83	2677	117				0	540	436	338	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	151	4867	213				0	1440	1163	749	1304	0
Grp Volume(v), veh/h	534	841	469				0	94	323	73	161	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1366				0	1440	1163	749	1304	0
Q Serve(g_s), s	28.2	25.4	25.4				0.0	3.5	19.2	7.2	9.0	0.0
Cycle Q Clear(g_c), s	28.2	25.4	25.4				0.0	3.5	19.2	10.7	9.0	0.0
Prop In Lane	0.11		0.16				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1347	751				0	540	436	338	489	0
V/C Ratio(X)	0.69	0.62	0.62				0.00	0.17	0.74	0.22	0.33	0.00
Avail Cap(c_a), veh/h	779	1347	751				0	540	436	338	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	25.1	25.1				0.0	16.7	21.6	28.2	25.9	0.0
Incr Delay (d2), s/veh	4.9	2.2	3.9				0.0	0.7	10.8	1.5	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	9.0	10.4				0.0	1.5	7.4	1.6	3.5	0.0
LnGrp Delay(d),s/veh	31.2	27.3	29.0				0.0	17.4	32.4	29.6	27.7	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1844						417			234	
Approach Delay, s/veh		28.9						29.0			28.3	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				21.2		30.2		12.7
Green Ext Time (p_c), s				2.1		7.3		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1770	45	0	0	0	0	195	130	120	160	0
Future Volume (veh/h)	200	1770	45	0	0	0	0	195	130	120	160	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1351	0
Adj Flow Rate, veh/h	208	1844	47				0	203	135	125	167	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	271	2589	639				0	512	432	274	452	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	482	4603	1135				0	1412	1191	521	1309	0
Grp Volume(v), veh/h	606	1446	47				0	203	135	141	151	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	600	1168	0
Q Serve(g_s), s	32.8	29.4	2.7				0.0	8.6	6.5	9.4	3.8	0.0
Cycle Q Clear(g_c), s	32.8	29.4	2.7				0.0	8.6	6.5	17.9	3.8	0.0
Prop In Lane	0.34		1.00				0.00		1.00	0.89		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	302	424	0
V/C Ratio(X)	0.77	0.70	0.07				0.00	0.40	0.31	0.47	0.36	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	302	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	26.2	15.4				0.0	19.0	18.3	12.2	7.5	0.0
Incr Delay (d2), s/veh	7.1	2.0	0.2				0.0	2.3	1.9	5.1	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	10.4	0.9				0.0	3.7	2.4	2.6	1.4	0.0
LnGrp Delay(d),s/veh	34.7	28.2	15.6				0.0	21.3	20.2	17.3	9.9	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		2099						338			292	
Approach Delay, s/veh		29.8						20.9			13.5	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				10.6		34.8		19.9
Green Ext Time (p_c), s				2.7		6.6		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1215	1085	0	0	0	0	0	0	365	790	0
Future Volume (vph)	0	1215	1085	0	0	0	0	0	0	365	790	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4463	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4463	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1253	1119	0	0	0	0	0	0	376	814	0
RTOR Reduction (vph)	0	34	34	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1779	525	0	0	0	0	0	0	338	852	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2343	517							506	1080	
v/s Ratio Prot		0.40								0.27	c0.32	
v/s Ratio Perm			c0.53									
v/c Ratio		0.87dr	1.02							0.67	0.79	
Uniform Delay, d1		15.0	19.0							19.7	21.0	
Progression Factor		0.47	0.47							0.73	0.77	
Incremental Delay, d2		1.7	37.1							6.0	5.1	
Delay (s)		8.8	46.1							20.3	21.2	
Level of Service		A	D							C	C	
Approach Delay (s)		17.6			0.0			0.0			20.9	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	855	720	0	0	0	0	0	1505	660	0	0	0
Future Volume (vph)	855	720	0	0	0	0	0	1505	660	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3801						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3801						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	881	742	0	0	0	0	0	1552	680	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	82	0	0	0
Lane Group Flow (vph)	646	947	0	0	0	0	0	1552	598	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.40				
v/s Ratio Perm	c0.58	0.25							c0.55			
v/c Ratio	1.18	0.51						0.91	1.25			
Uniform Delay, d1	20.5	14.0						21.1	22.5			
Progression Factor	0.63	0.56						1.00	1.00			
Incremental Delay, d2	94.2	0.7						8.9	128.1			
Delay (s)	107.2	8.5						30.0	150.6			
Level of Service	F	A						C	F			
Approach Delay (s)		48.7			0.0			66.7			0.0	
Approach LOS		D			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	478	20	35	462	156	6	210	35	45	340	356
Future Volume (veh/h)	140	478	20	35	462	156	6	210	35	45	340	356
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.96	0.99		0.95	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1694	1710	1710	1676	1710	1800	1663	1728	1800	1769	1711
Adj Flow Rate, veh/h	146	498	21	36	481	162	6	219	36	47	354	371
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	0	1	1	4	4	4	2	2	1
Cap, veh/h	326	902	38	403	511	172	53	441	71	101	561	494
Arrive On Green	0.09	0.56	0.56	0.86	0.86	0.86	0.72	0.72	0.70	0.36	0.36	0.36
Sat Flow, veh/h	1597	1611	68	845	1186	400	11	1225	198	132	1558	1372
Grp Volume(v), veh/h	146	0	519	36	0	643	261	0	0	401	0	371
Grp Sat Flow(s),veh/h/ln	1597	0	1679	845	0	1586	1433	0	0	1690	0	1372
Q Serve(g_s), s	3.5	0.0	14.8	1.0	0.0	22.2	0.0	0.0	0.0	5.9	0.0	17.8
Cycle Q Clear(g_c), s	3.5	0.0	14.8	6.1	0.0	22.2	6.0	0.0	0.0	14.6	0.0	17.8
Prop In Lane	1.00		0.04	1.00		0.25	0.02		0.14	0.12		1.00
Lane Grp Cap(c), veh/h	326	0	940	403	0	684	565	0	0	662	0	494
V/C Ratio(X)	0.45	0.00	0.55	0.09	0.00	0.94	0.46	0.00	0.00	0.61	0.00	0.75
Avail Cap(c_a), veh/h	334	0	940	403	0	684	565	0	0	662	0	494
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.81	0.00	0.81	0.94	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	10.5	4.1	0.0	4.5	7.6	0.0	0.0	19.9	0.0	21.1
Incr Delay (d2), s/veh	0.4	0.0	2.3	0.4	0.0	19.5	2.6	0.0	0.0	4.1	0.0	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	7.4	0.2	0.0	11.7	2.7	0.0	0.0	7.7	0.0	8.1
LnGrp Delay(d),s/veh	14.3	0.0	12.8	4.5	0.0	24.0	10.2	0.0	0.0	24.0	0.0	31.1
LnGrp LOS	B		B	A		C	B			C		C
Approach Vol, veh/h		665			679			261			772	
Approach Delay, s/veh		13.2			22.9			10.2			27.4	
Approach LOS		B			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		45.0		30.0	9.7	35.3		30.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 41		25.4	7.0	* 31		25.4
Max Q Clear Time (g_c+I1), s		16.8		8.0	5.5	24.2		19.8
Green Ext Time (p_c), s		13.0		9.0	0.0	4.9		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	553	10	5	648	0	5
Future Volume (vph)	553	10	5	648	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			2.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.98	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1599			1603	1369	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1599			1603	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	576	10	5	675	0	5
RTOR Reduction (vph)	1	0	0	0	4	0
Lane Group Flow (vph)	585	0	0	680	1	0
Confl. Peds. (#/hr)		15	15		11	1
Heavy Vehicles (%)	1%	0%	0%	1%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	31.5			56.6	12.2	
Effective Green, g (s)	31.5			47.8	12.2	
Actuated g/C Ratio	0.42			0.64	0.16	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	671			1021	222	
v/s Ratio Prot	c0.37				c0.00	
v/s Ratio Perm				0.42		
v/c Ratio	0.87			0.67	0.00	
Uniform Delay, d1	19.9			8.6	26.3	
Progression Factor	0.79			0.71	1.00	
Incremental Delay, d2	12.6			0.1	0.0	
Delay (s)	28.4			6.2	26.3	
Level of Service	C			A	C	
Approach Delay (s)	28.4			6.2	26.3	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	553	0	0	653	5	15
Future Volume (vph)	553	0	0	653	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	2.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	614	0	0	726	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	614	0	0	726	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	43.7			31.5	16.3	
Effective Green, g (s)	43.7			31.5	16.3	
Actuated g/C Ratio	0.58			0.42	0.22	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	925			666	306	
v/s Ratio Prot	c0.39			c0.46	c0.01	
v/s Ratio Perm						
v/c Ratio	0.66			1.09	0.03	
Uniform Delay, d1	10.7			21.8	23.1	
Progression Factor	0.35			1.22	1.25	
Incremental Delay, d2	1.0			55.2	0.0	
Delay (s)	4.8			81.7	29.0	
Level of Service	A			F	C	
Approach Delay (s)	4.8			81.7	29.0	
Approach LOS	A			F	C	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	511	56	30	185	0	0	0	0	195	935	463
Future Volume (vph)	0	511	56	30	185	0	0	0	0	195	935	463
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.91
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2798			1791						2911	1244
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2798			1613						2911	1244
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	532	58	31	193	0	0	0	0	203	974	482
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	579	0	0	224	0	0	0	0	0	1177	482
Confl. Peds. (#/hr)	9		11	11		9	22		1	1		22
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	4%	5%	1%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.0			34.0						35.0	28.0
Actuated g/C Ratio		0.45			0.45						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1268			731						1358	464
v/s Ratio Prot		c0.21									c0.40	
v/s Ratio Perm					0.14							c0.39
v/c Ratio		0.46			0.31						0.87	1.04
Uniform Delay, d1		14.1			13.0						17.9	23.5
Progression Factor		0.65			1.69						1.00	1.00
Incremental Delay, d2		0.9			0.9						7.6	52.2
Delay (s)		10.2			23.0						25.6	75.7
Level of Service		B			C						C	E
Approach Delay (s)		10.2			23.0			0.0			40.1	
Approach LOS		B			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	426	275	0	0	141	415	79	1260	40	0	0	0
Future Volume (veh/h)	426	275	0	0	141	415	79	1260	40	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1882	1904	0	0	1941	1864	1980	1905	1980			
Adj Flow Rate, veh/h	453	293	0	0	150	441	84	1340	43			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	1	4	0	0	2	2	0	4	0			
Cap, veh/h	525	888	0	0	518	417	95	1585	752			
Arrive On Green	0.05	0.15	0.00	0.00	0.27	0.27	0.15	0.15	0.15			
Sat Flow, veh/h	1792	1904	0	0	1941	1562	209	3495	1659			
Grp Volume(v), veh/h	453	293	0	0	150	441	762	662	43			
Grp Sat Flow(s),veh/h/ln	1792	1904	0	0	1941	1562	1894	1810	1659			
Q Serve(g_s), s	8.7	10.3	0.0	0.0	4.6	20.0	29.6	26.5	1.7			
Cycle Q Clear(g_c), s	8.7	10.3	0.0	0.0	4.6	20.0	29.6	26.5	1.7			
Prop In Lane	1.00		0.00	0.00		1.00	0.11		1.00			
Lane Grp Cap(c), veh/h	525	888	0	0	518	417	859	820	752			
V/C Ratio(X)	0.86	0.33	0.00	0.00	0.29	1.06	0.89	0.81	0.06			
Avail Cap(c_a), veh/h	525	888	0	0	518	417	859	820	752			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	29.7	21.3	0.0	0.0	21.9	27.5	30.0	28.7	18.1			
Incr Delay (d2), s/veh	16.9	1.0	0.0	0.0	1.4	60.4	13.1	8.3	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.7	5.7	0.0	0.0	2.7	15.6	18.7	15.2	0.8			
LnGrp Delay(d),s/veh	46.6	22.3	0.0	0.0	23.3	87.9	43.2	37.1	18.3			
LnGrp LOS	D	C			C	F	D	D	B			
Approach Vol, veh/h		746			591			1467				
Approach Delay, s/veh		37.0			71.5			39.7				
Approach LOS		D			E			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		37.0		38.0			15.0	23.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 33		* 34			* 11	* 19
Max Q Clear Time (g_c+I1), s		31.6		12.3			10.7	22.0
Green Ext Time (p_c), s		0.9		3.4			0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	345	25	20	245	35	10	201	25	25	370	20
Future Volume (veh/h)	40	345	25	20	245	35	10	201	25	25	370	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		0.95	0.98		0.95	0.98		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1558	1530	1358	1517	1530	1440	1474	1469	1440	1500	1469
Adj Flow Rate, veh/h	43	375	27	22	266	38	11	218	27	27	402	22
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	6	1	1	4	4	4	2	2	2
Cap, veh/h	222	488	35	176	440	63	61	643	77	74	691	37
Arrive On Green	0.34	0.34	0.33	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	868	1430	103	750	1290	184	20	1110	133	39	1193	63
Grp Volume(v), veh/h	43	0	402	22	0	304	256	0	0	451	0	0
Grp Sat Flow(s),veh/h/ln	868	0	1533	750	0	1474	1263	0	0	1296	0	0
Q Serve(g_s), s	3.3	0.0	17.6	2.1	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.1	0.0	17.6	19.7	0.0	14.7	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.13	0.04		0.11	0.06		0.05
Lane Grp Cap(c), veh/h	222	0	523	176	0	503	781	0	0	801	0	0
V/C Ratio(X)	0.19	0.00	0.77	0.12	0.00	0.60	0.33	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	284	0	634	230	0	609	781	0	0	801	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.00	0.96	0.95	0.00	0.00	0.69	0.00	0.00
Uniform Delay (d), s/veh	28.9	0.0	22.1	39.2	0.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	4.7	0.3	0.0	1.1	1.1	0.0	0.0	2.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	8.0	0.5	0.0	6.2	0.2	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	29.3	0.0	26.8	39.5	0.0	29.6	1.1	0.0	0.0	2.0	0.0	0.0
LnGrp LOS	C		C	D		C	A			A		
Approach Vol, veh/h		445			326			256			451	
Approach Delay, s/veh		27.0			30.3			1.1			2.0	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		28.6		46.4		28.6		46.4
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		29.4		36.4		29.4		36.4
Max Q Clear Time (g_c+I1), s		20.1		2.0		21.7		2.0
Green Ext Time (p_c), s		2.6		3.4		2.3		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	285	95	45	225	0	0	0	0	25	926	75
Future Volume (vph)	0	285	95	45	225	0	0	0	0	25	926	75
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.93
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1734			1796						4095	1094
Flt Permitted		1.00			0.90						1.00	1.00
Satd. Flow (perm)		1734			1623						4095	1094
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	306	102	48	242	0	0	0	0	27	996	81
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	392	0	0	290	0	0	0	0	0	1023	81
Confl. Peds. (#/hr)	22		11	11		22	26		5	5		26
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	2%	1%	3%	1%	0%	0%	0%	0%	0%	4%	4%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		32.8			32.8						33.4	26.4
Effective Green, g (s)		34.4			34.4						35.0	27.9
Actuated g/C Ratio		0.46			0.46						0.47	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			744						1911	406
v/s Ratio Prot		c0.23									c0.25	
v/s Ratio Perm					0.18							0.07
v/c Ratio		0.49			0.39						0.54	0.20
Uniform Delay, d1		14.2			13.4						14.2	16.0
Progression Factor		0.32			1.29						0.17	0.25
Incremental Delay, d2		2.1			1.2						0.6	0.6
Delay (s)		6.6			18.5						3.1	4.6
Level of Service		A			B						A	A
Approach Delay (s)		6.6			18.5			0.0			3.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	95	0	0	120	20	155	1094	10	0	0	0
Future Volume (veh/h)	215	95	0	0	120	20	155	1094	10	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1588	1573	0	0	1590	1620	1620	1545	1620			
Adj Flow Rate, veh/h	236	104	0	0	132	22	170	1202	11			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	3	0	0	2	2	0	5	0			
Cap, veh/h	370	524	0	0	393	66	188	1400	13			
Arrive On Green	0.11	0.11	0.00	0.00	0.33	0.33	0.19	0.19	0.19			
Sat Flow, veh/h	1101	1573	0	0	1180	197	320	2387	23			
Grp Volume(v), veh/h	236	104	0	0	0	154	722	0	661			
Grp Sat Flow(s),veh/h/ln	1101	1573	0	0	0	1377	1359	0	1371			
Q Serve(g_s), s	15.9	4.5	0.0	0.0	0.0	6.3	38.9	0.0	34.7			
Cycle Q Clear(g_c), s	22.2	4.5	0.0	0.0	0.0	6.3	38.9	0.0	34.7			
Prop In Lane	1.00		0.00	0.00		0.14	0.24		0.02			
Lane Grp Cap(c), veh/h	370	524	0	0	0	459	797	0	804			
V/C Ratio(X)	0.64	0.20	0.00	0.00	0.00	0.34	0.91	0.00	0.82			
Avail Cap(c_a), veh/h	370	524	0	0	0	459	797	0	804			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	35.2	24.3	0.0	0.0	0.0	18.8	28.2	0.0	26.5			
Incr Delay (d2), s/veh	8.1	0.8	0.0	0.0	0.0	2.0	15.7	0.0	9.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.7	2.1	0.0	0.0	0.0	2.6	18.1	0.0	15.2			
LnGrp Delay(d),s/veh	43.4	25.1	0.0	0.0	0.0	20.8	43.9	0.0	35.8			
LnGrp LOS	D	C				C	D		D			
Approach Vol, veh/h		340			154			1383				
Approach Delay, s/veh		37.8			20.8			40.0				
Approach LOS		D			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		47.0		28.0				28.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		42.4		23.4				23.4
Max Q Clear Time (g_c+I1), s		40.9		24.2				8.3
Green Ext Time (p_c), s		1.0		0.0				2.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	190	35	60	255	25	10	171	65	45	315	45
Future Volume (veh/h)	40	190	35	60	255	25	10	171	65	45	315	45
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.90	0.97		0.91	0.97		0.92	0.98		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1500	1517	1620	1528	1513	1620	1620	1569	1555	1620	1580	1555
Adj Flow Rate, veh/h	44	209	38	66	280	27	11	188	71	49	346	49
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	8	3	3	6	7	7	2	2	2	2	2	2
Cap, veh/h	199	388	71	262	425	41	61	562	204	110	645	87
Arrive On Green	0.32	0.32	0.31	0.10	0.10	0.10	0.20	0.20	0.20	1.00	1.00	1.00
Sat Flow, veh/h	887	1226	223	945	1345	130	19	931	339	95	1069	144
Grp Volume(v), veh/h	44	0	247	66	0	307	270	0	0	444	0	0
Grp Sat Flow(s),veh/h/ln	887	0	1449	945	0	1474	1288	0	0	1308	0	0
Q Serve(g_s), s	3.5	0.0	10.5	5.1	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	10.5	15.6	0.0	15.0	13.4	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.09	0.04		0.26	0.11		0.11
Lane Grp Cap(c), veh/h	199	0	458	262	0	466	828	0	0	843	0	0
V/C Ratio(X)	0.22	0.00	0.54	0.25	0.00	0.66	0.33	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	273	0	579	341	0	590	828	0	0	843	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.00	0.94	0.96	0.00	0.96	0.75	0.00	0.00	0.75	0.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	21.1	35.0	0.0	29.7	17.3	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.9	0.5	0.0	1.7	0.8	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	4.3	1.4	0.0	6.4	5.0	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	31.3	0.0	22.1	35.5	0.0	31.4	18.0	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C		C	D		C	B			A		
Approach Vol, veh/h		291			373			270			444	
Approach Delay, s/veh		23.5			32.1			18.0			1.8	
Approach LOS		C			C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.7		48.3		26.7		48.3
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 29		* 38		* 29		* 38
Max Q Clear Time (g_c+I1), s		20.5		15.4		17.6		2.0
Green Ext Time (p_c), s		2.1		3.4		2.5		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	150	90	115	255	0	0	0	0	75	856	120
Future Volume (vph)	0	150	90	115	255	0	0	0	0	75	856	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.96	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.98	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1625	1169	1648	1450						4228	1264
Flt Permitted		1.00	1.00	0.64	1.00						1.00	1.00
Satd. Flow (perm)		1625	1169	1102	1450						4228	1264
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	161	97	124	274	0	0	0	0	81	920	129
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	161	53	124	274	0	0	0	0	0	1001	129
Confl. Peds. (#/hr)	25		22	22		25	32		17	17		32
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	3%	6%	1%	8%	0%	0%	0%	0%	3%	4%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		32.8	32.8	32.8	32.8						33.4	26.4
Effective Green, g (s)		34.0	34.0	34.0	34.0						34.6	27.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.46	0.37
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		736	529	499	657						1950	465
v/s Ratio Prot		0.10			c0.19							
v/s Ratio Perm			0.05	0.11							0.24	0.10
v/c Ratio		0.22	0.10	0.25	0.42						0.51	0.28
Uniform Delay, d1		12.4	11.7	12.6	13.8						14.3	16.7
Progression Factor		1.81	3.45	0.68	0.76						1.63	1.51
Incremental Delay, d2		0.7	0.4	0.9	1.6						0.8	1.3
Delay (s)		23.2	40.9	9.6	12.0						24.1	26.4
Level of Service		C	D	A	B						C	C
Approach Delay (s)		29.9			11.3			0.0			24.3	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	185	0	0	275	135	95	1054	55	0	0	0
Future Volume (vph)	45	185	0	0	275	135	95	1054	55	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00				
Frt	1.00	1.00			0.96		1.00	0.99				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1438	1588			1327		1226	2455				
Flt Permitted	0.32	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	486	1588			1327		1226	2455				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	47	195	0	0	289	142	100	1109	58	0	0	0
RTOR Reduction (vph)	0	0	0	0	23	0	0	5	0	0	0	0
Lane Group Flow (vph)	47	195	0	0	408	0	100	1162	0	0	0	0
Confl. Peds. (#/hr)	10		11	11		10			10	10		
Confl. Bikes (#/hr)			1			4						
Heavy Vehicles (%)	3%	2%	0%	0%	3%	3%	13%	5%	4%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	28.8	28.8			28.8		37.8	37.8				
Effective Green, g (s)	30.0	30.0			30.0		39.0	39.0				
Actuated g/C Ratio	0.40	0.40			0.40		0.52	0.52				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	194	635			530		637	1276				
v/s Ratio Prot		0.12			c0.31			c0.47				
v/s Ratio Perm	0.10						0.08					
v/c Ratio	0.24	0.31			0.77		0.16	0.91				
Uniform Delay, d1	14.9	15.4			19.5		9.4	16.4				
Progression Factor	1.70	1.67			0.88		0.76	0.64				
Incremental Delay, d2	2.8	1.2			8.8		0.3	6.1				
Delay (s)	28.2	26.9			25.9		7.4	16.6				
Level of Service	C	C			C		A	B				
Approach Delay (s)		27.2			25.9			15.9			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	350	1365	20	80	5	0	0	30	10
Future Volume (vph)	0	0	0	350	1365	20	80	5	0	0	30	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.94	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1220	3771			1326			1387	
Flt Permitted				0.95	1.00			0.75			1.00	
Satd. Flow (perm)				1220	3771			1035			1387	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	389	1517	22	89	6	0	0	33	11
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	389	1537	0	0	95	0	0	36	0
Confl. Peds. (#/hr)	27		36	36		27			42	42		
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	0%	0%	0%	2%	4%	0%	4%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				45.8	45.8			20.8			20.8	
Effective Green, g (s)				47.0	47.0			22.0			22.0	
Actuated g/C Ratio				0.63	0.63			0.29			0.29	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				764	2363			303			406	
v/s Ratio Prot					c0.41						0.03	
v/s Ratio Perm				0.32				c0.09				
v/c Ratio				0.51	0.65			0.31			0.09	
Uniform Delay, d1				7.7	8.8			20.6			19.2	
Progression Factor				0.29	0.31			0.65			1.00	
Incremental Delay, d2				1.5	0.8			2.5			0.4	
Delay (s)				3.7	3.6			15.9			19.7	
Level of Service				A	A			B			B	
Approach Delay (s)		0.0			3.6			15.9			19.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	155	1530	40	25	171	0	0	265	155
Future Volume (veh/h)	0	0	0	155	1530	40	25	171	0	0	265	155
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.92	1.00		1.00	1.00		0.91
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1557	1620	1620	1539	0	0	1506	1555
Adj Flow Rate, veh/h				174	1719	45	28	192	0	0	298	174
Adj No. of Lanes				0	3	0	0	1	0	0	1	0
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				0	4	0	5	5	0	0	4	4
Cap, veh/h				217	2292	62	54	231	0	0	263	154
Arrive On Green				0.19	0.19	0.19	0.11	0.11	0.00	0.00	0.11	0.11
Sat Flow, veh/h				379	3997	108	0	668	0	0	759	443
Grp Volume(v), veh/h				707	592	639	220	0	0	0	0	472
Grp Sat Flow(s),veh/h/ln				1538	1417	1527	668	0	0	0	0	1203
Q Serve(g_s), s				32.9	29.5	29.5	0.0	0.0	0.0	0.0	0.0	26.0
Cycle Q Clear(g_c), s				32.9	29.5	29.5	26.0	0.0	0.0	0.0	0.0	26.0
Prop In Lane				0.25		0.07	0.13		0.00	0.00		0.37
Lane Grp Cap(c), veh/h				882	813	876	286	0	0	0	0	417
V/C Ratio(X)				0.80	0.73	0.73	0.77	0.00	0.00	0.00	0.00	1.13
Avail Cap(c_a), veh/h				882	813	876	286	0	0	0	0	417
HCM Platoon Ratio				0.33	0.33	0.33	0.33	0.33	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				26.3	24.9	24.9	26.6	0.0	0.0	0.0	0.0	33.2
Incr Delay (d2), s/veh				7.6	5.7	5.3	18.0	0.0	0.0	0.0	0.0	85.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				15.9	12.9	13.8	5.7	0.0	0.0	0.0	0.0	18.5
LnGrp Delay(d),s/veh				33.9	30.6	30.3	44.6	0.0	0.0	0.0	0.0	118.4
LnGrp LOS				C	C	C	D					F
Approach Vol, veh/h					1938			220			472	
Approach Delay, s/veh					31.7			44.6			118.4	
Approach LOS					C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				29.0		46.0		29.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				24.5		41.5		24.5
Max Q Clear Time (g_c+I1), s				28.0		34.9		28.0
Green Ext Time (p_c), s				0.0		4.7		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		48.3
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	465	1455	0	0	0	0	0	766	415
Future Volume (vph)	0	0	0	465	1455	0	0	0	0	0	766	415
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.88
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	0.99						1.00	1.00
Satd. Flow (prot)				1234	4014						4151	1042
Flt Permitted				0.95	0.99						1.00	1.00
Satd. Flow (perm)				1234	4014						4151	1042
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	484	1516	0	0	0	0	0	798	432
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	290	1710	0	0	0	0	0	798	422
Confl. Peds. (#/hr)	49		43	43		49	104		1	1		104
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%	0%	0%	0%	0%	3%	6%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				39.0	39.0						27.0	27.0
Effective Green, g (s)				40.0	40.0						29.0	29.0
Actuated g/C Ratio				0.53	0.53						0.39	0.39
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				658	2140						1605	402
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.23	0.43							c0.40
v/c Ratio				0.44	0.80						0.50	1.05
Uniform Delay, d1				10.7	14.2						17.5	23.0
Progression Factor				0.71	0.65						1.61	1.58
Incremental Delay, d2				1.1	1.6						1.0	56.5
Delay (s)				8.6	10.8						29.1	92.8
Level of Service				A	B						C	F
Approach Delay (s)		0.0			10.5			0.0			51.5	
Approach LOS		A			B			A			D	

Intersection Summary				
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	112.4%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1005	231	920	1138	0	0	0	0
Future Volume (vph)	0	0	0	0	1005	231	920	1138	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.97	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3624	1146	1056	3381				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3624	1146	1056	3381				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1092	251	1000	1237	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	34	10	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1092	217	490	1727	0	0	0	0
Confl. Peds. (#/hr)	23		24	24		23			12	12		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	4%	6%	4%	5%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					25.5	25.5	40.5	40.5				
Effective Green, g (s)					27.0	27.0	42.0	42.0				
Actuated g/C Ratio					0.36	0.36	0.56	0.56				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1304	412	591	1893				
v/s Ratio Prot					c0.30		0.46	c0.51				
v/s Ratio Perm						0.19						
v/c Ratio					0.84	0.53	0.83	0.91				
Uniform Delay, d1					22.0	19.0	13.6	14.8				
Progression Factor					0.79	0.67	0.78	0.75				
Incremental Delay, d2					4.9	3.5	7.8	5.1				
Delay (s)					22.2	16.2	18.4	16.2				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			21.1			16.7			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1590	90	0	0	0	0	55	206	55	300	0
Future Volume (veh/h)	40	1590	90	0	0	0	0	55	206	55	300	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1411	1440				0	1385	1333	1257	1355	0
Adj Flow Rate, veh/h	43	1710	97				0	59	222	59	323	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0				0	4	8	10	2	0
Cap, veh/h	60	2549	148				0	535	432	373	524	0
Arrive On Green	0.18	0.18	0.18				0.00	0.39	0.39	0.77	0.77	0.00
Sat Flow, veh/h	112	4779	278				0	1385	1117	772	1355	0
Grp Volume(v), veh/h	538	846	466				0	59	222	59	323	0
Grp Sat Flow(s),veh/h/ln	1405	1213	1338				0	1385	1117	772	1355	0
Q Serve(g_s), s	27.1	24.3	24.3				0.0	2.0	11.4	1.9	7.7	0.0
Cycle Q Clear(g_c), s	27.1	24.3	24.3				0.0	2.0	11.4	4.0	7.7	0.0
Prop In Lane	0.08		0.21				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	749	1294	714				0	535	432	373	524	0
V/C Ratio(X)	0.72	0.65	0.65				0.00	0.11	0.51	0.16	0.62	0.00
Avail Cap(c_a), veh/h	749	1294	714				0	535	432	373	524	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	24.4	24.5				0.0	14.7	17.6	6.0	6.1	0.0
Incr Delay (d2), s/veh	5.8	2.6	4.6				0.0	0.4	4.3	0.9	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	8.7	9.9				0.0	0.8	4.0	0.5	3.4	0.0
LnGrp Delay(d),s/veh	31.4	27.0	29.1				0.0	15.2	21.9	6.9	11.4	0.0
LnGrp LOS	C	C	C					B	C	A	B	
Approach Vol, veh/h		1850						281			382	
Approach Delay, s/veh		28.8						20.5			10.7	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		43.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		38.8		* 28
Max Q Clear Time (g_c+I1), s				13.4		29.1		9.7
Green Ext Time (p_c), s				2.8		6.1		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	1690	35	0	0	0	0	95	45	120	235	0
Future Volume (veh/h)	126	1690	35	0	0	0	0	95	45	120	235	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1408	1371				0	1333	1263	1382	1321	0
Adj Flow Rate, veh/h	140	1878	39				0	106	50	133	261	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.90	0.90	0.90				0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	2	5				0	8	14	6	6	0
Cap, veh/h	178	2568	617				0	498	394	293	558	0
Arrive On Green	0.18	0.18	0.18				0.00	0.37	0.37	0.12	0.12	0.00
Sat Flow, veh/h	326	4698	1129				0	1333	1055	573	1555	0
Grp Volume(v), veh/h	598	1420	39				0	106	50	203	191	0
Grp Sat Flow(s),veh/h/ln	1392	1211	1129				0	1333	1055	927	1142	0
Q Serve(g_s), s	30.8	27.6	2.1				0.0	4.1	2.3	12.8	11.6	0.0
Cycle Q Clear(g_c), s	30.8	27.6	2.1				0.0	4.1	2.3	16.8	11.6	0.0
Prop In Lane	0.23		1.00				0.00		1.00	0.65		0.00
Lane Grp Cap(c), veh/h	761	1986	617				0	498	394	425	426	0
V/C Ratio(X)	0.79	0.72	0.06				0.00	0.21	0.13	0.48	0.45	0.00
Avail Cap(c_a), veh/h	761	1986	617				0	498	394	425	426	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	25.2	14.8				0.0	16.0	15.5	29.0	25.7	0.0
Incr Delay (d2), s/veh	8.0	2.2	0.2				0.0	1.0	0.7	3.8	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	9.7	0.7				0.0	1.6	0.8	4.5	4.1	0.0
LnGrp Delay(d),s/veh	34.6	27.5	15.0				0.0	17.0	16.1	32.8	29.1	0.0
LnGrp LOS	C	C	B					B	B	C	C	
Approach Vol, veh/h		2057						156			394	
Approach Delay, s/veh		29.3						16.7			31.0	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				31.0		44.0		31.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 27		39.8		* 27
Max Q Clear Time (g_c+I1), s				6.1		32.8		18.8
Green Ext Time (p_c), s				2.3		5.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1140	965	0	0	0	0	0	0	225	1046	0
Future Volume (vph)	0	1140	965	0	0	0	0	0	0	225	1046	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	1.00							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.96	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4380	1008							1229	2675	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4380	1008							1229	2675	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1213	1027	0	0	0	0	0	0	239	1113	0
RTOR Reduction (vph)	0	10	10	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1717	503	0	0	0	0	0	0	215	1137	0
Confl. Peds. (#/hr)	20					20						
Heavy Vehicles (%)	0%	6%	1%	0%	0%	0%	0%	0%	0%	4%	4%	0%
Turn Type		NA	Prot							Split	NA	
Protected Phases		2	2							8	8	
Permitted Phases												
Actuated Green, G (s)		38.5	38.5							27.5	27.5	
Effective Green, g (s)		40.0	40.0							29.0	29.0	
Actuated g/C Ratio		0.53	0.53							0.39	0.39	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2336	537							475	1034	
v/s Ratio Prot		0.39	c0.50							0.17	c0.43	
v/s Ratio Perm												
v/c Ratio		0.73	0.94							0.45	1.10	
Uniform Delay, d1		13.4	16.3							17.1	23.0	
Progression Factor		0.62	0.69							0.50	0.57	
Incremental Delay, d2		1.5	20.7							2.7	57.9	
Delay (s)		9.9	32.0							11.2	71.0	
Level of Service		A	C							B	E	
Approach Delay (s)		15.0			0.0			0.0			61.5	
Approach LOS		B			A			A			E	

Intersection Summary				
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	130.5%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: 101 NBOff Irwin/Irwin & 2nd

Aegis San Rafael
Future (2040) With-Project Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	765	0	0	0	0	0	1343	460	0	0	0
Future Volume (vph)	600	765	0	0	0	0	0	1343	460	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1091	3723						3817	1073			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1091	3723						3817	1073			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	652	832	0	0	0	0	0	1460	500	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	56	0	0	0
Lane Group Flow (vph)	472	978	0	0	0	0	0	1460	444	0	0	0
Confl. Peds. (#/hr)	37					37			34	34		
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	7%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	33.8	33.8						31.8	31.8			
Effective Green, g (s)	35.0	35.0						34.0	34.0			
Actuated g/C Ratio	0.47	0.47						0.45	0.45			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	509	1737						1730	486			
v/s Ratio Prot								0.38				
v/s Ratio Perm	c0.43	0.26							c0.41			
v/c Ratio	0.93	0.56						0.84	0.91			
Uniform Delay, d1	18.8	14.5						18.2	19.1			
Progression Factor	0.51	0.41						1.00	1.00			
Incremental Delay, d2	20.1	1.0						5.2	24.1			
Delay (s)	29.6	6.9						23.4	43.2			
Level of Service	C	A						C	D			
Approach Delay (s)		14.4			0.0			28.4			0.0	
Approach LOS		B			A			C			A	

Intersection Summary				
HCM 2000 Control Delay		22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio		0.92		
Actuated Cycle Length (s)		75.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization		72.4%	ICU Level of Service	C
Analysis Period (min)		15		
c Critical Lane Group				

HCM 2010 Signalized Intersection Summary
1: Lincoln & Mission

Aegis San Rafael
Future (2040) With-Project Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	434	6	45	504	141	11	445	40	10	365	311
Future Volume (veh/h)	206	434	6	45	504	141	11	445	40	10	365	311
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		0.97	0.99		0.94	0.98		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1710	1710	1710	1710	1710	1800	1713	1728	1800	1790	1728
Adj Flow Rate, veh/h	212	447	6	46	520	145	11	459	41	10	376	321
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
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
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	1	1	1
Cap, veh/h	488	1009	14	498	605	169	53	854	78	52	571	421
Arrive On Green	0.09	0.60	0.60	0.95	0.95	0.94	0.65	0.65	0.63	0.32	0.32	0.32
Sat Flow, veh/h	1629	1682	23	896	1279	357	20	2628	240	17	1756	1295
Grp Volume(v), veh/h	212	0	453	46	0	665	281	0	230	386	0	321
Grp Sat Flow(s),veh/h/ln	1629	0	1705	896	0	1636	1547	0	1341	1773	0	1295
Q Serve(g_s), s	5.1	0.0	11.6	0.4	0.0	9.5	1.1	0.0	7.3	0.0	0.0	17.8
Cycle Q Clear(g_c), s	5.1	0.0	11.6	1.8	0.0	9.5	18.9	0.0	7.3	14.8	0.0	17.8
Prop In Lane	1.00		0.01	1.00		0.22	0.04		0.18	0.03		1.00
Lane Grp Cap(c), veh/h	488	0	1023	498	0	774	550	0	436	622	0	421
V/C Ratio(X)	0.43	0.00	0.44	0.09	0.00	0.86	0.51	0.00	0.53	0.62	0.00	0.76
Avail Cap(c_a), veh/h	525	0	1023	498	0	774	550	0	436	622	0	421
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.78	0.00	0.78	0.93	0.00	0.93	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	8.7	1.3	0.0	1.4	10.7	0.0	10.8	23.2	0.0	24.2
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.3	0.0	9.6	3.2	0.0	4.2	4.6	0.0	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	5.8	0.1	0.0	4.7	3.6	0.0	3.1	8.1	0.0	7.8
LnGrp Delay(d),s/veh	9.8	0.0	10.1	1.5	0.0	11.1	13.9	0.0	15.0	27.8	0.0	36.5
LnGrp LOS	A		B	A		B	B		B	C		D
Approach Vol, veh/h		665			711			511			707	
Approach Delay, s/veh		10.0			10.4			14.4			31.8	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		51.0		29.0	10.1	40.9		29.0
Change Period (Y+Rc), s		* 4.2		4.6	3.0	* 4.2		4.6
Max Green Setting (Gmax), s		* 47		24.4	9.0	* 35		24.4
Max Q Clear Time (g_c+I1), s		13.6		20.9	7.1	11.5		19.8
Green Ext Time (p_c), s		14.9		2.7	0.1	12.4		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	484	5	5	694	0	10
Future Volume (vph)	484	5	5	694	0	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			3.0	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	0.97	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.86	
Flt Protected	1.00			1.00	1.00	
Satd. Flow (prot)	1617			1619	1365	
Flt Permitted	1.00			1.00	1.00	
Satd. Flow (perm)	1617			1618	1365	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	509	5	5	731	0	11
RTOR Reduction (vph)	1	0	0	0	9	0
Lane Group Flow (vph)	513	0	0	736	2	0
Confl. Peds. (#/hr)		10	10		24	1
Confl. Bikes (#/hr)		4				1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			3 4 6	8	
Permitted Phases			3 4 6			
Actuated Green, G (s)	35.6			61.3	11.5	
Effective Green, g (s)	35.6			52.5	11.5	
Actuated g/C Ratio	0.45			0.66	0.14	
Clearance Time (s)	4.6				4.2	
Vehicle Extension (s)	3.0				3.0	
Lane Grp Cap (vph)	719			1061	196	
v/s Ratio Prot	c0.32				c0.00	
v/s Ratio Perm				c0.45		
v/c Ratio	0.71			0.69	0.01	
Uniform Delay, d1	18.1			8.7	29.4	
Progression Factor	0.66			0.82	1.00	
Incremental Delay, d2	5.5			0.2	0.0	
Delay (s)	17.4			7.3	29.4	
Level of Service	B			A	C	
Approach Delay (s)	17.4			7.3	29.4	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	494	0	0	699	5	15
Future Volume (vph)	494	0	0	699	5	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.6			4.6	3.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.90	
Flt Protected	1.00			1.00	0.99	
Satd. Flow (prot)	1588			1588	1411	
Flt Permitted	1.00			1.00	0.99	
Satd. Flow (perm)	1588			1588	1411	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	549	0	0	777	6	17
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	549	0	0	777	10	0
Turn Type	NA			NA	Prot	
Protected Phases	2 8			6	3 4	
Permitted Phases						
Actuated Green, G (s)	47.1			35.6	16.9	
Effective Green, g (s)	47.1			35.6	16.9	
Actuated g/C Ratio	0.59			0.45	0.21	
Clearance Time (s)				4.6		
Vehicle Extension (s)				3.0		
Lane Grp Cap (vph)	934			706	298	
v/s Ratio Prot	c0.35			c0.49	c0.01	
v/s Ratio Perm						
v/c Ratio	0.59			1.10	0.03	
Uniform Delay, d1	10.3			22.2	25.1	
Progression Factor	0.18			1.07	0.95	
Incremental Delay, d2	0.7			58.1	0.0	
Delay (s)	2.5			81.8	23.8	
Level of Service	A			F	C	
Approach Delay (s)	2.5			81.8	23.8	
Approach LOS	A			F	C	

Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	465	45	30	173	0	0	0	0	290	1035	532
Future Volume (vph)	0	465	45	30	173	0	0	0	0	290	1035	532
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	10	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		3.0			3.0						3.0	3.0
Lane Util. Factor		0.95			1.00						0.95	1.00
Frpb, ped/bikes		1.00			1.00						1.00	0.92
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.99	1.00
Satd. Flow (prot)		2830			1822						2998	1268
Flt Permitted		1.00			0.89						0.99	1.00
Satd. Flow (perm)		2830			1641						2998	1268
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	484	47	31	180	0	0	0	0	302	1078	554
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	522	0	0	211	0	0	0	0	0	1380	554
Confl. Peds. (#/hr)	6		4	4		6	18		1	1		18
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		30.8			30.8						40.4	33.4
Effective Green, g (s)		32.0			32.0						42.0	35.0
Actuated g/C Ratio		0.40			0.40						0.52	0.44
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		1132			656						1573	554
v/s Ratio Prot		c0.18									c0.46	
v/s Ratio Perm					0.13							c0.44
v/c Ratio		0.46			0.32						0.88	1.00
Uniform Delay, d1		17.7			16.5						16.7	22.5
Progression Factor		0.33			0.32						1.00	1.00
Incremental Delay, d2		1.1			1.1						7.2	38.2
Delay (s)		7.0			6.3						24.0	60.7
Level of Service		A			A						C	E
Approach Delay (s)		7.0			6.3			0.0			34.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	351	0	0	136	425	72	1615	60	0	0	0
Future Volume (veh/h)	403	351	0	0	136	425	72	1615	60	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1901	1960	0	0	1980	1901	1980	1961	1980			
Adj Flow Rate, veh/h	411	358	0	0	139	434	73	1648	61			
Adj No. of Lanes	1	1	0	0	1	1	0	2	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	1	0	0	0	0	0	1	0			
Cap, veh/h	498	833	0	0	446	359	77	1831	835			
Arrive On Green	0.27	0.71	0.00	0.00	0.23	0.23	0.17	0.17	0.17			
Sat Flow, veh/h	1810	1960	0	0	1980	1595	155	3662	1670			
Grp Volume(v), veh/h	411	358	0	0	139	434	923	798	61			
Grp Sat Flow(s),veh/h/ln	1810	1960	0	0	1980	1595	1953	1863	1670			
Q Serve(g_s), s	6.8	6.1	0.0	0.0	4.7	18.0	37.4	33.3	2.5			
Cycle Q Clear(g_c), s	6.8	6.1	0.0	0.0	4.7	18.0	37.4	33.3	2.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.08		1.00			
Lane Grp Cap(c), veh/h	498	833	0	0	446	359	977	932	835			
V/C Ratio(X)	0.83	0.43	0.00	0.00	0.31	1.21	0.94	0.86	0.07			
Avail Cap(c_a), veh/h	498	833	0	0	446	359	977	932	835			
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.8	7.6	0.0	0.0	25.8	31.0	32.3	30.6	17.7			
Incr Delay (d2), s/veh	14.4	1.6	0.0	0.0	1.8	117.5	18.2	10.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.8	3.5	0.0	0.0	2.8	19.6	25.2	19.8	1.2			
LnGrp Delay(d),s/veh	38.2	9.2	0.0	0.0	27.7	148.5	50.5	40.6	17.9			
LnGrp LOS	D	A			C	F	D	D	B			
Approach Vol, veh/h		769			573			1782				
Approach Delay, s/veh		24.7			119.2			44.9				
Approach LOS		C			F			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4			7	8
Phs Duration (G+Y+Rc), s		43.0		37.0			16.0	21.0
Change Period (Y+Rc), s		* 4.2		* 4.2			* 4.2	* 4.2
Max Green Setting (Gmax), s		* 39		* 33			* 12	* 17
Max Q Clear Time (g_c+I1), s		39.4		8.1			8.8	20.0
Green Ext Time (p_c), s		0.0		3.5			1.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	285	50	10	245	35	25	411	40	60	341	35
Future Volume (veh/h)	70	285	50	10	245	35	25	411	40	60	341	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.98	0.99		0.95	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1440	1582	1530	1371	1517	1530	1440	1504	1469	1440	1518	1469
Adj Flow Rate, veh/h	74	303	53	11	261	37	27	437	43	64	363	37
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	5	1	1	2	2	2	1	1	1
Cap, veh/h	204	364	64	138	362	51	107	1476	143	239	1257	129
Arrive On Green	0.28	0.28	0.27	0.56	0.56	0.54	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	871	1303	228	789	1296	184	89	2287	221	283	1947	199
Grp Volume(v), veh/h	74	0	356	11	0	298	280	0	227	245	0	219
Grp Sat Flow(s),veh/h/ln	871	0	1531	789	0	1479	1431	0	1167	1246	0	1183
Q Serve(g_s), s	6.5	0.0	17.5	1.0	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.4	0.0	17.5	18.5	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.12	0.10		0.19	0.26		0.17
Lane Grp Cap(c), veh/h	204	0	428	138	0	413	973	0	753	861	0	764
V/C Ratio(X)	0.36	0.00	0.83	0.08	0.00	0.72	0.29	0.00	0.30	0.28	0.00	0.29
Avail Cap(c_a), veh/h	417	0	804	332	0	777	973	0	753	861	0	764
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94	0.74	0.00	0.74
Uniform Delay (d), s/veh	33.1	0.0	27.1	24.7	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.6	0.1	0.0	0.9	0.7	0.0	1.0	0.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.5	0.2	0.0	4.7	0.2	0.0	0.2	0.1	0.0	0.1
LnGrp Delay(d),s/veh	33.5	0.0	28.7	24.8	0.0	16.3	0.7	0.0	1.0	0.6	0.0	0.7
LnGrp LOS	C		C	C		B	A		A	A		A
Approach Vol, veh/h		430			309			507			464	
Approach Delay, s/veh		29.5			16.6			0.8			0.7	
Approach LOS		C			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.4		54.6		25.4		54.6
Change Period (Y+Rc), s		4.6		4.6		4.6		4.6
Max Green Setting (Gmax), s		40.4		30.4		40.4		30.4
Max Q Clear Time (g_c+I1), s		20.4		2.0		20.5		2.0
Green Ext Time (p_c), s		0.3		0.4		0.3		0.4

Intersection Summary			
HCM 2010 Ctrl Delay	10.8		
HCM 2010 LOS	B		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	235	170	30	160	0	0	0	0	25	1040	120
Future Volume (vph)	0	235	170	30	160	0	0	0	0	25	1040	120
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	16	12	12	16	12	12	12	12	12	12	12
Total Lost time (s)		2.6			2.6						3.0	3.1
Lane Util. Factor		1.00			1.00						0.91	1.00
Frpb, ped/bikes		0.99			1.00						1.00	0.94
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.94			1.00						1.00	0.85
Flt Protected		1.00			0.99						1.00	1.00
Satd. Flow (prot)		1701			1817						4174	1117
Flt Permitted		1.00			0.91						1.00	1.00
Satd. Flow (perm)		1701			1659						4174	1117
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	255	185	33	174	0	0	0	0	27	1130	130
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	421	0	0	207	0	0	0	0	0	1157	130
Confl. Peds. (#/hr)	8		16	16		8	20		2	2		20
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	2%	3%
Parking (#/hr)											2	2
Turn Type		NA		Perm	NA					Split	NA	custom
Protected Phases		4			8					2	2	
Permitted Phases				8								5
Actuated Green, G (s)		35.8			35.8						35.4	28.4
Effective Green, g (s)		37.4			37.4						37.0	29.9
Actuated g/C Ratio		0.47			0.47						0.46	0.37
Clearance Time (s)		4.2			4.2						4.6	4.6
Lane Grp Cap (vph)		795			775						1930	417
v/s Ratio Prot		c0.25									c0.28	
v/s Ratio Perm					0.12							0.12
v/c Ratio		0.53			0.27						0.60	0.31
Uniform Delay, d1		15.1			13.0						16.0	17.8
Progression Factor		0.85			0.86						0.38	0.46
Incremental Delay, d2		2.5			0.7						0.9	1.2
Delay (s)		15.3			11.8						6.9	9.4
Level of Service		B			B						A	A
Approach Delay (s)		15.3			11.8			0.0			7.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.2
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	160	0	0	115	110	70	1402	20	5	0	0
Future Volume (veh/h)	105	160	0	0	115	110	70	1402	20	5	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	0.89	1.00	0.89			
Adj Sat Flow, veh/h/ln	1604	1620	0	0	1620	1620	1620	1605	1620			
Adj Flow Rate, veh/h	107	163	0	0	117	112	71	1431	20			
Adj No. of Lanes	1	1	0	0	1	0	0	2	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	0	0	0	0	0	0	1	0			
Cap, veh/h	405	688	0	0	285	273	63	1339	20			
Arrive On Green	0.85	0.85	0.00	0.00	0.43	0.42	0.17	0.17	0.16			
Sat Flow, veh/h	1039	1620	0	0	671	642	127	2677	39			
Grp Volume(v), veh/h	107	163	0	0	0	229	797	0	725			
Grp Sat Flow(s),veh/h/ln	1039	1620	0	0	0	1312	1422	0	1421			
Q Serve(g_s), s	4.1	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Cycle Q Clear(g_c), s	13.9	1.5	0.0	0.0	0.0	9.8	40.0	0.0	40.0			
Prop In Lane	1.00		0.00	0.00		0.49	0.09		0.03			
Lane Grp Cap(c), veh/h	405	689	0	0	0	558	711	0	710			
V/C Ratio(X)	0.26	0.24	0.00	0.00	0.00	0.41	1.12	0.00	1.02			
Avail Cap(c_a), veh/h	405	689	0	0	0	558	711	0	710			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.9	3.6	0.0	0.0	0.0	16.1	33.4	0.0	33.4			
Incr Delay (d2), s/veh	1.6	0.8	0.0	0.0	0.0	2.2	72.2	0.0	39.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.0	0.0	0.0	3.9	30.0	0.0	23.4			
LnGrp Delay(d),s/veh	8.5	4.4	0.0	0.0	0.0	18.4	105.6	0.0	72.4			
LnGrp LOS	A	A				B	F		F			
Approach Vol, veh/h		270			229			1522				
Approach Delay, s/veh		6.0			18.4			89.8				
Approach LOS		A			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		43.0		37.0				37.0
Change Period (Y+Rc), s		4.6		4.6				4.6
Max Green Setting (Gmax), s		38.4		32.4				32.4
Max Q Clear Time (g_c+I1), s		42.0		15.9				11.8
Green Ext Time (p_c), s		0.0		2.1				2.2

Intersection Summary	
HCM 2010 Ctrl Delay	70.5
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	315	60	55	250	70	35	346	35	35	306	70
Future Volume (veh/h)	80	315	60	55	250	70	35	346	35	35	306	70
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.91	0.99		0.91	0.94		0.87	0.97		0.87
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89
Adj Sat Flow, veh/h/ln	1620	1529	1620	1588	1569	1620	1620	1607	1555	1620	1596	1555
Adj Flow Rate, veh/h	87	342	65	60	272	76	38	376	38	38	333	76
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	3	3	1	1	1	2	2	2
Cap, veh/h	347	472	90	218	443	124	139	1237	123	136	1066	238
Arrive On Green	0.38	0.38	0.38	0.77	0.77	0.76	0.18	0.18	0.18	1.00	1.00	1.00
Sat Flow, veh/h	914	1227	233	872	1152	322	162	2289	228	156	1973	440
Grp Volume(v), veh/h	87	0	407	60	0	348	248	0	204	250	0	197
Grp Sat Flow(s),veh/h/ln	914	0	1460	872	0	1474	1456	0	1223	1430	0	1139
Q Serve(g_s), s	6.1	0.0	19.0	4.5	0.0	8.3	0.0	0.0	11.6	0.4	0.0	0.0
Cycle Q Clear(g_c), s	14.3	0.0	19.0	23.5	0.0	8.3	10.7	0.0	11.6	12.0	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.22	0.15		0.19	0.15		0.39
Lane Grp Cap(c), veh/h	347	0	562	218	0	567	839	0	661	825	0	616
V/C Ratio(X)	0.25	0.00	0.72	0.28	0.00	0.61	0.30	0.00	0.31	0.30	0.00	0.32
Avail Cap(c_a), veh/h	475	0	767	340	0	774	839	0	661	825	0	616
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	0.84	0.00	0.84	1.00	0.00	1.00	0.93	0.00	0.93	0.95	0.00	0.95
Uniform Delay (d), s/veh	22.9	0.0	21.0	16.2	0.0	6.7	19.5	0.0	19.9	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	1.8	0.7	0.0	1.1	0.8	0.0	1.1	0.9	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	7.9	1.1	0.0	3.3	5.0	0.0	4.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	23.2	0.0	22.9	16.9	0.0	7.8	20.3	0.0	21.0	0.9	0.0	1.3
LnGrp LOS	C		C	B		A	C		C	A		A
Approach Vol, veh/h		494			408			452			447	
Approach Delay, s/veh		22.9			9.1			20.6			1.1	
Approach LOS		C			A			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.8		46.2		33.8		46.2
Change Period (Y+Rc), s		* 4.2		* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s		* 41		* 31		* 41		* 31
Max Q Clear Time (g_c+I1), s		21.0		13.6		25.5		14.0
Green Ext Time (p_c), s		4.4		3.9		4.0		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	340	60	80	220	0	0	0	0	120	1005	160
Future Volume (vph)	0	340	60	80	220	0	0	0	0	120	1005	160
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	12	13	10	15	11	12	12	12	12	12	12	12
Total Lost time (s)		3.0	3.0	3.0	3.0						3.4	3.4
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.90	1.00	1.00						1.00	0.92
Flpb, ped/bikes		1.00	1.00	0.96	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		1674	1118	1579	1506						4304	1264
Flt Permitted		1.00	1.00	0.41	1.00						0.99	1.00
Satd. Flow (perm)		1674	1118	677	1506						4304	1264
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	378	67	89	244	0	0	0	0	133	1117	178
RTOR Reduction (vph)	0	0	37	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	378	30	89	244	0	0	0	0	0	1250	178
Confl. Peds. (#/hr)	47		79	79		47	30		15	15		30
Confl. Bikes (#/hr)			6			6						
Heavy Vehicles (%)	0%	0%	4%	3%	4%	0%	0%	0%	0%	1%	2%	0%
Turn Type		NA	Perm	Perm	NA					Perm	NA	custom
Protected Phases		4			8						2	
Permitted Phases			4	8						2		5
Actuated Green, G (s)		34.8	34.8	34.8	34.8						36.4	29.4
Effective Green, g (s)		36.0	36.0	36.0	36.0						37.6	30.6
Actuated g/C Ratio		0.45	0.45	0.45	0.45						0.47	0.38
Clearance Time (s)		4.2	4.2	4.2	4.2						4.6	4.6
Lane Grp Cap (vph)		753	503	304	677						2022	483
v/s Ratio Prot		c0.23			0.16							
v/s Ratio Perm			0.03	0.13							0.29	0.14
v/c Ratio		0.50	0.06	0.29	0.36						0.62	0.37
Uniform Delay, d1		15.6	12.4	13.9	14.4						15.8	17.8
Progression Factor		1.00	1.00	0.93	0.95						0.40	0.47
Incremental Delay, d2		2.4	0.2	2.3	1.4						1.2	1.8
Delay (s)		18.0	12.7	15.3	15.2						7.6	10.2
Level of Service		B	B	B	B						A	B
Approach Delay (s)		17.2			15.2			0.0			7.9	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	11.6
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	280	0	0	210	40	95	1172	250	0	0	0
Future Volume (vph)	180	280	0	0	210	40	95	1172	250	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	11	12	12	12	12	12	9	10	12	12	12	12
Total Lost time (s)	3.0	3.0			3.0		3.0	3.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	0.98	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.98		1.00	0.97				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1448	1620			1387		1235	2494				
Flt Permitted	0.48	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	734	1620			1387		1235	2494				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	292	0	0	219	42	99	1221	260	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	21	0	0	0	0
Lane Group Flow (vph)	188	292	0	0	252	0	99	1460	0	0	0	0
Confl. Peds. (#/hr)	25		43	43		25	11		11	11		11
Confl. Bikes (#/hr)			7			5						
Heavy Vehicles (%)	1%	0%	0%	0%	1%	1%	10%	1%	0%	0%	0%	0%
Parking (#/hr)					2	2		2	2			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		2			6			4				
Permitted Phases	2						4		4			
Actuated Green, G (s)	27.8	27.8			27.8		43.8	43.8				
Effective Green, g (s)	29.0	29.0			29.0		45.0	45.0				
Actuated g/C Ratio	0.36	0.36			0.36		0.56	0.56				
Clearance Time (s)	4.2	4.2			4.2		4.2	4.2				
Lane Grp Cap (vph)	266	587			502		694	1402				
v/s Ratio Prot		0.18			0.18			c0.59				
v/s Ratio Perm	c0.26						0.08					
v/c Ratio	0.71	0.50			0.50		0.14	1.04				
Uniform Delay, d1	21.9	19.8			19.9		8.3	17.5				
Progression Factor	1.48	1.51			1.13		0.36	0.31				
Incremental Delay, d2	12.7	2.6			3.4		0.1	26.2				
Delay (s)	45.1	32.6			25.9		3.1	31.6				
Level of Service	D	C			C		A	C				
Approach Delay (s)		37.5			25.9			29.8			0.0	
Approach LOS		D			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	186	1425	45	85	15	0	0	35	10
Future Volume (vph)	0	0	0	186	1425	45	85	15	0	0	35	10
Ideal Flow (vphpl)	1800	1800	1800	1600	1600	1600	1600	1600	1800	1800	1600	1600
Lane Width	12	12	12	11	12	12	12	12	12	12	12	12
Total Lost time (s)				3.0	3.0			3.0			3.0	
Lane Util. Factor				1.00	0.91			1.00			1.00	
Frpb, ped/bikes				1.00	1.00			1.00			1.00	
Flpb, ped/bikes				0.97	1.00			1.00			1.00	
Frt				1.00	1.00			1.00			0.97	
Flt Protected				0.95	1.00			0.96			1.00	
Satd. Flow (prot)				1258	3903			1381			1392	
Flt Permitted				0.95	1.00			0.76			1.00	
Satd. Flow (perm)				1258	3903			1091			1392	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	200	1532	48	91	16	0	0	38	11
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	200	1576	0	0	107	0	0	41	0
Confl. Peds. (#/hr)	37		17	17		37			50	50		
Confl. Bikes (#/hr)						1			1			1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			4			8	
Permitted Phases				6			4					
Actuated Green, G (s)				48.8	48.8			22.8			22.8	
Effective Green, g (s)				50.0	50.0			24.0			24.0	
Actuated g/C Ratio				0.62	0.62			0.30			0.30	
Clearance Time (s)				4.2	4.2			4.2			4.2	
Lane Grp Cap (vph)				786	2439			327			417	
v/s Ratio Prot					c0.40						0.03	
v/s Ratio Perm				0.16				c0.10				
v/c Ratio				0.25	0.65			0.33			0.10	
Uniform Delay, d1				6.7	9.4			21.7			20.2	
Progression Factor				0.35	0.27			1.06			1.00	
Incremental Delay, d2				0.6	1.0			2.5			0.5	
Delay (s)				2.9	3.5			25.5			20.7	
Level of Service				A	A			C			C	
Approach Delay (s)		0.0			3.5			25.5			20.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	85	1480	120	30	286	0	0	240	136
Future Volume (veh/h)	0	0	0	85	1480	120	30	286	0	0	240	136
Number				1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		0.94	0.97		1.00	1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Adj Sat Flow, veh/h/ln				1620	1605	1620	1620	1605	0	0	1536	1555
Adj Flow Rate, veh/h				88	1526	124	31	295	0	0	247	140
Adj No. of Lanes				0	3	0	0	2	0	0	2	0
Peak Hour Factor				0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %				0	1	0	1	1	0	0	2	2
Cap, veh/h				128	2361	198	101	842	0	0	554	290
Arrive On Green				0.19	0.19	0.19	0.68	0.68	0.00	0.00	0.11	0.11
Sat Flow, veh/h				218	4018	337	142	2568	0	0	1718	860
Grp Volume(v), veh/h				643	536	558	166	160	0	0	217	170
Grp Sat Flow(s),veh/h/ln				1594	1461	1518	1248	1388	0	0	1459	1043
Q Serve(g_s), s				30.0	26.9	27.0	1.3	3.9	0.0	0.0	11.1	12.2
Cycle Q Clear(g_c), s				30.0	26.9	27.0	13.5	3.9	0.0	0.0	11.1	12.2
Prop In Lane				0.14		0.22	0.19		0.00	0.00		0.83
Lane Grp Cap(c), veh/h				937	858	892	475	468	0	0	492	352
V/C Ratio(X)				0.69	0.62	0.63	0.35	0.34	0.00	0.00	0.44	0.48
Avail Cap(c_a), veh/h				937	858	892	475	468	0	0	492	352
HCM Platoon Ratio				0.33	0.33	0.33	2.00	2.00	1.00	1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				25.4	24.2	24.2	9.4	9.2	0.0	0.0	28.5	29.0
Incr Delay (d2), s/veh				4.1	3.4	3.3	2.0	2.0	0.0	0.0	2.9	4.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.3	11.7	12.2	1.7	1.7	0.0	0.0	4.9	4.0
LnGrp Delay(d),s/veh				29.5	27.6	27.5	11.5	11.2	0.0	0.0	31.4	33.7
LnGrp LOS				C	C	C	B	B			C	C
Approach Vol, veh/h					1738			326			387	
Approach Delay, s/veh					28.3			11.3			32.4	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.0		50.0		30.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		45.5		25.5
Max Q Clear Time (g_c+I1), s				15.5		32.0		14.2
Green Ext Time (p_c), s				2.4		7.2		2.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	395	1415	0	0	0	0	0	745	445
Future Volume (vph)	0	0	0	395	1415	0	0	0	0	0	745	445
Ideal Flow (vphpl)	1800	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1700
Lane Width	12	12	12	14	12	12	12	12	12	12	11	11
Total Lost time (s)				3.0	3.0						3.0	3.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.96	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1244	4057						4233	1056
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1244	4057						4233	1056
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	420	1505	0	0	0	0	0	793	473
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	252	1673	0	0	0	0	0	793	457
Confl. Peds. (#/hr)	52		42	42		52	102		2	2		102
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	1%	4%
Turn Type				Perm	NA						NA	Perm
Protected Phases					8						6	
Permitted Phases				8								6
Actuated Green, G (s)				45.0	45.0						26.0	26.0
Effective Green, g (s)				46.0	46.0						28.0	28.0
Actuated g/C Ratio				0.58	0.58						0.35	0.35
Clearance Time (s)				4.0	4.0						5.0	5.0
Lane Grp Cap (vph)				715	2332						1481	369
v/s Ratio Prot											0.19	
v/s Ratio Perm				0.20	0.41							c0.43
v/c Ratio				0.35	0.72						0.54	1.24
Uniform Delay, d1				9.1	12.3						20.8	26.0
Progression Factor				0.68	0.67						1.18	1.22
Incremental Delay, d2				0.9	1.2						1.2	125.7
Delay (s)				7.0	9.5						25.8	157.3
Level of Service				A	A						C	F
Approach Delay (s)		0.0			9.1			0.0			74.9	
Approach LOS		A			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	815	196	990	1352	0	0	0	0
Future Volume (vph)	0	0	0	0	815	196	990	1352	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1700	1700	1600	1600	1800	1800	1800	1800
Lane Width	12	12	12	12	10	11	10	11	12	12	12	12
Total Lost time (s)					3.0	3.0	3.0	3.0				
Lane Util. Factor					0.91	1.00	0.86	0.86				
Frpb, ped/bikes					1.00	0.95	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	0.99				
Satd. Flow (prot)					3731	1177	1077	3474				
Flt Permitted					1.00	1.00	0.95	0.99				
Satd. Flow (perm)					3731	1177	1077	3474				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	0	849	204	1031	1408	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	19	19	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	849	187	496	1905	0	0	0	0
Confl. Peds. (#/hr)	43		41	41		43			25	25		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	2%	2%	0%	0%	0%	0%
Parking (#/hr)					0							
Turn Type					NA	Perm	Split	NA				
Protected Phases					6		4	4				
Permitted Phases						6						
Actuated Green, G (s)					29.5	29.5	41.5	41.5				
Effective Green, g (s)					31.0	31.0	43.0	43.0				
Actuated g/C Ratio					0.39	0.39	0.54	0.54				
Clearance Time (s)					4.5	4.5	4.5	4.5				
Lane Grp Cap (vph)					1445	456	578	1867				
v/s Ratio Prot					c0.23		0.46	c0.55				
v/s Ratio Perm						0.16						
v/c Ratio					0.59	0.41	0.86	1.02				
Uniform Delay, d1					19.4	17.8	15.9	18.5				
Progression Factor					0.92	0.87	0.90	0.85				
Incremental Delay, d2					1.4	2.2	5.7	17.4				
Delay (s)					19.3	17.8	19.9	33.0				
Level of Service					B	B	B	C				
Approach Delay (s)		0.0			19.0			30.3			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1645	70	0	0	0	0	90	311	70	156	0
Future Volume (veh/h)	55	1645	70	0	0	0	0	90	311	70	156	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93				1.00		0.97	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1423	1440				0	1440	1412	1382	1304	0
Adj Flow Rate, veh/h	57	1714	73				0	94	324	73	162	0
Adj No. of Lanes	0	4	0				0	1	1	1	1	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	1	0				0	0	2	0	6	0
Cap, veh/h	83	2677	117				0	540	436	338	489	0
Arrive On Green	0.18	0.18	0.18				0.00	0.38	0.38	0.12	0.12	0.00
Sat Flow, veh/h	151	4867	213				0	1440	1163	749	1304	0
Grp Volume(v), veh/h	534	841	469				0	94	324	73	162	0
Grp Sat Flow(s),veh/h/ln	1416	1224	1366				0	1440	1163	749	1304	0
Q Serve(g_s), s	28.2	25.4	25.4				0.0	3.5	19.3	7.2	9.1	0.0
Cycle Q Clear(g_c), s	28.2	25.4	25.4				0.0	3.5	19.3	10.7	9.1	0.0
Prop In Lane	0.11		0.16				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	779	1347	751				0	540	436	338	489	0
V/C Ratio(X)	0.69	0.62	0.62				0.00	0.17	0.74	0.22	0.33	0.00
Avail Cap(c_a), veh/h	779	1347	751				0	540	436	338	489	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	25.1	25.1				0.0	16.7	21.7	28.2	25.9	0.0
Incr Delay (d2), s/veh	4.9	2.2	3.9				0.0	0.7	10.9	1.5	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	9.0	10.4				0.0	1.5	7.4	1.6	3.5	0.0
LnGrp Delay(d),s/veh	31.2	27.3	29.0				0.0	17.4	32.5	29.6	27.7	0.0
LnGrp LOS	C	C	C					B	C	C	C	
Approach Vol, veh/h		1844						418			235	
Approach Delay, s/veh		28.9						29.1			28.3	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				33.0		47.0		33.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 29		42.8		* 29
Max Q Clear Time (g_c+I1), s				21.3		30.2		12.7
Green Ext Time (p_c), s				2.0		7.3		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	1770	45	0	0	0	0	195	130	120	160	0
Future Volume (veh/h)	201	1770	45	0	0	0	0	195	130	120	160	0
Number	1	6	16				7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1440	1427	1385				0	1412	1426	1382	1351	0
Adj Flow Rate, veh/h	209	1844	47				0	203	135	125	167	0
Adj No. of Lanes	0	4	1				0	1	1	0	2	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	1	4				0	2	1	4	4	0
Cap, veh/h	272	2588	639				0	512	432	274	452	0
Arrive On Green	0.19	0.19	0.19				0.00	0.36	0.36	0.73	0.73	0.00
Sat Flow, veh/h	484	4601	1135				0	1412	1191	521	1309	0
Grp Volume(v), veh/h	606	1447	47				0	203	135	141	151	0
Grp Sat Flow(s),veh/h/ln	1403	1227	1135				0	1412	1191	600	1168	0
Q Serve(g_s), s	32.8	29.4	2.7				0.0	8.6	6.5	9.4	3.8	0.0
Cycle Q Clear(g_c), s	32.8	29.4	2.7				0.0	8.6	6.5	17.9	3.8	0.0
Prop In Lane	0.34		1.00				0.00		1.00	0.89		0.00
Lane Grp Cap(c), veh/h	789	2071	639				0	512	432	302	424	0
V/C Ratio(X)	0.77	0.70	0.07				0.00	0.40	0.31	0.47	0.36	0.00
Avail Cap(c_a), veh/h	789	2071	639				0	512	432	302	424	0
HCM Platoon Ratio	0.33	0.33	0.33				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	26.2	15.4				0.0	19.0	18.3	12.2	7.5	0.0
Incr Delay (d2), s/veh	7.1	2.0	0.2				0.0	2.3	1.9	5.1	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	10.4	0.9				0.0	3.7	2.4	2.6	1.4	0.0
LnGrp Delay(d),s/veh	34.7	28.2	15.6				0.0	21.3	20.2	17.3	9.9	0.0
LnGrp LOS	C	C	B					C	C	B	A	
Approach Vol, veh/h		2100						338			292	
Approach Delay, s/veh		29.8						20.9			13.5	
Approach LOS		C						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				32.0		48.0		32.0
Change Period (Y+Rc), s				* 4.2		4.2		* 4.2
Max Green Setting (Gmax), s				* 28		43.8		* 28
Max Q Clear Time (g_c+I1), s				10.6		34.8		19.9
Green Ext Time (p_c), s				2.7		6.5		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1215	1085	0	0	0	0	0	0	366	793	0
Future Volume (vph)	0	1215	1085	0	0	0	0	0	0	366	793	0
Ideal Flow (vphpl)	1800	1700	1700	1800	1800	1800	1800	1800	1800	1700	1700	1800
Lane Width	12	11	11	12	12	12	12	12	12	11	12	12
Total Lost time (s)		3.0	3.0							3.0	3.0	
Lane Util. Factor		0.81	0.81							0.91	0.91	
Frpb, ped/bikes		1.00	0.99							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							1.00	1.00	
Frt		0.95	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4463	985							1266	2700	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4463	985							1266	2700	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1253	1119	0	0	0	0	0	0	377	818	0
RTOR Reduction (vph)	0	34	34	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1779	525	0	0	0	0	0	0	339	856	0
Confl. Peds. (#/hr)	25					25						
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%	0%	0%	0%	1%	3%	0%
Turn Type		NA	Perm							Split	NA	
Protected Phases		2								8	8	
Permitted Phases			2									
Actuated Green, G (s)		40.5	40.5							30.5	30.5	
Effective Green, g (s)		42.0	42.0							32.0	32.0	
Actuated g/C Ratio		0.52	0.52							0.40	0.40	
Clearance Time (s)		4.5	4.5							4.5	4.5	
Lane Grp Cap (vph)		2343	517							506	1080	
v/s Ratio Prot		0.40								0.27	c0.32	
v/s Ratio Perm			c0.53									
v/c Ratio		0.87dr	1.02							0.67	0.79	
Uniform Delay, d1		15.0	19.0							19.7	21.1	
Progression Factor		0.47	0.48							0.72	0.76	
Incremental Delay, d2		1.7	37.3							6.0	5.2	
Delay (s)		8.8	46.4							20.2	21.2	
Level of Service		A	D							C	C	
Approach Delay (s)		17.7			0.0			0.0			21.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	855	720	0	0	0	0	0	1507	660	0	0	0
Future Volume (vph)	855	720	0	0	0	0	0	1507	660	0	0	0
Ideal Flow (vphpl)	1600	1700	1700	1700	1700	1700	1700	1600	1600	1700	1700	1700
Lane Width	13	12	12	12	12	12	12	12	10	12	12	12
Total Lost time (s)	3.0	3.0						3.0	3.0			
Lane Util. Factor	0.86	0.86						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.96			
Flpb, ped/bikes	0.96	0.99						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	1120	3801						3892	1095			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	1120	3801						3892	1095			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	881	742	0	0	0	0	0	1554	680	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	82	0	0	0
Lane Group Flow (vph)	646	947	0	0	0	0	0	1554	598	0	0	0
Confl. Peds. (#/hr)	37		2	2		37			31	31		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	37.8	37.8						32.8	32.8			
Effective Green, g (s)	39.0	39.0						35.0	35.0			
Actuated g/C Ratio	0.49	0.49						0.44	0.44			
Clearance Time (s)	4.2	4.2						5.2	5.2			
Lane Grp Cap (vph)	546	1852						1702	479			
v/s Ratio Prot								0.40				
v/s Ratio Perm	c0.58	0.25							c0.55			
v/c Ratio	1.18	0.51						0.91	1.25			
Uniform Delay, d1	20.5	14.0						21.1	22.5			
Progression Factor	0.63	0.56						1.00	1.00			
Incremental Delay, d2	94.2	0.7						9.0	128.1			
Delay (s)	107.1	8.5						30.1	150.6			
Level of Service	F	A						C	F			
Approach Delay (s)		48.7			0.0			66.8			0.0	
Approach LOS		D			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	59.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Attachment 2

Áegis Living, 1203 Lincoln Street, San Rafael - Trip Generation														
			Weekday Daily		Weekday AM Peak Hour					Weekday PM Peak Hour				
Land Use[1]	Size	Units	Rate[2]	Total	Rate[3]	% Inbound	Inbound	Outbound	Total	Rate[4]	% Inbound	Inbound	Outbound	Total
Áegis Living Community	106	beds	3.06	320	0.17	72%	13	5	18	0.22	30%	7	16	23

1. The Áegis Living Community would develop a 77-unit facility with both assisted living and memory care that would be licensed for up to 88 beds.

2. The average trip rate and directional split based on the number of beds for the nursing home land use (#620) from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017) was used for the weekday daily trip generation.

3. The average trip rate and directional split based on the number of beds for the nursing home land use (#620) from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition, 2017) was used for the weekday AM peak hour trip generation.

4. The average trip rate and directional split was based on an independent trip generation study conducted for Áegis Living in 2014 for the weekday PM peak hour trip generation.

Steve Stafford

From: Helga Blum <helgarblum@gmail.com>
Sent: Tuesday, April 27, 2021 3:58 PM
To: Steve Stafford
Subject: Aegis Building next to 820 Mission Ave

Dear Mr. Stafford,

I am a long time resident of San Rafael and live at 820 Mission Ave.

While I was initially supportive of the proposed Aegis Living development next door
to our Building at 820 Mission Ave, it is regrettable that the developers are now wishing to
amend their use permit to increase the building's height to gain 106 units as opposed
to the originally proposed 77 units.
This will dramatically impact our Mission Ave neighborhood from parking to traffic
to noise and much more.
Furthermore, this height increase would now overshadow our building, this
impacting the view and sunlight to many of our tenants.
These sudden amendments are literally and figuratively leaving us in the dark,
and this is not what we were originally promised.

We ask that the City and the developers seriously reconsider this proposed plan

and work with the neighborhood on a building plan that is more respectful of our
community.
As it stands now, this current proposal is unacceptable and I look forward
to your response.

Respectfully,
Helga Blum

Steve Stafford

From: Holm, Doug <DHolm@lockton.com>
Sent: Wednesday, April 21, 2021 4:24 PM
To: Steve Stafford
Cc: Eric Holm; Steve Gould
Subject: 800 Mission Ave. (Aegis Living San Rafael - Amendment to Use Permit and an Environmental and Design Review Permit

Dear Steve,

We are owners of Unit #12 at 820 Mission Avenue. Directly next door to the proposed Aegis Living project. We received a notice for the hearing Tuesday, May 4, 2021 at 7:00 PM to discuss Aegis Living amending their use permit to allow an additional 11feet height increase from 36' to 47' (yet an additional story) with a Unit increase from 77 suites to 106 suites.

The notice also gave your address for information. It is our opinion that this increase in height and volume of the proposed building would create detrimental overshadowing to our building, causing severe environmental, adjacent light and support issues, noise, traffic, parking, detrimental financial impact, and diminution in quality of life to us and our fellow homeowners at 820 Mission Ave..

We strongly oppose this egregious action by Aegis Living, particularly in that Aegis Living was already granted a previous variant to raise their height and unit specifications from the allowed zoning. Please express our concerns to the Design Review Board, Planning Commission and City Council in the hopes of avoiding further action.

We will do our best to attend the Zoom meeting, Tuesday, May 4, 2021 at 7:00 PM, but wanted to get our opinion on the record in writing.

Thank You and Best Regards,

Doug Holm
Unit #12
820 Mission Avenue
San Rafael, CA 94901

—

Douglas E. Holm
Lockton Insurance Brokers, LLC
California license number 0F15767

Office 415.568.4108
Mobile 415.999.7626
Three Embarcadero Center, Suite 600, San Francisco, CA 94111

LOCKTON
UNCOMMONLY INDEPENDENT

7/2/2018 8:32:13 AM

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38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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APPROVED
SAN RAFAEL PLANNING DIVISION
By: CC Denial of PC Approval Appeal
Date: 9/4/18
File No: AP18-002, ED17-090, UP17-030

PROJECT INFORMATION

GENERAL

ZONING: HR-1
MULTIFAMILY RESIDENTIAL
(HIGH DENSITY)
1,000 SF LAND PER DWELLING UNIT

MAX. BUILDING HEIGHT: 36'
PROPOSED BUILDING HEIGHT: 35'-6"

MIN. USABLE OUTDOOR AREA: 100 SF
PROPOSED USABLE OUTDOOR AREA: 3,955 SF

AP NUMBERS: 11-184-09, -08

UNITS PROPOSED: 77

BEDS: 88

UNIT SCHEDULE

UNIT TYPE	COUNT	AREA TOTAL
LEVEL 4		
AL.1	3	2094
AL.S	23	8631
	26	10725
LEVEL 3		
AL.1	3	2036
AL.S	23	8803
	26	10839
LEVEL 2		
LN.S	25	8577
	25	8577
Grand total	77	30141

PROJECT DIRECTORY

GENERAL

APPLICANT

ML SEVEN CAPITAL PARTNERS LLC
1101 FIFTH AVENUE, SUITE #300
SAN RAFAEL, CA 94901

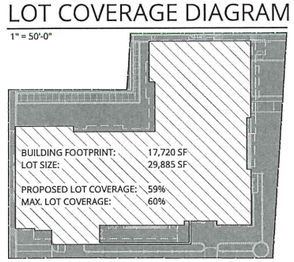
CONTACT: TOM MONAHAN
GEOFFREY FORNER
PHONE: (415)456-0600
EMAIL: gforner@monahanpacific.com
tmm@monahanpacific.com

ARCHITECT

ANKROM MOISAN ARCHITECTS
1505 5TH AVENUE, SUITE 300
SEATTLE, WA 98101
CONTACT: JP EMERY
JEREMY SOUTHERLAND
PHONE: (206)576-1600
EMAIL: JPE@ANKROMMOISAN.COM
JEREMYS@ANKROMMOISAN.COM

LOT COVERAGE DIAGRAM

1" = 50'-0"



BUILDING FOOTPRINT: 17,720 SF
LOT SIZE: 29,885 SF

PROPOSED LOT COVERAGE: 59%
MAX. LOT COVERAGE: 60%

DESIGN DESCRIPTION

PROPOSED OCCUPANCY; R2.1
MULTIFAMILY RESIDENTIAL
(HIGH DENSITY)

THE PROPOSED DESIGN IS AN 77 UNIT, FOUR STORY BUILDING WITH SUBTERRANEAN GARAGE. THE LOCATION IS AT THE CORNER OF MISSION AND LINCOLN IN SAN RAFAEL. IT IS WALKING DISTANCE TO DOWNTOWN, THE TRANSIT CENTER, AND FUTURE SMART RAIL STATION. THE FIRST FLOOR OF RESIDENTIAL LIVING, LOCATED ONE LEVEL ABOVE STREET, WILL HOUSE 25 UNITS DEDICATED TO MEMORY CARE RESIDENTS. THE UPPER TWO FLOORS WILL HOUSE 52 UNITS OF ASSISTED LIVING RESIDENTS. THE GROUND FLOOR PORT COCHERE WILL CONTAIN 2 ADA SPACES, 1 AEGIS VAN PARKING SPACE AND LOADING AREA. THERE ARE 2 STREET PULLOUTS PROPOSED FOR FIRE ACCESS AND LOADING. ONE AT MISSION AVE AND ONE AT LINCOLN AVE.

THE SUBTERRANEAN GARAGE WILL CONTAIN 37 SPACES TOTAL (INCLUDING 2 ADA SPACES). THE PARKING TOTAL FOR THE COMPLEX WILL INCLUDE 40 DEDICATED SPACES (INCLUDING 4 ADA SPACES). ENTRANCE AND EXIT TO SUBTERRANEAN GARAGE WILL BE LOCATED OFF MISSION. ENTRANCE AND EXIT TO GROUND LEVEL GARAGE WILL BE LOCATED OFF LINCOLN.

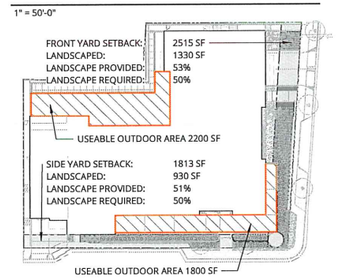
PROJECT CONTAINS A MIX OF 1 BEDROOM & STUDIO UNITS. FIRST LEVEL OF RESIDENTIAL (ONE LEVEL UP FROM STREET), WILL BE DESIGNATED FOR MEMORY CARE USE. THE UNITS ON THIS FLOOR WILL HAVE NON OPERATIONAL DOORS TO 'FALSE BALCONY'S'. THERE WILL BE ONE CONTROLLED ACCESS POINT FOR GARDENING PURPOSES ON THIS FLOOR. THE SECOND AND THIRD RESIDENTIAL FLOORS (UPPER TWO) WILL BE DESIGNATED FOR ASSISTED LIVING AND WILL HAVE EXTERIOR BALCONY ACCESS FROM DESIGNATED UNITS ON THE MISSION AND LINCOLN SIDES.
THE ARCHITECTURAL GOALS OF THE GROUND LEVEL ARE TO CREATE A VERY AESTHETICALLY RICH, INVITING ENVIRONMENT WHILE SIMULTANEOUSLY RELATING TO THE EXISTING HISTORIC ARCHITECTURE OF SAN RAFAEL. FROM THE STREET, A DEDICATED ENTRANCE FACADE, COUPLED WITH MULTI LEVEL, STAGGERED ROOFING ON EXTERIOR BALCONIES AND A FOCAL TOWER, WITH ARCHITECTURALLY SEPARATED BUILDING SECTIONS PROVIDES AN INTERESTING VIEW CONTAINING DESIRED CURB APPEAL. VISUAL DEPTH IS ACHIEVED THROUGH THE BALCONY'S, THE ROOF SEPARATIONS, AND THE BUILDING SEPARATIONS FROM VERTICAL MOVEMENT POINTS. SHADOWS AND DEPTH PREVENT MONOTONOUS WALLS AND BORING PLANES, OR BORING OVERALL MASSING IN GENERAL. THE SITE WILL BE LANDSCAPED TO PROVIDE SCREENING AND NATURAL APPEAL.

SETBACKS

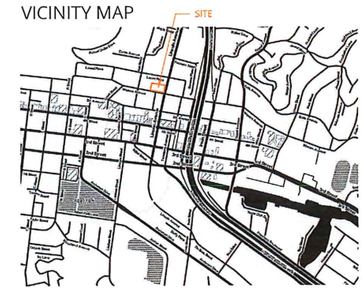
THE SETBACKS OF THE ORIGINAL APPROVED DESIGN ARE MAINTAINED TO INCLUDE 5' SETBACKS ON THE REAR AND SIDES OF THE FOOTPRINT, AS WELL AS A 10' SETBACK FROM MISSION AND A 15' SETBACK FROM LINCOLN. PROPOSED BUILDING FACADES/ARTICULATIONS EMULATE APPROVED DESIGN.

LANDSCAPE DIAGRAM

1" = 50'-0"



VICINITY MAP



SHEET INDEX

SHEET NUMBER	SHEET NAME
1	TITLE SHEET
2	LOWER GARAGE PLAN
3	MAIN LEVEL PLAN
4	FIRST FLOOR RESIDENTIAL PLAN
5	SECOND FLOOR RESIDENTIAL PLAN
6	THIRD FLOOR RESIDENTIAL PLAN
7	ROOF PLAN
8	EXTERIOR ELEVATIONS
9	EXTERIOR ELEVATIONS
10	SECTIONS
11	DETAILS
CIVIL	
C0.00	SITE SURVEY
C0.01	GRADING, DRAINAGE AND UTILITY PLAN
C2.00	STORMWATER CONTROL PLAN
C2.01	STORMWATER CONTROL DETAIL AND TABLES
LANDSCAPE	
L1.1	PLANTING PLAN
L2.0	PLANT - SCHEDULE
L2.1	PLANTING DETAILS

PROJECT NORTH

NOT FOR CONSTRUCTION
THESE DOCUMENTS ARE INTENDED ONLY TO ILLUSTRATE GENERAL DESIGN ELEMENTS.

DEVIATIONS MAY EXIST BETWEEN THESE DOCUMENTS AND DOCUMENTS THAT HAVE BEEN REVIEWED AND APPROVED BY THE CITY OF SAN RAFAEL PLANNING AUTHORITIES.

AEGIS SAN RAFAEL
800 MISSION AVENUE SAN RAFAEL, CA 94901

ASC SAN RAFAEL LLC

REVISION	DATE	REASON FOR ISSUE

RECEIVED
JUL 03 2018
PLANNING

TITLE SHEET

DATE 05.30.2018
PROJECT NUMBER 174170
SHEET NUMBER 1

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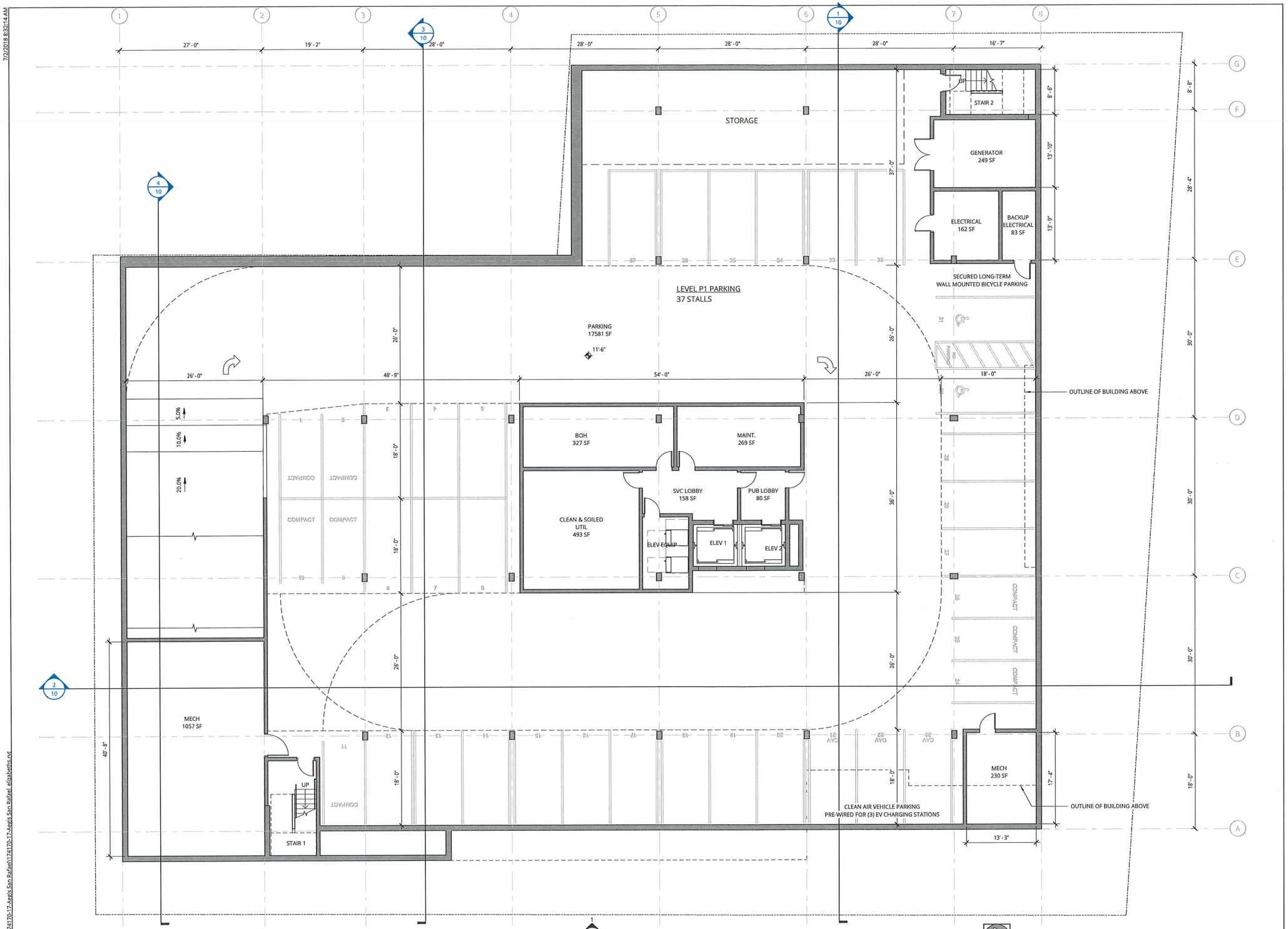

1 LEVEL P1 KEY PLAN
1/8" = 1'-0"

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Ankrom Moisan
38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063
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REVISION	DATE	REASON FOR ISSUE

LOWER GARAGE PLAN

DATE 05.30.2018
PROJECT NUMBER 174170
SHEET NUMBER 2

7/2/2018 8:32:14 AM
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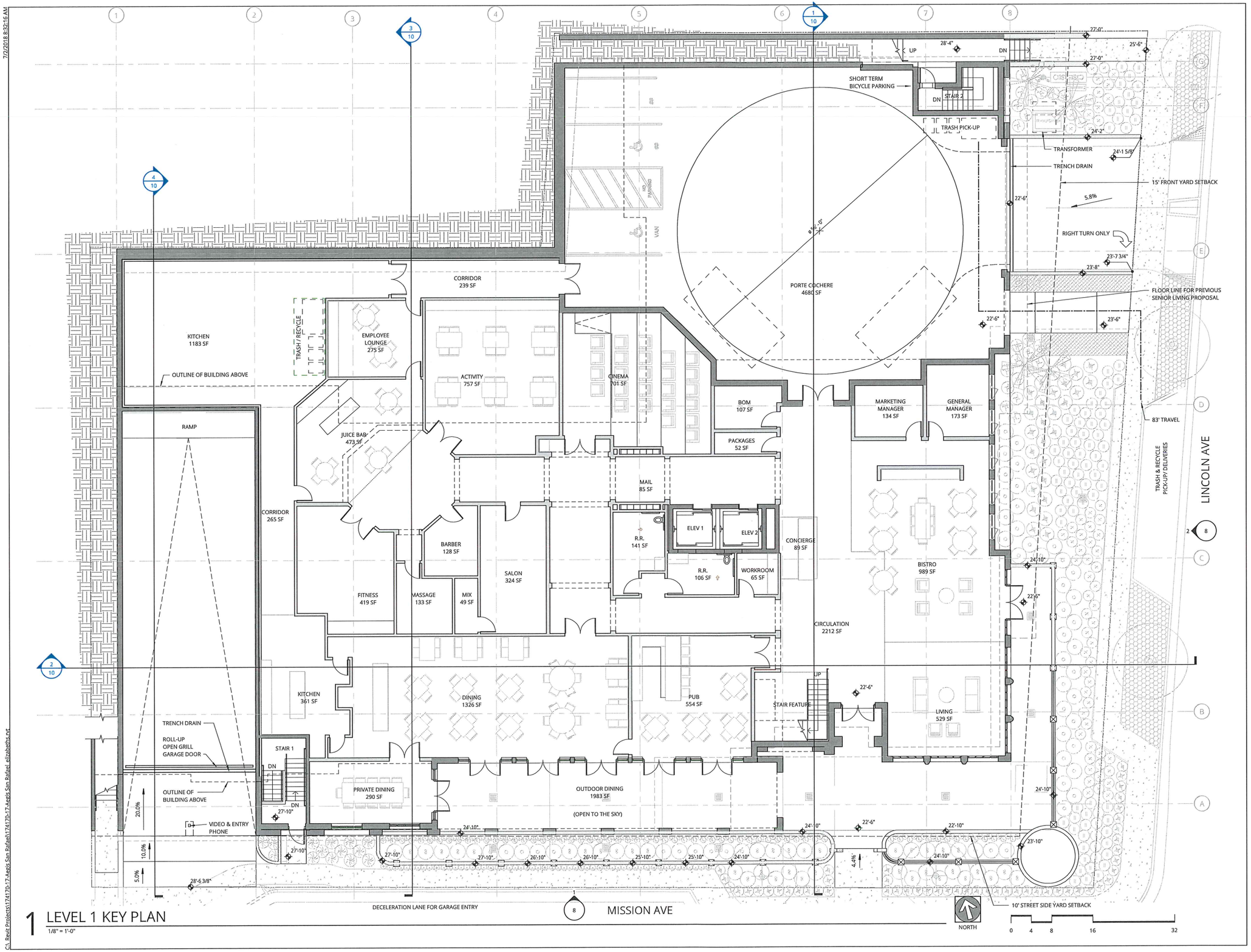

1 LEVEL 1 KEY PLAN

1/8" = 1'-0"

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38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

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SAN FRANCISCO, CA 94103
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REVISION	DATE	REASON FOR ISSUE

MAIN LEVEL PLAN

DATE 05.30.2018

PROJECT NUMBER 174170

SHEET NUMBER 3

7/2/2018 8:32:16 AM
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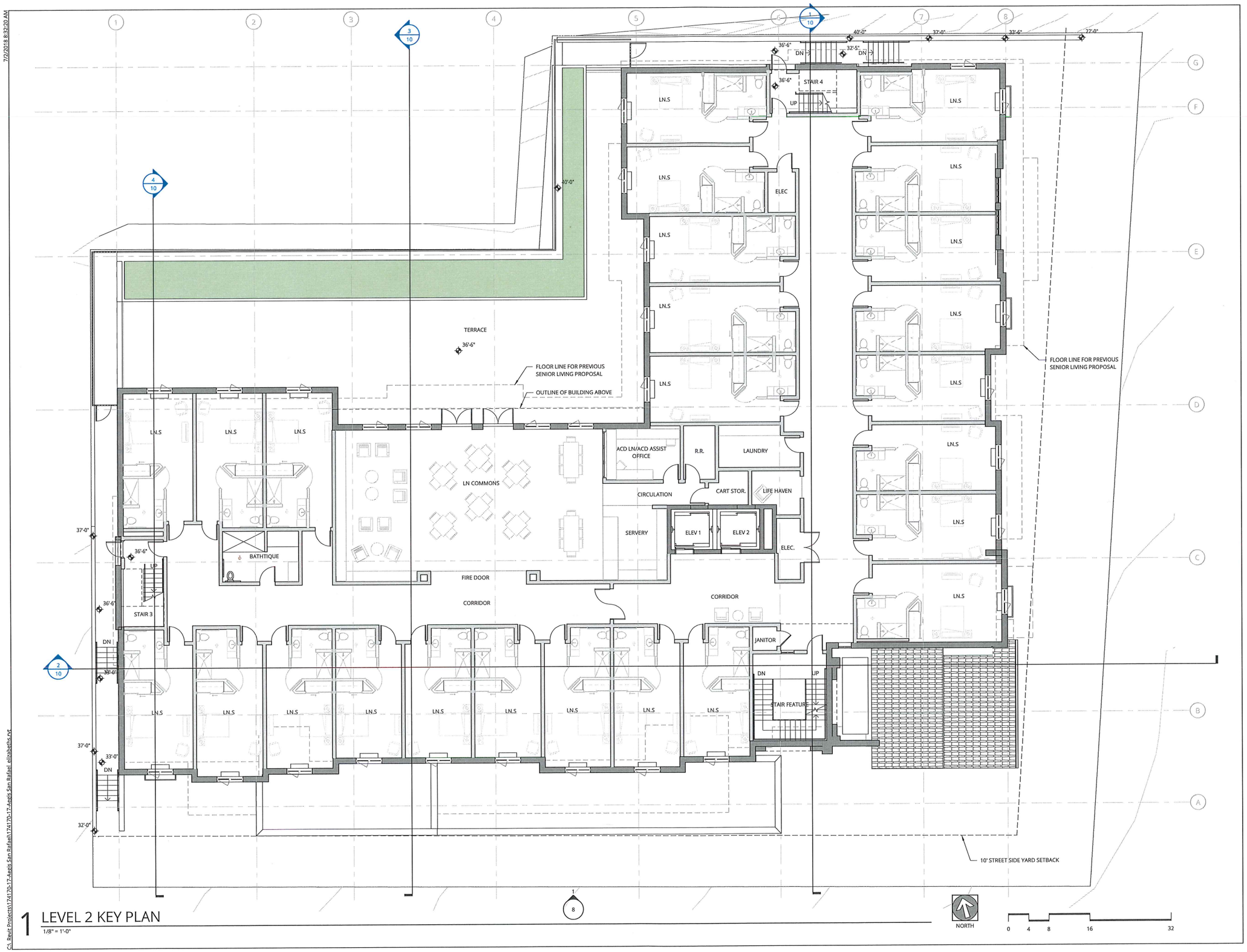

1 LEVEL 2 KEY PLAN
1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

FIRST FLOOR RESIDENTIAL PLAN

DATE 05.30.2018

PROJECT NUMBER 174170

SHEET NUMBER 4

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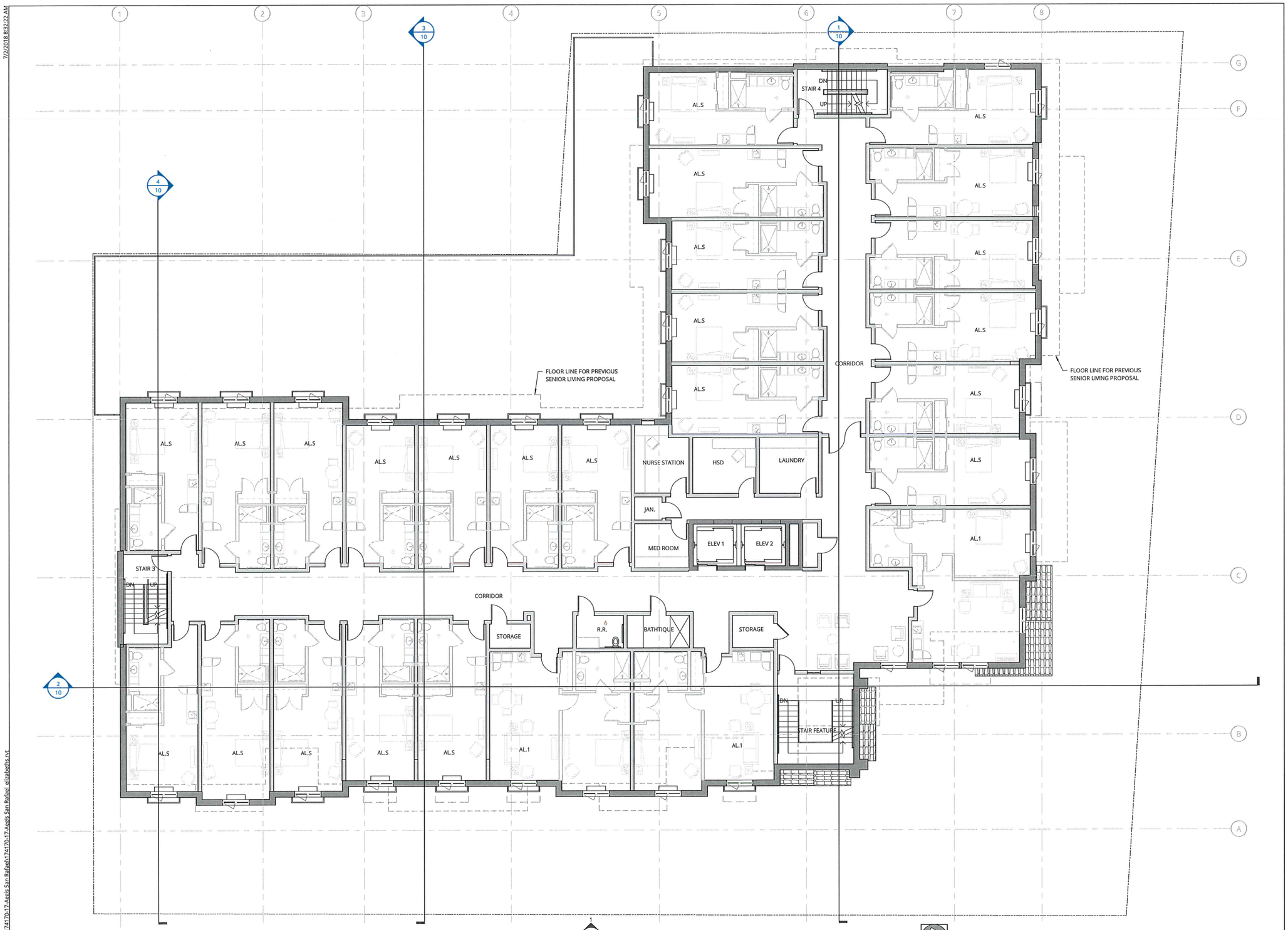

1 LEVEL 3 KEY PLAN / L4 SIM

1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

SECOND FLOOR RESIDENTIAL PLAN

DATE 05.30.2018

PROJECT NUMBER 174170

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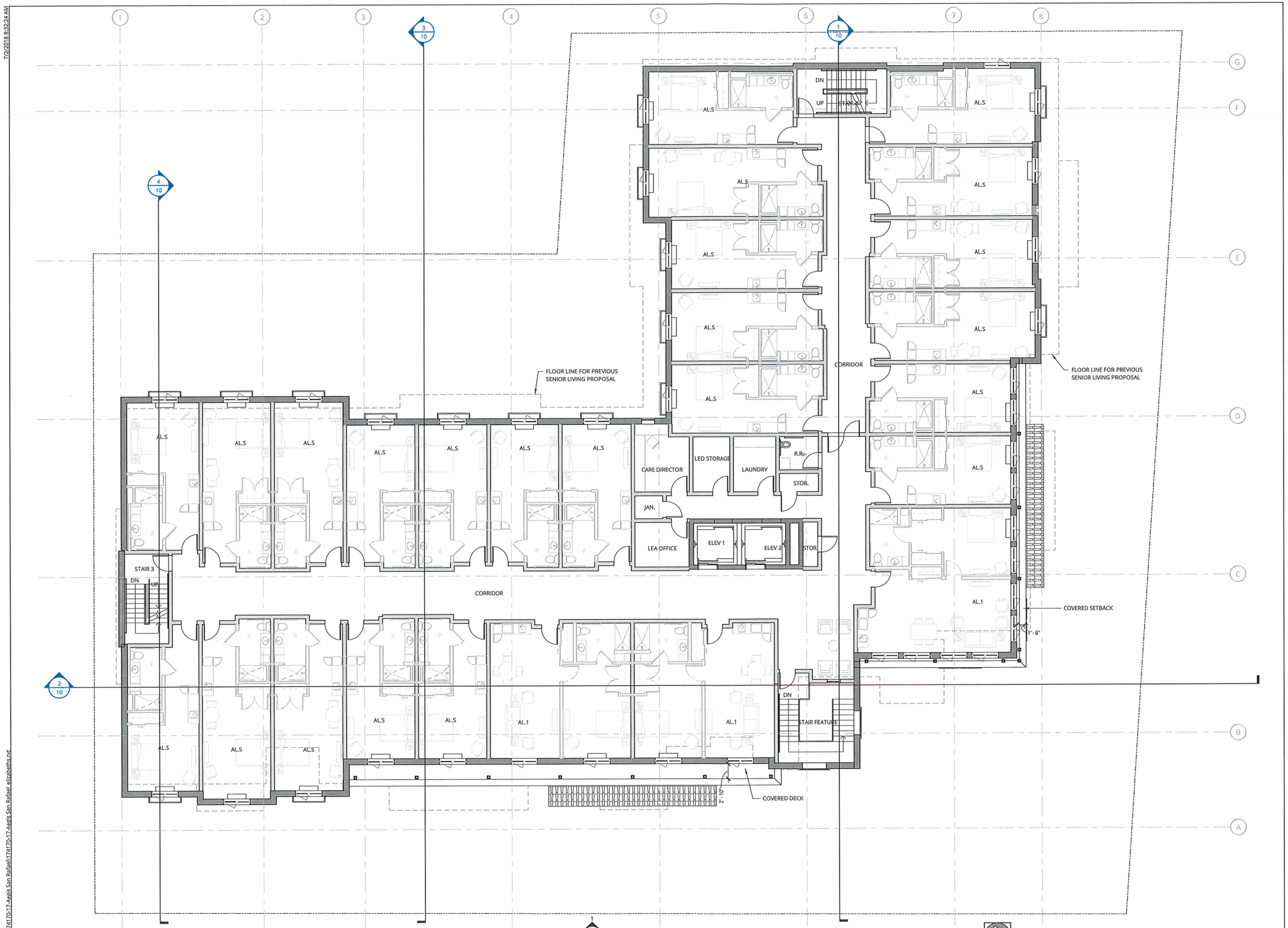

1 LEVEL 4 KEY PLAN

1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

THIRD FLOOR RESIDENTIAL PLAN

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER

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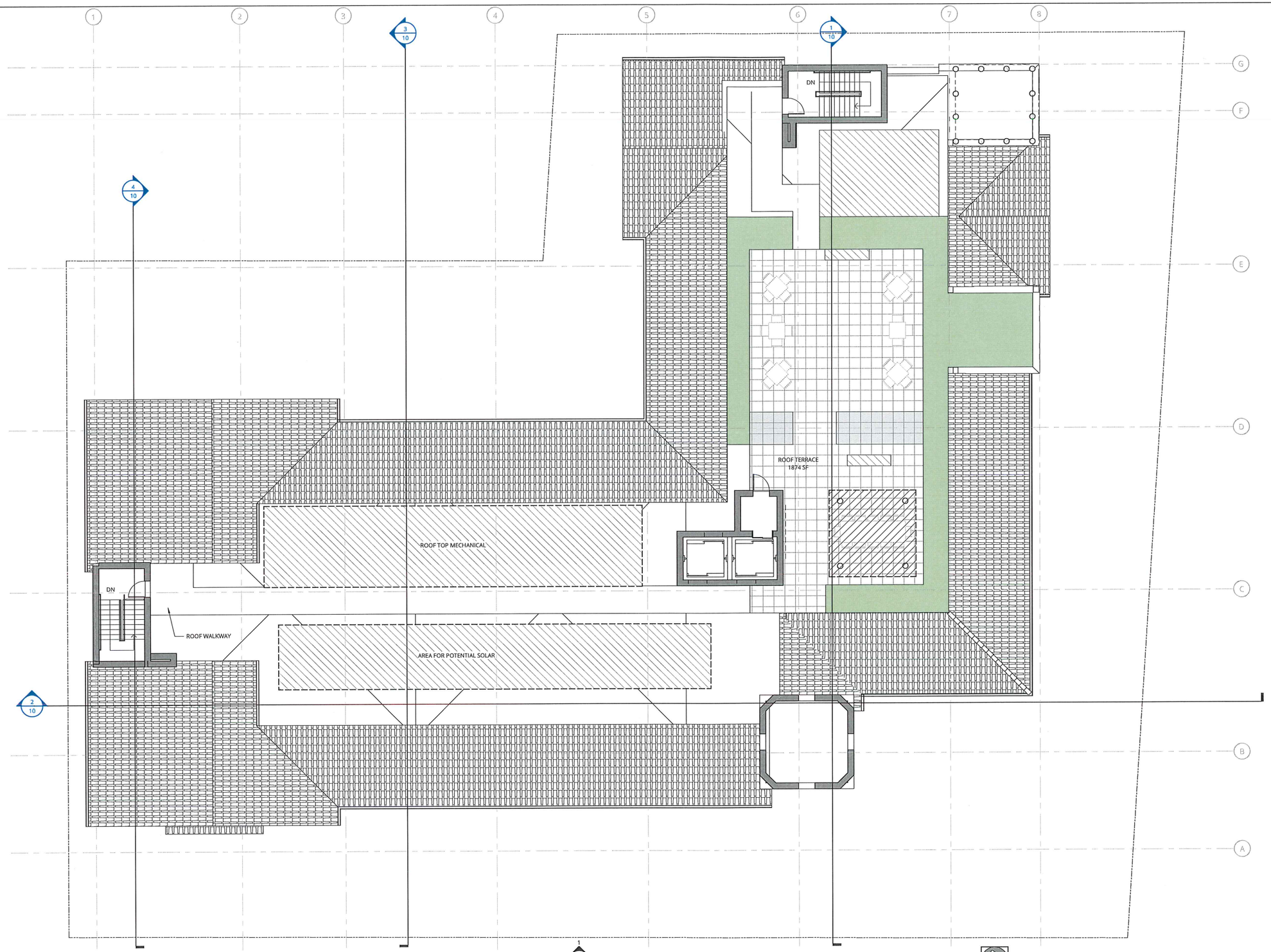

1 ROOF KEY PLAN
1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

ROOF PLAN

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
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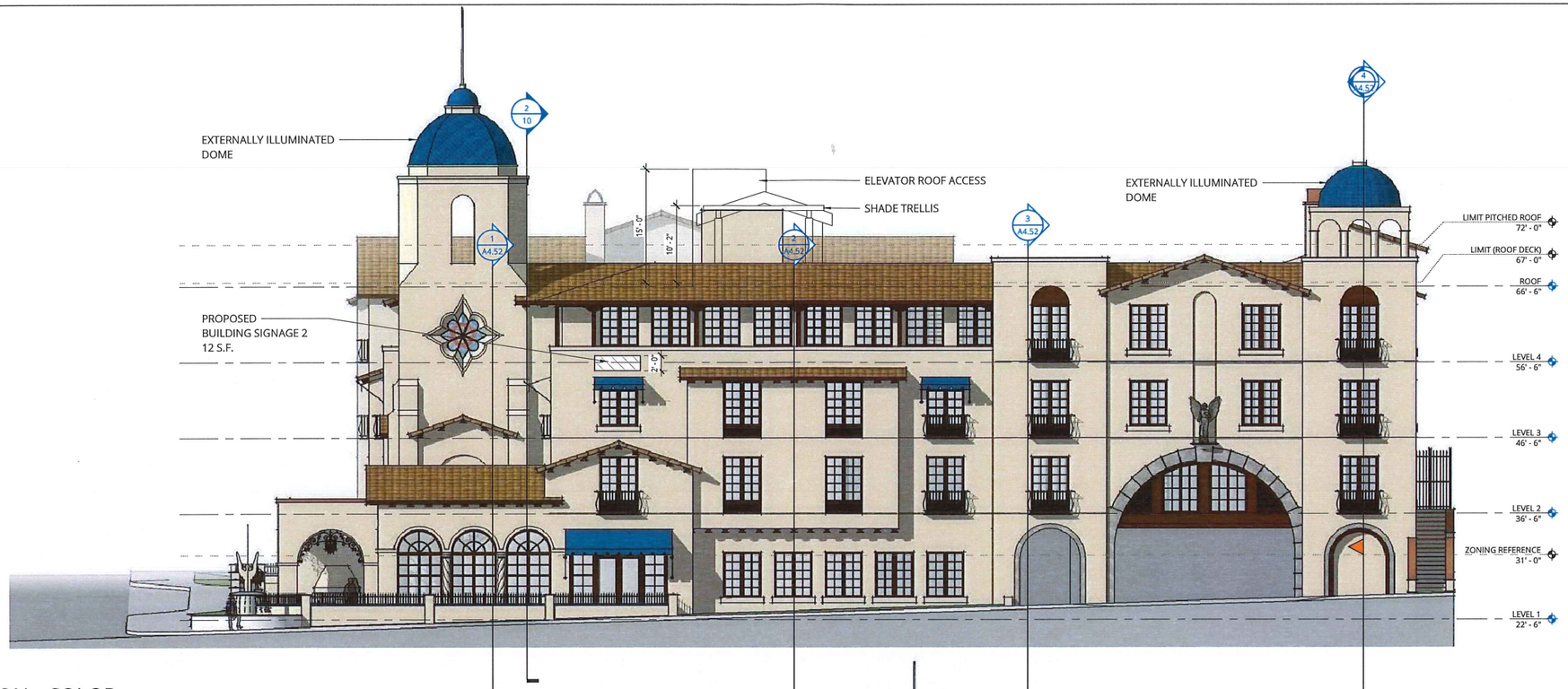
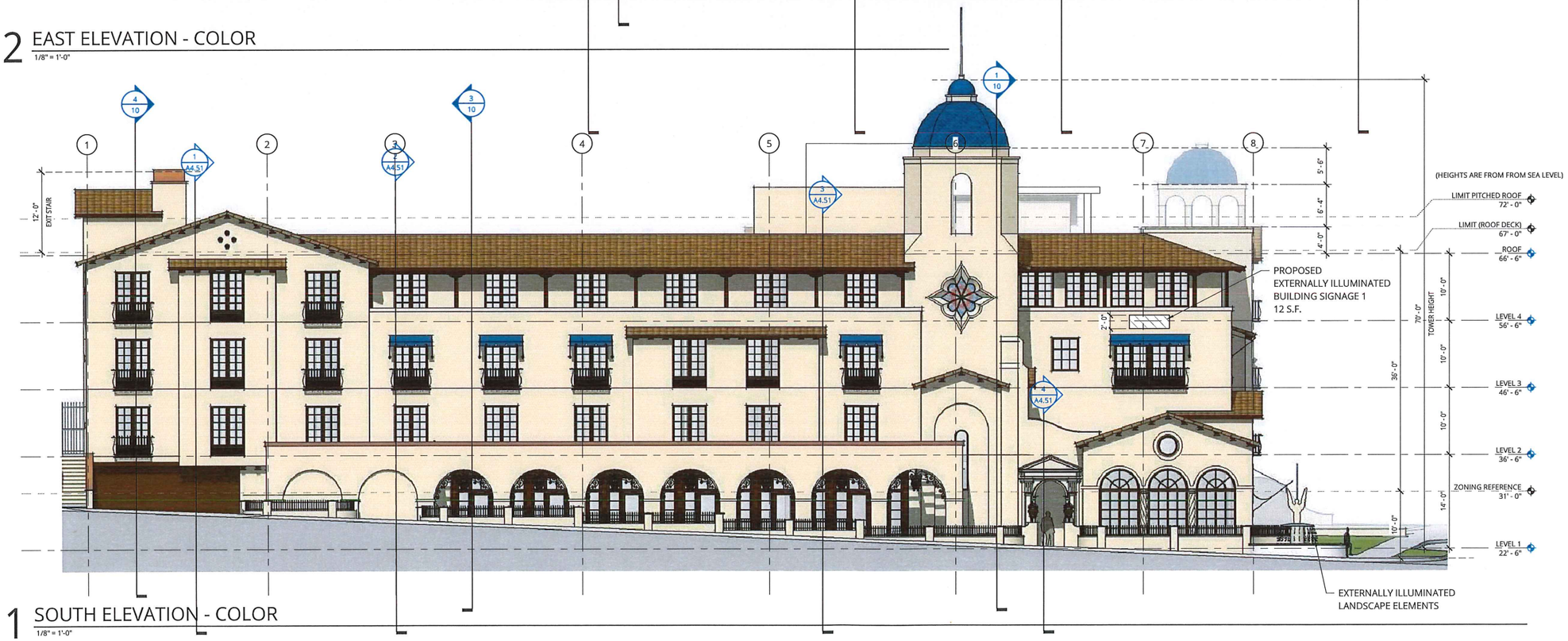


2 EAST ELEVATION - COLOR
1/8" = 1'-0"



1 SOUTH ELEVATION - COLOR
1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

EXTERIOR ELEVATIONS

DATE 05.30.2018

PROJECT NUMBER 174170

SHEET NUMBER 8

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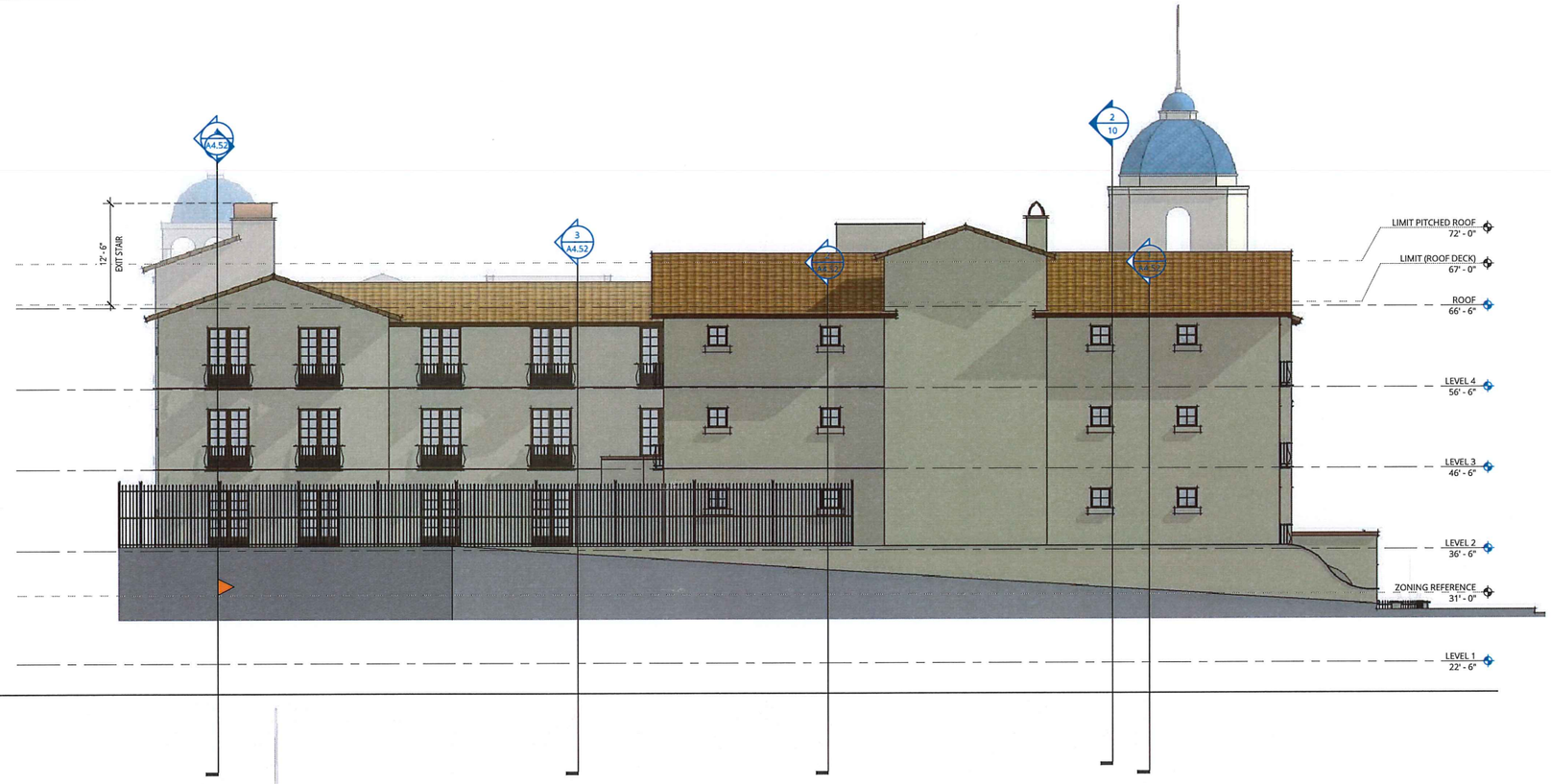
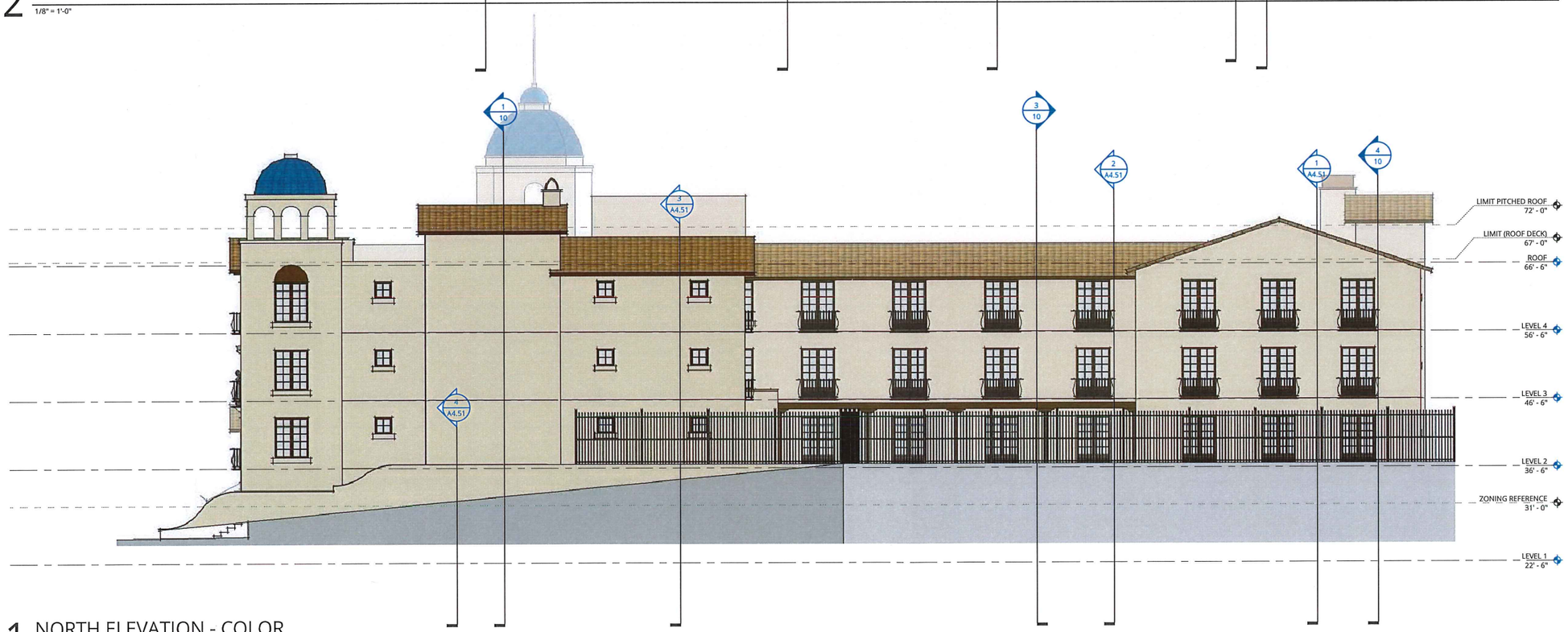


2 WEST ELEVATION - COLOR

1/8" = 1'-0"



1 NORTH ELEVATION - COLOR

1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

EXTERIOR ELEVATIONS

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
9

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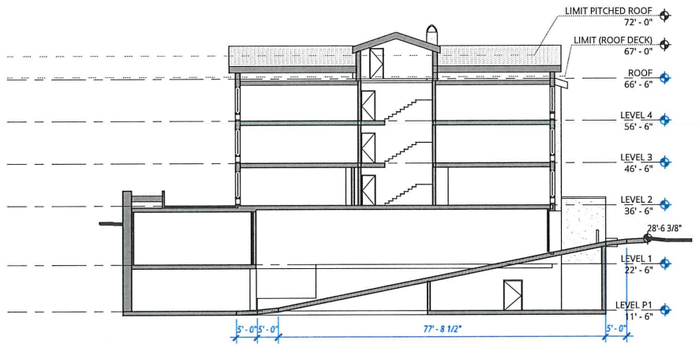
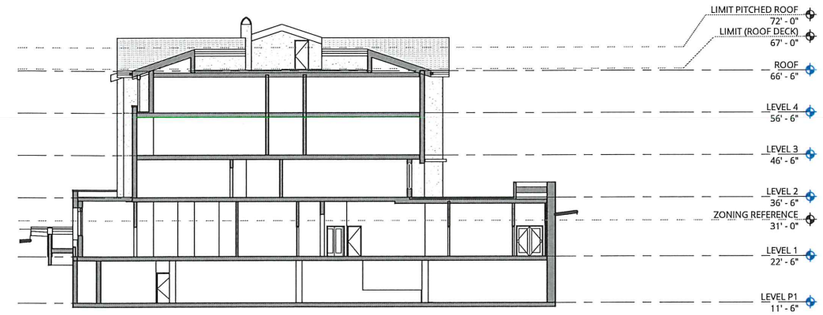
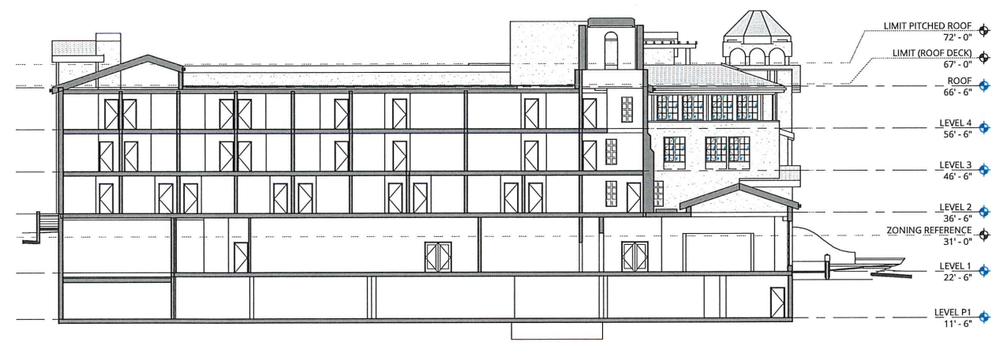


4 BUILDING SECTION AT PARKING RAMP
1/16" = 1'-0"



3 BUILDING SECTION 3
1/16" = 1'-0"



2 BUILDING SECTION 2
1/16" = 1'-0"

1 BUILDING SECTION 1
1/16" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

SECTIONS

DATE 05.30.2018

PROJECT NUMBER 174170

SHEET NUMBER 10

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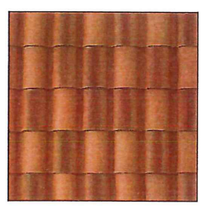
BUILDING MATERIALS, COLOR AND DETAILS

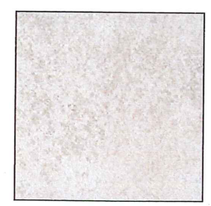


1. TILE ROOF

2. BLUE ROOF TILE

3. TIMBER DETAILING

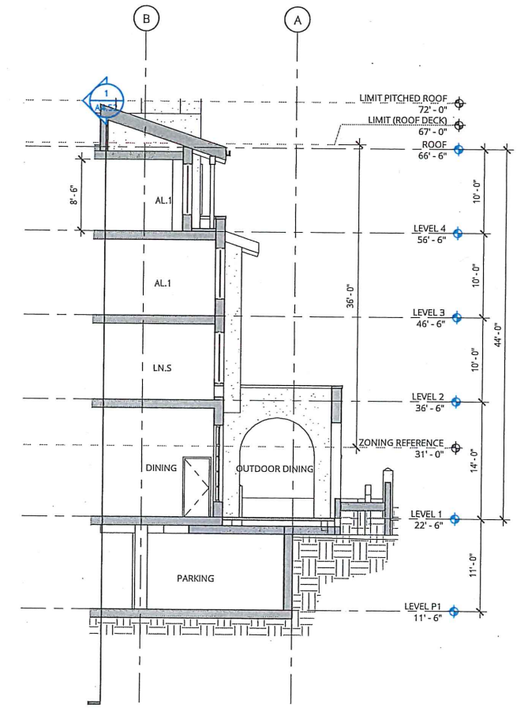
4. WROUGHT IRON



5. STUCCO

COLOR SELECTION: STUCCO SW-7569

6. FABRIC AWNINGS



1 WALL SECTION
1/8" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

DETAILS

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
11

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LEGEND

PROPERTY LINE	FOUND 1/2" IP (TAGGED LS 2738)
FENCE LINE	D/W DRIVEWAY
TELE/CABLE OVERHEAD LINES	SANITARY SEWER MH
ELECTRIC LINES	STORM DRAIN MH
CATCH BASIN	TP TELEPHONE POLE
UTILITY BOX	SSCO SANITARY SEWER CLEANOUT
POLE GUY/ANCHOR LOCATION	(R1) 18 PM 98
	R/W RIGHT-OF-WAY

BASIS OF BEARINGS

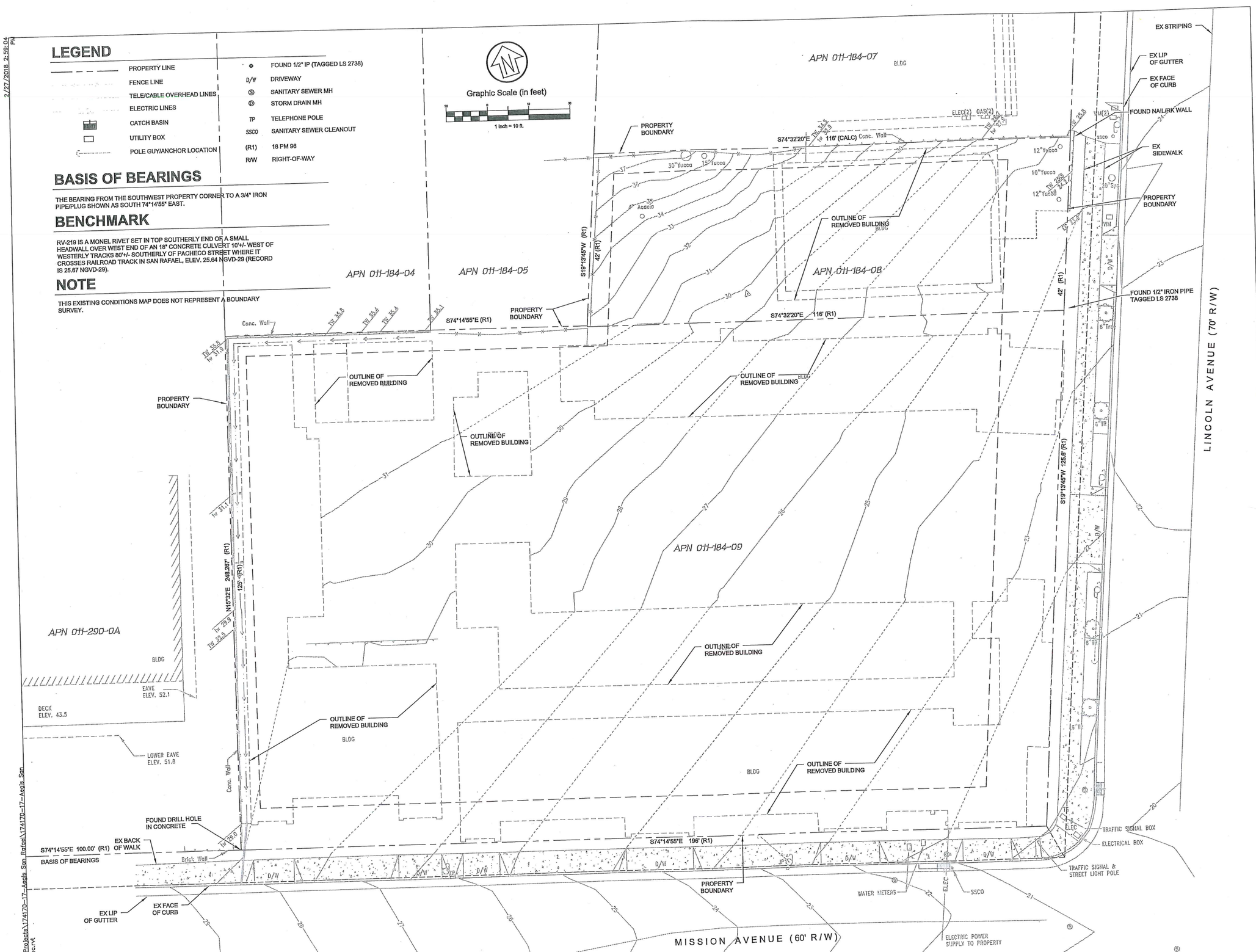
THE BEARING FROM THE SOUTHWEST PROPERTY CORNER TO A 3/4" IRON PIPE/PLUG SHOWN AS SOUTH 74°14'55" EAST.

BENCHMARK

RV-219 IS A MONEL RIVET SET IN TOP SOUTHERLY END OF A SMALL HEADWALL OVER WEST END OF AN 18" CONCRETE CULVERT 10'+/- WEST OF WESTERLY TRACKS 80'+/- SOUTHERLY OF PACHECO STREET WHERE IT CROSSES RAILROAD TRACK IN SAN RAFAEL, ELEV. 25.84 NGVD-29 (RECORD IS 25.67 NGVD-29).

NOTE

THIS EXISTING CONDITIONS MAP DOES NOT REPRESENT A BOUNDARY SURVEY.



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REVISION	DATE	REASON FOR ISSUE
1	4/25/18	RESPONSE TO COMMENTS
		NO CHANGES THIS SHEET
2	5/15/18	NO CHANGES THIS SHEET

REGISTERED PROFESSIONAL ENGINEER
KRISTINE N. PILLSBURY
No. 61685
CIVIL
STATE OF CALIFORNIA

PRELIMINARY

SITE SURVEY

RESUBMITTAL SET

DATE 03.05.2018

PROJECT NUMBER 164890

SHEET NUMBER C0.00

\Projects\174170-17-Aegis San Rafael\174170-17-Aegis San

ABBREVIATIONS

AB	AGGREGATE BASE	FC	FACE OF CURB
AC	ASPHALT CONCRETE	FF	FINISH FLOOR
AD	AREA DRAIN	FG	FINISH GRADE
ACR	ACCESS COMPLIANT RAMP	FH	FIRE HYDRANT
BSW	BACK OF SIDEWALK	FL	FLOWLINE
CB	CATCH BASIN	FS	FINISH SURFACE
DI	DROP INLET	GB	GRADE BREAK
DL	DAYLIGHT	GFF	GARAGE FINISH FLOOR
DWG	DRAWING	HP	HIGH POINT
DWY	DRIVEWAY	INV	INVERT
EG	EXISTING GRADE	JP	JOINT POLE
EL	ELEVATION	JT	JOINT TRENCH
EP	EDGE OF PAVEMENT	LF	LINEAR FEET
(E), EX	EXISTING	LP	LOW POINT
MH	MANHOLE	SSCO	SANITARY SEWER CLEANOUT
NO.	NUMBER	SSMH	SANITARY SEWER MANHOLE
NTS	NOT TO SCALE	SW	SIDEWALK
PB	PULLBOX	TC	TOP OF CURB
P.C.C.	PORTLAND CEMENT CONCRETE	TG	TOP OF GRATE
PRO	PROPOSED	TW	TOP OF WALL
PVC	POLYVINYL CHLORIDE PIPE	tw	TOE OF WALL
R/W	RIGHT OF WAY	UCS	UNIFORM CONSTRUCTION STANDARDS
SD	STORM DRAIN	UNO	UNLESS NOTED OTHERWISE
SDCO	STORM DRAIN CLEANOUT	VIF	VERIFY IN FIELD
SDMH	STORM DRAIN MANHOLE	WL	WATER LINE
SF	SQUARE FEET		
SS	SANITARY SEWER		

PRELIMINARY GRADING QUANTITIES:

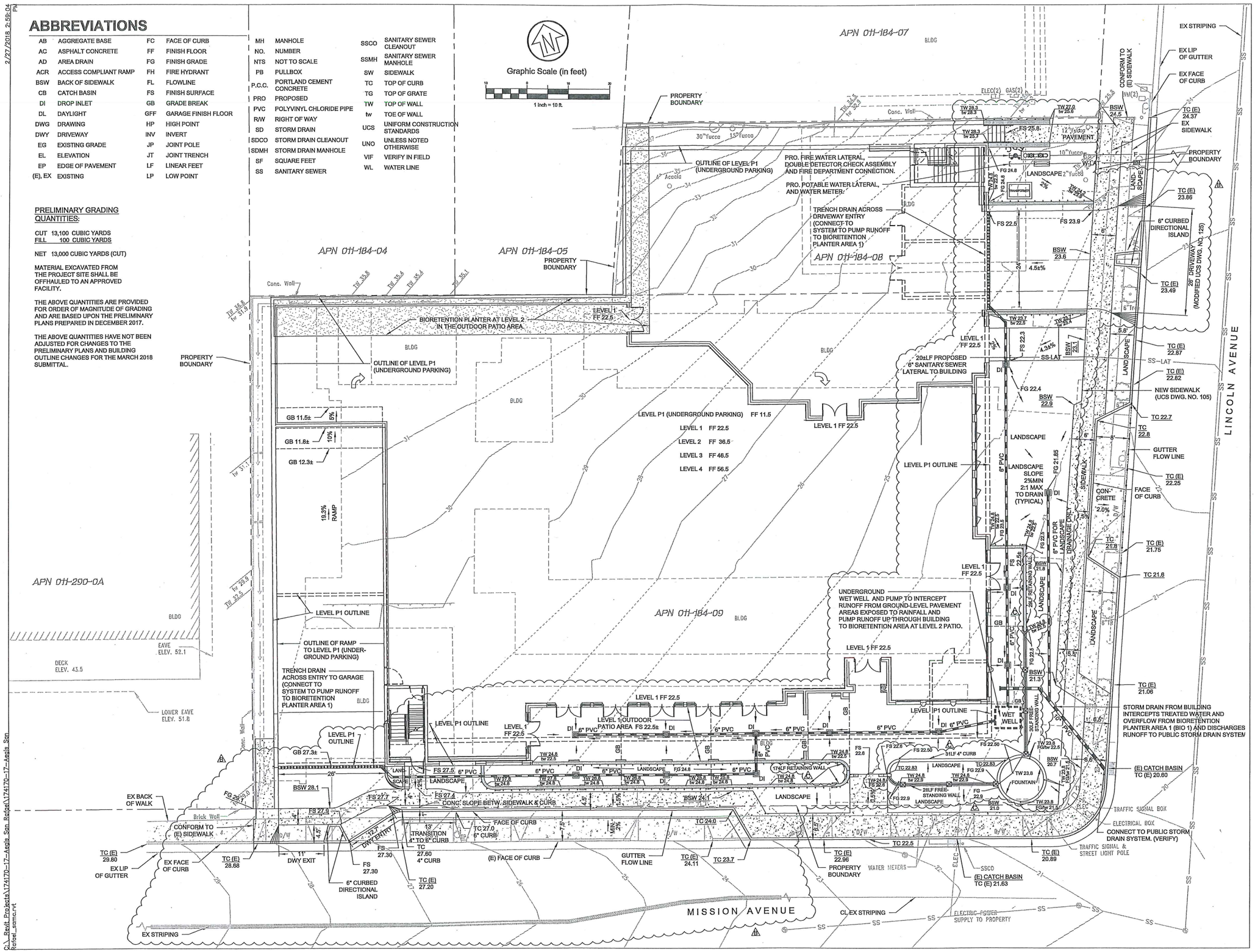
CUT 13,100 CUBIC YARDS
FILL 100 CUBIC YARDS

NET 13,000 CUBIC YARDS (CUT)

MATERIAL EXCAVATED FROM THE PROJECT SITE SHALL BE OFFHAULED TO AN APPROVED FACILITY.

THE ABOVE QUANTITIES ARE PROVIDED FOR ORDER OF MAGNITUDE OF GRADING AND ARE BASED UPON THE PRELIMINARY PLANS PREPARED IN DECEMBER 2017.

THE ABOVE QUANTITIES HAVE NOT BEEN ADJUSTED FOR CHANGES TO THE PRELIMINARY PLANS AND BUILDING OUTLINE CHANGES FOR THE MARCH 2018 SUBMITTAL.



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ASC SAN RAFAEL LLC

REVISION	DATE	REASON FOR ISSUE
1	4/20/18	REVISE GARAGE ENTRY
2	4/25/18	RESPONSE TO COMMENTS
3	5/15/18	ADD SITE WALL INFORMATION

REGISTERED PROFESSIONAL ENGINEER KRISTINE N. PILLSBURY No. 61685 CIVIL STATE OF CALIFORNIA

PRELIMINARY

GRADING, DRAINAGE AND UTILITY PLAN

RESUBMITTAL SET

DATE 03.05.2018
PROJECT NUMBER 164890
SHEET NUMBER C1.00

2/27/2018 2:59:04 PM

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Graphic Scale (in feet)

1 Inch = 10 ft.

LEGEND

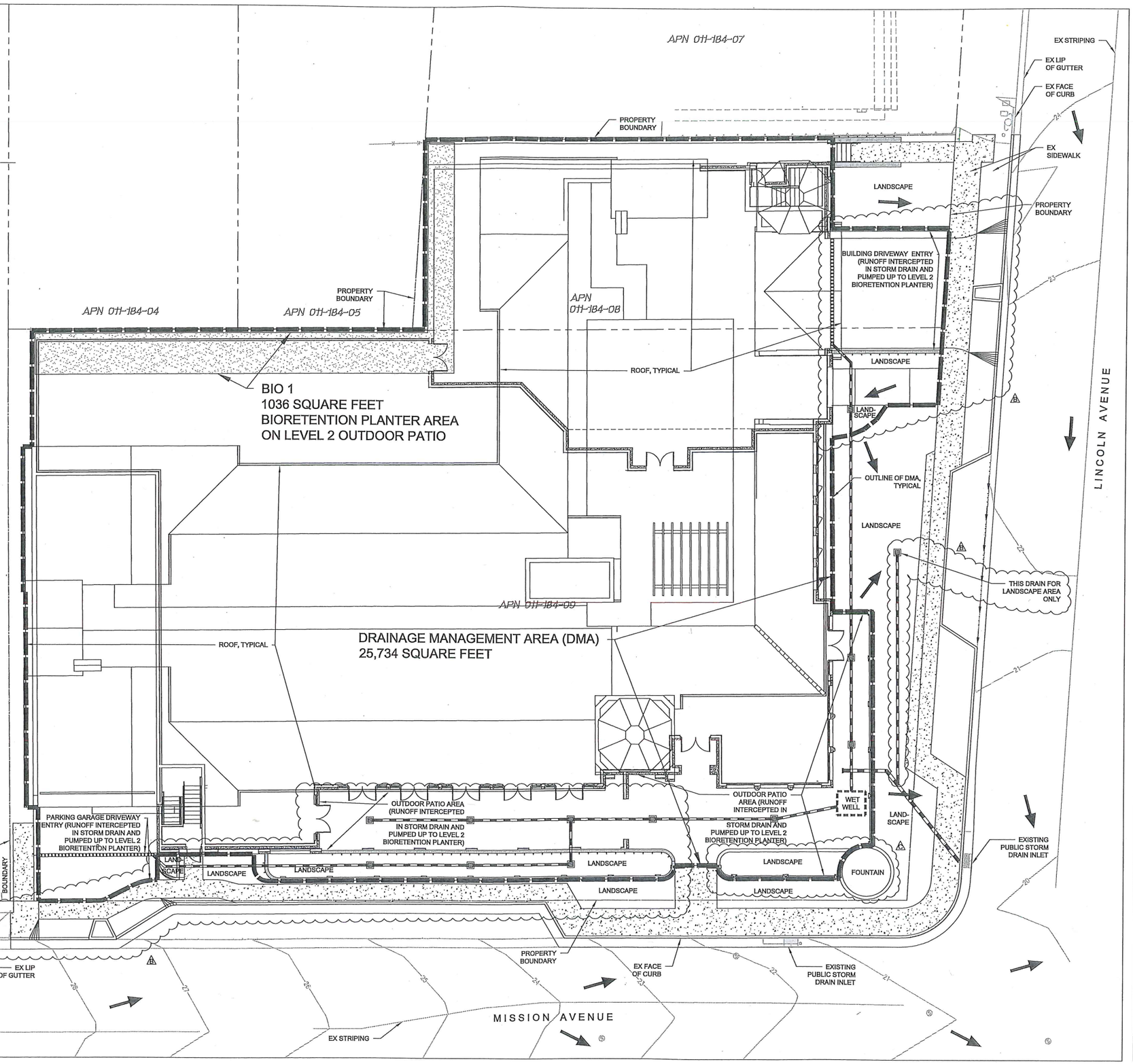
# / XXX AC / C	DRAINAGE AREA DESIGNATION AREA IN SQUARE FEET
→	OVERLAND FLOW DIRECTION
— — —	DRAINAGE AREA BOUNDARY

NOTES:

1. AS THE PROJECT DESIGN PROGRESSES TO A LEVEL COMMENSURATE FOR PERMITTING AND CONSTRUCTION, THE PLACEMENT AND CONFIGURATION OF PROPOSED STORMWATER TREATMENT MEASURES SHOWN HEREON ARE SUBJECT TO REFINEMENT, RELOCATION AND REPLACEMENT BY ALTERNATIVE MEASURES.

2. AS THE PROJECT DESIGN PROGRESSES TO A LEVEL COMMENSURATE FOR PERMITTING AND CONSTRUCTION, REFINEMENT, RELOCATION AND REPLACEMENT OF THE TREATMENT MEASURES SHOWN HEREON WILL CONTINUE TO MEET THE REQUIREMENTS OF THE CITY OF SAN RAFAEL AND THE BASMAA POST-CONSTRUCTION MANUAL.

3. ALTERNATIVE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, MANUFACTURED FILTRATION SYSTEMS IN UNDERGROUND VAULTS, SELF-RETAINING AREAS, PERMEABLE PAVEMENT AND ROOFTOP VEGETATED AREAS.



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REVISION	DATE	REASON FOR ISSUE
1	4/20/18	REVISE GARAGE ENTRY
2	4/25/18	RESPONSE TO COMMENTS
3	5/15/18	ADD SITE WALL INFORMATION

REGISTERED PROFESSIONAL ENGINEER
KRISTINE N. PILLSBURY
No. 61685
CIVIL
STATE OF CALIFORNIA

PRELIMINARY

STORMWATER CONTROL PLAN

RESUBMITTAL SET

DATE	PROJECT NUMBER
03.05.2018	164890

SHEET NUMBER

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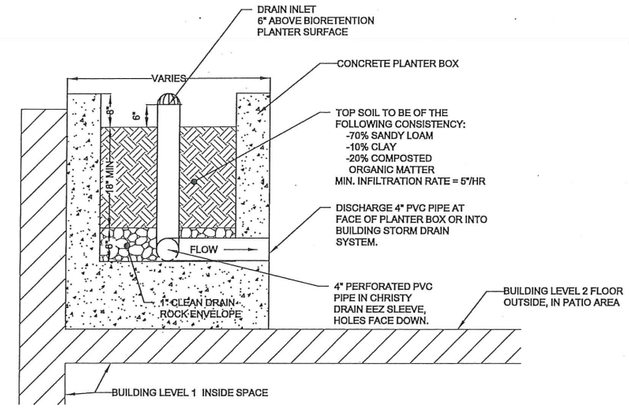

2 BIORETENTION PLANTER DETAIL
SCALE: 1" = 1'

BIORETENTION SIZING TABLE

DMA	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	(DMA AREA) x (RUNOFF FACTOR)	FACILITY NAME		
					BIORETENTION AREA 1 (BIO 1)		
DMA 1	21,746	ROOF	1.0	21,746	SIZING FACTOR	MINIMUM FACILITY AREA (SF)	PROPOSED FACILITY AREA (SF)
	3,183	PAVEMENT	1.0	3,183			
	805	LANDSCAPE	0.1	81			
TOTAL	25,734			25,010	0.04	1,000	1,036

B AND C

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REVISION	DATE	REASON FOR ISSUE
A	4/20/18	ADJUST PAVEMENT AREA
B	4/25/18	RESPONSE TO COMMENTS
C	5/15/18	REVISED TABLE DUE TO ADDED LANDSCAPE

REGISTERED PROFESSIONAL ENGINEER
KRISTINE N. PILLSBURY
No. 61885
CIVIL
STATE OF CALIFORNIA

PRELIMINARY

STORMWATER CONTROL DETAIL AND TABLES

RESUBMITTAL SET

DATE 03.05.2018
PROJECT NUMBER 164890
SHEET NUMBER C2.01

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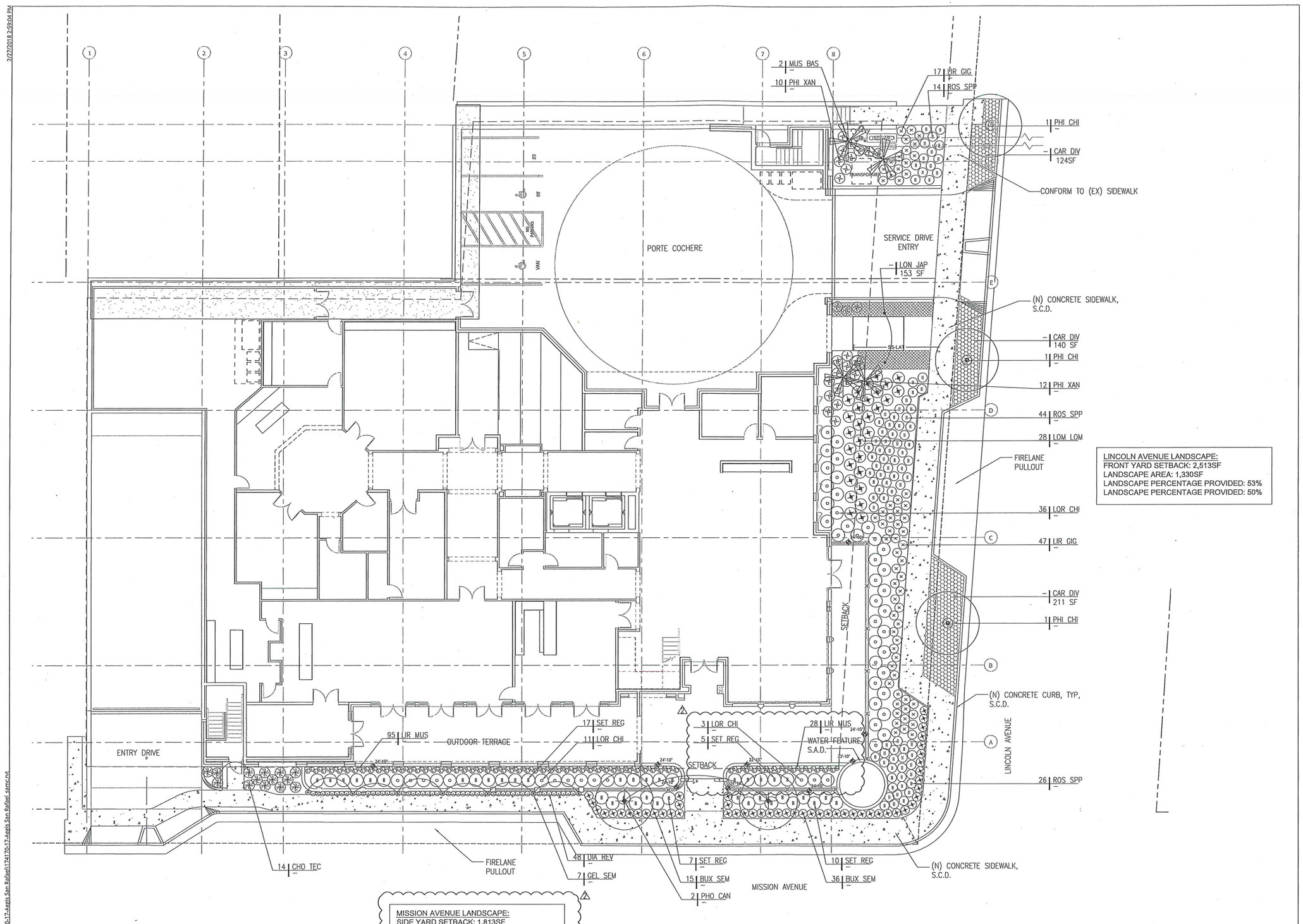

NOTE:
1. SEE SHEET L2.O FOR PLANTING SCHEDULE & PROJECT NOTES.
2. SEE SHEET L2.1 FOR PLANTING DETAILS ASSOCIATED TO GROUND LEVEL PLANTING

NOT FOR CONSTRUCTION

Ankrom Moisan™
38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063
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STUDIO GREEN
Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone (415) 721-0905
Fax (415) 721-0910
Email info@studiogreen.com
www.studiogreen.com

AEGIS SAN RAFAEL
800 MISSION AVENUE SAN RAFAEL CA 94549

ASC SAN RAFAEL LLC

REVISION	DATE	REASON FOR ISSUE
1	4/25/2018	RESPONSE TO COMMENTS
2	5/16/2018	RESPONSE TO COMMENTS

SHEET TITLE
PLANTING PLAN

RESUBMITTAL SET

DATE	PROJECT NUMBER
03.05.2018	164890

SHEET NUMBER
L1.1

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PLANTING SCHEDULE

ABBREV	BOTANICAL	COMMON NAME	SIZE	SPACING	MATURE SIZE/ PLANT TYPE	WUCOLS RATING
TREES						
MUS BAS	MUSA BASJOO	JAPANESE BANANA	25 GAL	4' O.C.	12'/ HERBACEOUS	MEDIUM
PHO CAN	PHOENIX CANARIENSIS	CANARY ISLAND DATE PALM	36" BOX	30' O.C.	30'+ / EVERGREEN	MEDIUM
PIS CHI	PISTACIA CHINENSIS	CHINESE PISTACHE	36" BOX	PER PLANS	30'/ DECIDUOUS	LOW
SHRUBS & GRASSES						
BUX SEM	BUXUS SEMPERVIRENS 'SUFFRUTICOSA'	DWARF BOXWOOD	1 GAL	1'-0"	2'/ EVERGREEN	MEDIUM
CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	1'-8"	12"/ EVERGREEN	VERY LOW
CHO TEC	CHONDROPETALUM TECTORUM	SMALL CAPE RUSH	1 GAL	2'-0"	2' / EVERGREEN	LOW
DIA REV	DIANELLA REVOLUTA 'LITTLE REV'	LITTLE REV FLAX LILY	1 GAL	1'-6"	18" / EVERGREEN	LOW
LIR GIG	LIRIOPE GIGANTEA	GIANT LILY TURF	1 GAL	1'-6"	18"/ EVERGREEN	MEDIUM
LIR MUS	LIRIOPE MUSCARI	BLUE LILY TURF	1 GAL	1'-0"	12"/ EVERGREEN	MEDIUM
LOM LON	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	2'-6"	2' / EVERGREEN	LOW
LON JAP	LONICERA JAPONICA	JAPANESE HONEYSUCKLE	1 GAL	3'-0"	2' / EVERGREEN	MEDIUM
LOR CHI	LOROPETALUM CHINENSE	FRINGE FLOWER	5 GAL	4'-6"	3'-6' / EVERGREEN	LOW
PHI XAN	PHILODENDRON XANADU	PHILODENDRON	1 GAL	3'-0"	2' / EVERGREEN	MEDIUM
ROS SPP	ROSA SPECIES	GROUNDCOVER CARPET ROSE 'PINK'	1 GAL	3'-0"	18" TO 2' / SEMI-EVERGREEN	MEDIUM
STR REG	STRELITZIA REGINAE	BIRD OF PARADISE	5 GAL	4'	4' TO 6' / EVEGREEN	MEDIUM
VINES						
GEL SEM	GELSEMIUM SEMPERVIRENS 'MARGARITA'	HARDY CAROLINA JASMINE	1 GAL	4'-0	6'-8' TRAILING/EVERGREEN	MEDIUM

PLANT CHARACTER IMAGERY

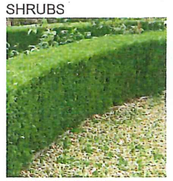
TREES

MUSA BASJOO

PHOENIX CANARIENSIS

PISTACIA CHINENSIS

SHRUBS


BUXUS SEMPERVIRENS 'SUFFRUTICOSA'

CAREX DIVULSA

CHONDROPETALUM TECTORUM

DIANELLA REVOLUTA 'LITTLE REV'

LIRIOPE GIGANTEA

LOMANDRA LONGIFOLIA 'BREEZE'

LONICERA JAPONICA

LOROPETALUM CHINENSE

PHILODENDRON XANADU

ROSA SPECIES

STRELITZIA REGINAE

LIRIOPE MUSCARI

VINES

GELSEMIUM SEMPERVIRENS 'MARGARITA'

PLANTING NOTES

1. Plant list provided is for the convenience of the Contractor. In case of discrepancies, the plan shall govern.
2. Unless otherwise noted, all groundcover and shrubs shall be spaced triangularly.
3. All plants shall conform to standards set in the American Standards for Nursery Stock by the American Association of Nurserymen. All plants to be container stock, healthy, vigorous, pest and disease-free, and without fresh abrasions to the bark or excessive abrasions or disfigurements. All plants shall have well-developed branch systems and fibrous root systems which are not pot-bound. All plants shall be of the species, variety, size and condition as specified on the drawings.
4. All plants brought onto the site shall be watered and protected from excessive wind, sun, physical damage, or theft until planting.
5. All plants shall be placed in approximate locations on plan. Final adjustment shall be made by the Landscape Architect prior to planting. The Landscape Architect reserves the right to make deletions, additions, or substitutions to the planting plan in the field as necessary, with adjustments in the contract as appropriate.
6. Areas with 1 gallon or smaller pots shall have a soil amendment. Rototill the amendment to a depth of 8". Take care not to rototill within the drip line of existing trees to remain; instead, perform the work by hand to protect roots. Amend with 'Walt Whitman' or equal amendment at a rate of 6 cu yds per 1000sq ft.
7. Areas with 5 gallon or larger size containers shall be planted by plant pit. When pits have been backfilled approximately 2/3 their depth, water thoroughly with a hose before installing remainder of planting mix to top of pit. When backfilling is partially completed, extra care should be taken to see that planting mix is worked around root ball. Eliminate air pockets. Backfilling shall be completed by a tamping process. Do not allow root balls to dry out before planting. Do not allow soil or dense mulch to biuld up around stem of plant.
8. A mound of earth shall be formed around each tree or shrub to produce a shallow basin to retain water, located on the backfill such that water will be forced throughout the root ball. Plants shall be watered in place during and after backfilling.
9. Shrub and tree backfill mix shall be a ratio of 70% native soil to 30% amendment.
10. All trees shall be staked. Stakes shall be lodgepole pine, copper napthanate treated 10'x2" diameter with chamfered top. Stakes shall be driven 2' into firm ground and fastened securely with ties. All stakes to be set plumb.
11. All 1 gallon or larger size trees and shrubs shall have BestPak or equal fertilizer packets set at the midpoint of the backfill, amount and size according to the manufacturer's recommendations. All smaller size containers shall be fertilized with Osmocote or equal at the manufacturer's recommended application rate.
12. All areas shall be treated with pre-emergent herbicide by a Certified Applicator. Applications shall be to pre-dampened soil within three days of planting, after having been thoroughly watered in and before mulch has been applied. After this initial application, weed seed germination may be controlled by subsequent applications of pre-emergent on March 1st and September 15th.
13. The Contractor is responsible for maintenance of the landscape until final approval.
14. Trees and shrubs shall be under warranty for a period of 9 months, all other planting for 90 days from the date of final project approval by the Owner. Upon determination by Landscape Architect, replacement shall require plants of the same species, variety, and size and will be at the Contractor's expense.
15. Per MMWD Ordinance 421, Contractor to cover all planting areas with 3" layer of bark mulch on all exposed soils (except turf areas) provide samples to Landscape Architect for final approval.
16. Per MMWD Ordinance 421, Contractor to provide compost or natural fertilizer to all planting areas at a rate of 6 cubic yards per 1000 sq ft. with a min depth of 8". A min of 8" of non-mechanically compacted soil shall be available for water absorption & root growth in planted areas.

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SHEET TITLE
PLANTING SCHEDULE

RESUBMITTAL SET

DATE	PROJECT NUMBER
03.05.2018	164890

SHEET NUMBER
L2.0

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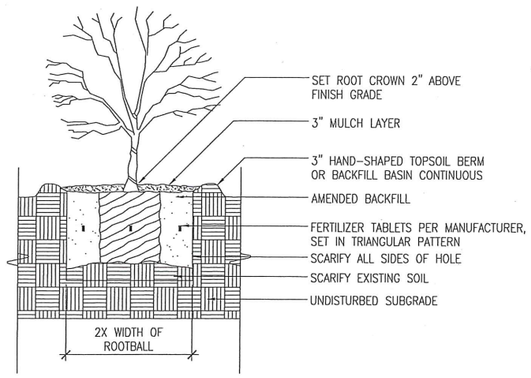
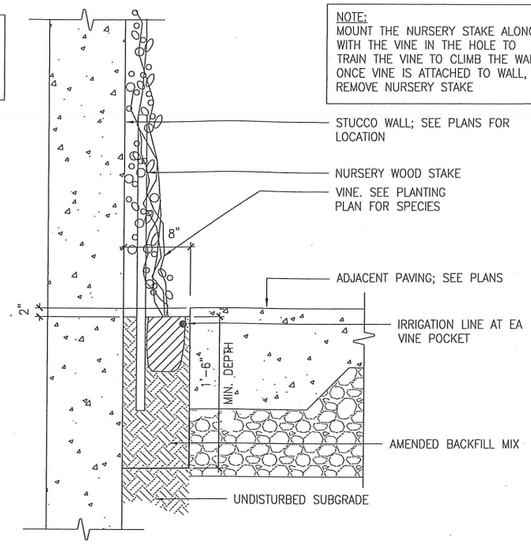
NOTES:
1. REMOVE CONTAINER BEFORE INSTALLING; LOOSEN & SCARIFY THE ROOTBALL.
2. HAND-COMPACT SOIL AROUND ROOTBALL
3. THOROUGHLY SOAK PLANT WITH A FINE MIST AFTER INSTALLATION.



SHRUB PLANTING ON NATURAL GRADE

SCALE: NTS

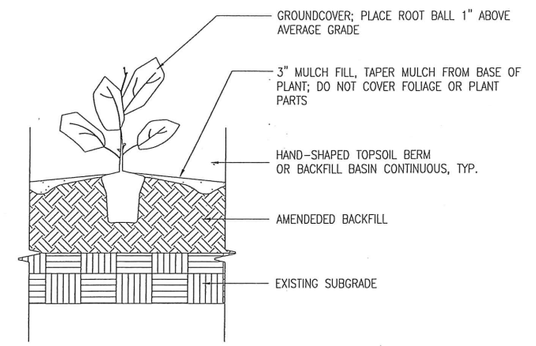
NOTE:
MOUNT THE NURSERY STAKE ALONG WITH THE VINE IN THE HOLE TO TRAIN THE VINE TO CLIMB THE WALL. ONCE VINE IS ATTACHED TO WALL, REMOVE NURSERY STAKE



VINE POCKET @ WALL

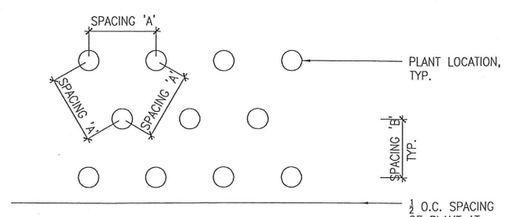
SCALE: 1 1/2"=1'-0"

NOTE:
1. REMOVE CONTAINER BEFORE INSTALLING; LOOSEN & SCARIFY THE ROOTBALL.
2. COMPACT SOIL AROUND ROOT BALL
3. THOROUGHLY SOAK PLANT WITH A FINE MIST AFTER INSTALLATION UNTIL IRRIGATION IS INSTALLED.



GROUNDCOVER PLANTING

SCALE: NTS

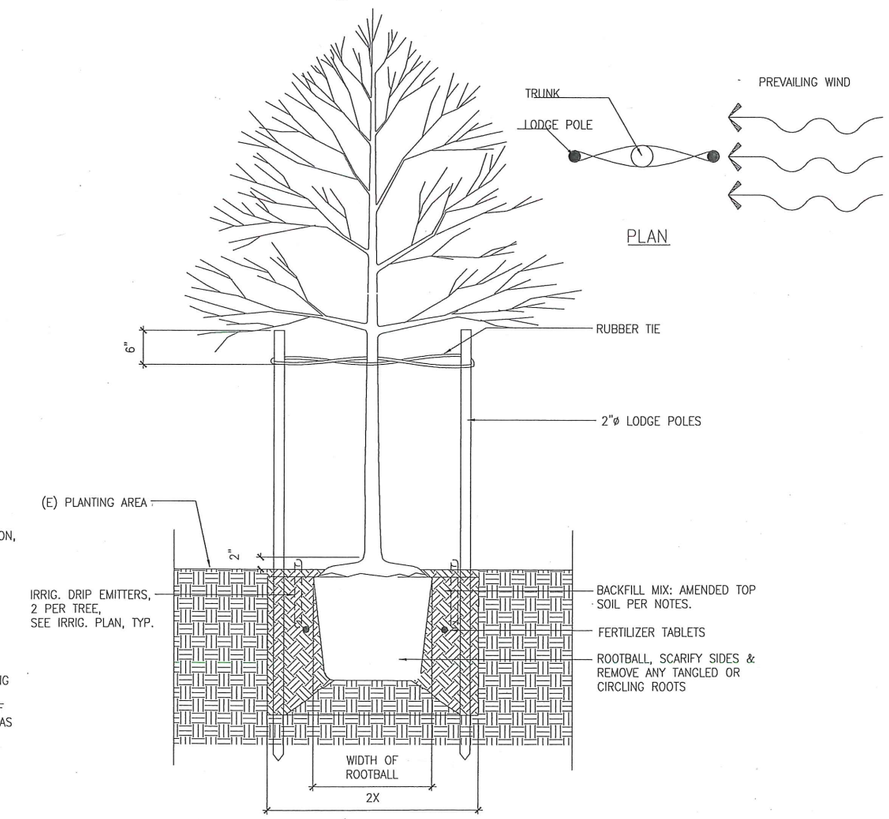


½ O.C. SPACING OF PLANT AT ALL EDGES OF PLANTING AREAS

USE DIAGRAM FOR WHEN PLANTS ARE SPACED EQUAL DISTANTANCE FROM EACH OTHER AS IN ALL SAME GROUND COVER PLANTINGS AND SAME MASSED SHRUB PLANTINGS.

PLANT SPACING DIAGRAM

SCALE: NOT TO SCALE



TREE PLANTING & STAKING

SCALE: NTS

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PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

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1203 LINCOLN AVENUE SAN RAFAEL CA 94549

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SHEET TITLE
PLANTING DETAILS

RESUBMITTAL SET

DATE	PROJECT NUMBER
03.05.2018	164890

SHEET NUMBER
L2.1

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PROJECT INFORMATION

GENERAL

ZONING: HR-1
MULTIFAMILY RESIDENTIAL
(HIGH DENSITY)
1,000 SF LAND PER DWELLING UNIT

MAX. BUILDING HEIGHT: 48'
PROPOSED BUILDING HEIGHT: 47'

MIN. USABLE OUTDOOR AREA: 100 SF
PROPOSED USABLE OUTDOOR AREA: 3,970 SF

AP NUMBERS: 11-184-09, -08

UNITS PROPOSED: 106

BEDS: 114

UNIT SCHEDULE		
UNIT TYPE	COUNT	AREA TOTAL
LEVEL 5		
AL.1	3	2004
AL.S	24	8747
	27	10751
LEVEL 4		
AL.1	2	1388
AL.S	25	9652
	27	11040
LEVEL 3		
LN.S	26	8931
	26	8931
LEVEL 2		
LN.S	26	8969
	26	8969
Grand total	106	39691

PROJECT DIRECTORY

GENERAL

APPLICANT

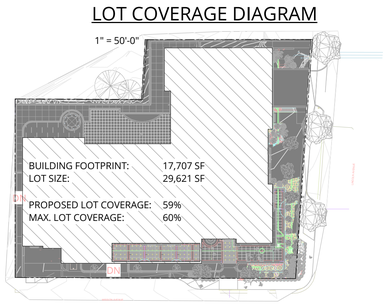
AEGIS SENIOR COMMUNITIES
415 118TH AVE SE
BELLEVUE, WA 98005
CONTACT: WALTER BRAUN
BRYON ZIEGLER
PHONE: (425) 861-9993
EMAIL: walter.braun@aegisliving.com
bryon.ziegler@aegisliving.com

ARCHITECT

ANKROM MOISAN ARCHITECTS
38 NEW DAVIS STREET, SUITE 300
PORTLAND, OR 97209
CONTACT: RYAN MIYAHIRA
LAURIE LINVILLE-GREGSTON
PHONE: (503)245-7100
EMAIL: ryanm@ankrommoisan.com
laurieg@ankrommoisan.com

LOT COVERAGE DIAGRAM

1" = 50'-0"



BUILDING FOOTPRINT: 17,707 SF
LOT SIZE: 29,621 SF

PROPOSED LOT COVERAGE: 59%
MAX. LOT COVERAGE: 60%

DESIGN DESCRIPTION

PROPOSED OCCUPANCY: R2.1
MULTIFAMILY RESIDENTIAL
(HIGH DENSITY)

THE PROPOSED DESIGN IS AN 106 UNIT, FIVE STORY BUILDING WITH SUBTERRANEAN GARAGE. THE LOCATION IS AT THE CORNER OF MISSION AND LINCOLN IN SAN RAFAEL. IT IS WALKING DISTANCE TO DOWNTOWN, THE TRANSIT CENTER, AND FUTURE SMART RAIL STATION. THE FIRST AND SECOND FLOORS OF RESIDENTIAL LIVING, LOCATED ONE LEVEL ABOVE STREET, WILL HOUSE 54 UNITS DEDICATED TO MEMORY CARE RESIDENTS. THE UPPER TWO FLOORS WILL HOUSE 52 UNITS OF ASSISTED LIVING RESIDENTS. THE GROUND FLOOR PORT COCHERE WILL CONTAIN 2 ADA SPACES, 1 AEGIS VAN PARKING SPACE AND LOADING AREA. THERE ARE 2 STREET PULLOUTS PROPOSED FOR FIRE ACCESS AND LOADING. ONE AT MISSION AVE AND ONE AT LINCOLN AVE.

THE SUBTERRANEAN GARAGE WILL CONTAIN 37 SPACES TOTAL (INCLUDING 2 ADA SPACES). THE PARKING TOTAL FOR THE COMPLEX WILL INCLUDE 40 DEDICATED SPACES (INCLUDING THE 4 ADA SPACES). ENTRANCE AND EXIT TO SUBTERRANEAN GARAGE WILL BE LOCATED OFF MISSION. ENTRANCE AND EXIT TO GROUND LEVEL GARAGE WILL BE LOCATED OFF LINCOLN.

PROJECT CONTAINS A MIX OF 1 BEDROOM & STUDIO UNITS. FIRST AND SECOND LEVELS OF RESIDENTIAL (ONE LEVEL UP FROM STREET), WILL BE DESIGNATED FOR MEMORY CARE USE. THE UNITS ON THIS FLOOR WILL HAVE NON OPERATIONAL DOORS TO 'FALSE BALCONY'S'. THERE WILL BE ONE CONTROLLED ACCESS POINT FOR GARDENING PURPOSES ON THIS FLOOR. THE FORTH AND FIFTH RESIDENTIAL FLOORS (UPPER TWO) WILL BE DESIGNATED FOR ASSISTED LIVING AND WILL HAVE EXTERIOR BALCONY ACCESS FROM DESIGNATED UNITS ON THE MISSION AND LINCOLN SIDES.

THE ARCHITECTURAL GOALS OF THE GROUND LEVEL ARE TO CREATE A VERY AESTHETICALLY RICH, INVITING ENVIRONMENT WHILE SIMULTANEOUSLY RELATING TO THE EXISTING HISTORIC ARCHITECTURE OF SAN RAFAEL. FROM THE STREET, A DEDICATED ENTRANCE FACADE, COUPLED WITH MULTI LEVEL, STAGGERED ROOFING ON EXTERIOR BALCONIES AND A FOCAL TOWER, WITH ARCHITECTURALLY SEPARATED BUILDING SECTIONS PROVIDES AN INTERESTING VIEW CONTAINING DESIRED CURB APPEAL. VISUAL DEPTH IS ACHIEVED THROUGH THE BALCONY'S, THE ROOF SEPARATIONS, AND THE BUILDING SEPARATIONS FROM VERTICAL MOVEMENT POINTS. SHADOWS AND DEPTH PREVENT MONOTONOUS WALLS AND BORING PLANES, OR BORING OVERALL MASSING IN GENERAL. THE SITE WILL BE LANDSCAPED TO PROVIDE SCREENING AND NATURAL APPEAL.

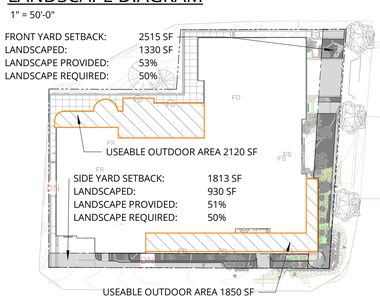
SETBACKS

THE SETBACKS OF THE ORIGINAL APPROVED DESIGN ARE MAINTAINED TO INCLUDE 5' SETBACKS ON THE REAR AND SIDES OF THE FOOTPRINT, AS WELL AS A 10' SETBACK FROM MISSION AND A 15' SETBACK FROM LINCOLN. PROPOSED BUILDING FACADES/ARTICULATIONS EMULATE APPROVED DESIGN.

LANDSCAPE DIAGRAM

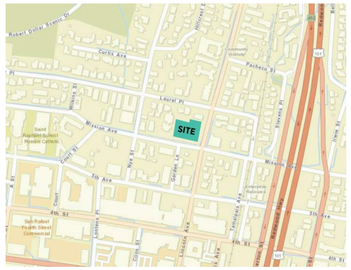
1" = 50'-0"

FRONT YARD SETBACK: 2515 SF
LANDSCAPED: 1330 SF
LANDSCAPE PROVIDED: 53%
LANDSCAPE REQUIRED: 50%



SIDE YARD SETBACK: 1813 SF
LANDSCAPED: 930 SF
LANDSCAPE PROVIDED: 51%
LANDSCAPE REQUIRED: 50%

VICINITY MAP



PROJECT NORTH

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SHEET NUMBER	SHEET NAME
1	TITLE SHEET
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3	MAIN LEVEL FLOOR PLAN
4.1	SECOND FLOOR - RESIDENTIAL PLAN
4.2	THIRD FLOOR PLAN
5.1	FOURTH FLOOR PLAN - FORMERLY L3
6.1	FIFTH FLOOR PLAN - FORMERLY L4
7.1	ROOF PLAN
8.1	EXTERIOR ELEVATIONS
8.2	EXTERIOR ELEVATIONS - DESIGN EVOLUTION
9.1	EXTERIOR ELEVATIONS
9.2	EXTERIOR ELEVATIONS - DESIGN EVOLUTION
10	SECTIONS
11	DETAILS
12	MAIN LEVEL - PLANTING PLAN
13	SECOND FLOOR LANDSCAPE PLAN
15	PLANT MATERIAL SCHEDULE
16	PLANT MATERIAL IMAGERY
17	SITE PLAN - LIGHTING
18	SECOND FLOOR PLAN - LIGHTING PLAN
19	OVERALL ROOF - LIGHTING PLAN

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DEVIATIONS MAY EXIST BETWEEN THESE DOCUMENTS AND DOCUMENTS THAT HAVE BEEN REVIEWED AND APPROVED BY THE CITY OF SAN RAFAEL PLANNING AUTHORITIES.

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38 NORTHWEST DAVIS, SUITE 300
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1505 5TH AVE, SUITE 300
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206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
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REVISION	DATE	REASON FOR ISSUE

TITLE SHEET

PLANNING

DATE
MAR 3, 2021

PROJECT NUMBER
174170

SHEET NUMBER
1

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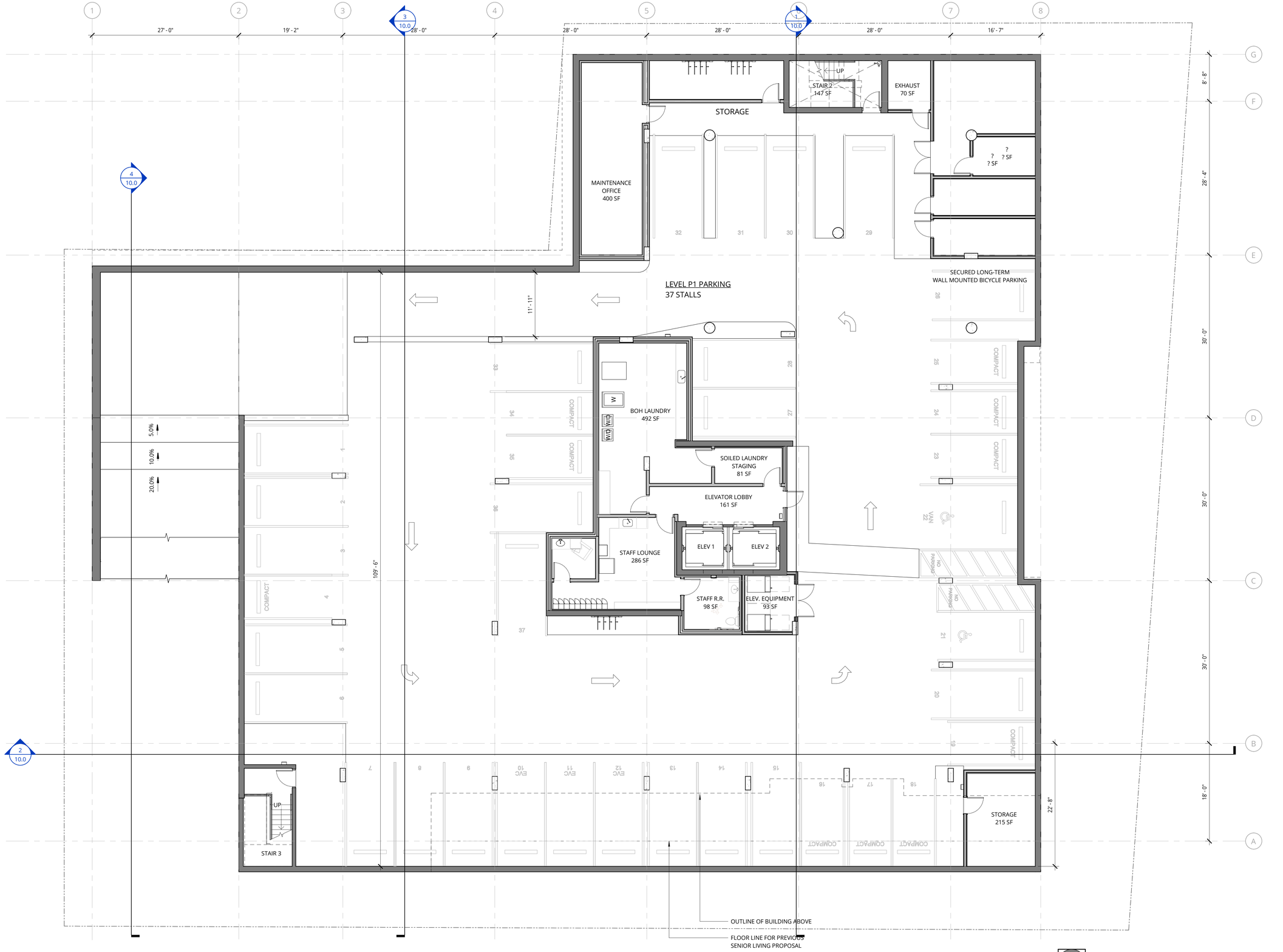

1 LOWER GARAGE PLAN

1/8" = 1'-0"

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LOWER GARAGE PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

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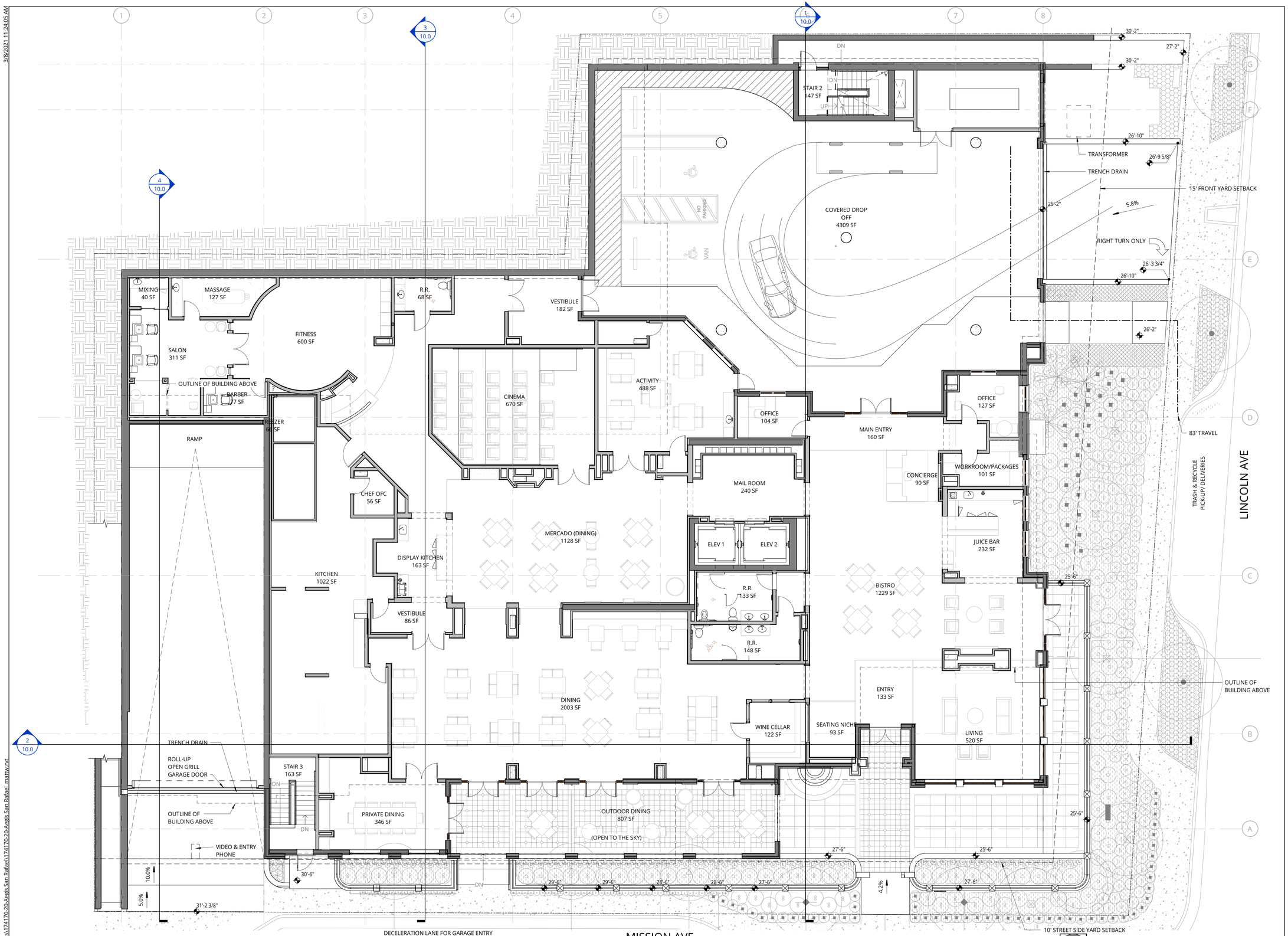

1 MAIN LEVEL FLOOR PLAN

1/8" = 1'-0"

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MAIN LEVEL FLOOR PLAN

PLANNING

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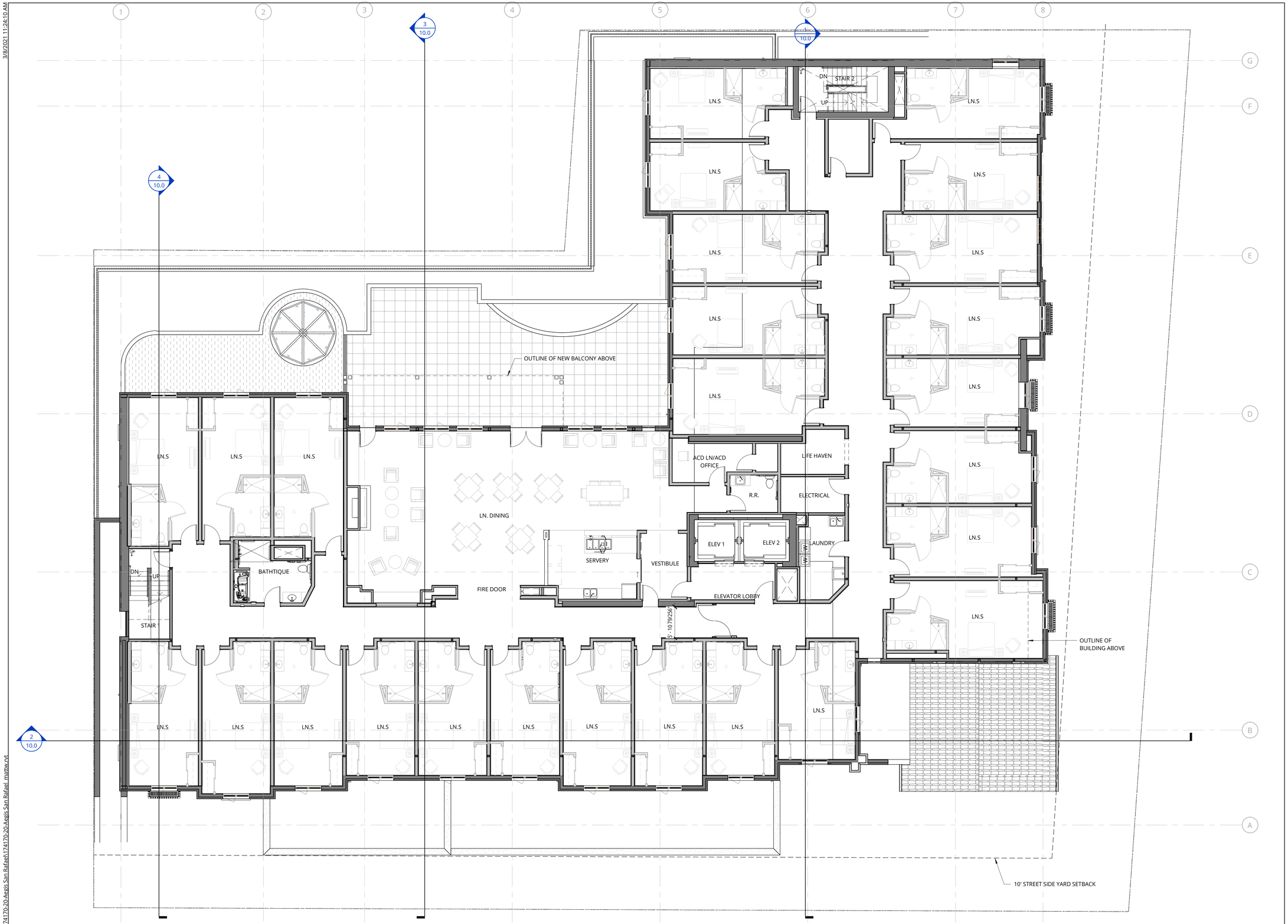
3.1

3/8/2021 11:24:10 AM



1 SECOND FLOOR - RESIDENTIAL PLAN

1/8" = 1'-0"

NORTH

0 4 8 16 32

C:\Revit Projects\174170-20-Aegis San Rafael\174170-20-Aegis San Rafael_maltw.rvt

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REVISION	DATE	REASON FOR ISSUE

SECOND FLOOR - RESIDENTIAL PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER

4.1

3/8/2021 11:24:16 AM

1 L3 FLOOR PLAN
1/8" = 1'-0"

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L3 FLOOR PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER
4.2

3/8/2021 11:24:21 AM

1 L4 FLOOR PLAN

1/8" = 1'-0"

NORTH

0 4 8 16 32

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L4 FLOOR PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER

5.1

3/8/2021 11:24:26 AM

1 L5 FLOOR PLAN

1/8" = 1'-0"

NORTH

0 4 8 16 32

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L5 FLOOR PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER

6.1

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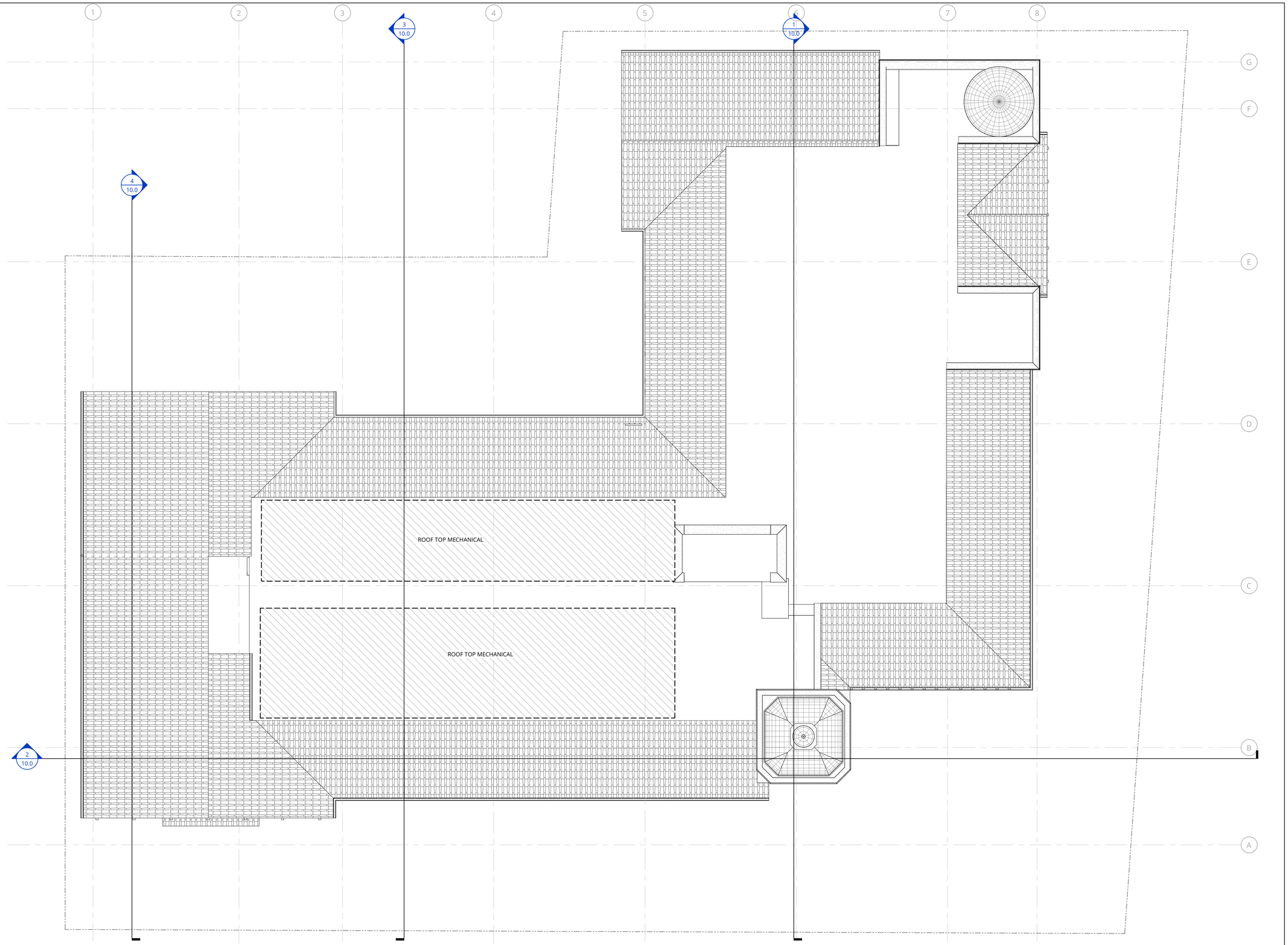

1 ROOF PLAN

1/8" = 1'-0"

NORTH

0 4 8 16 32

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ROOF PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

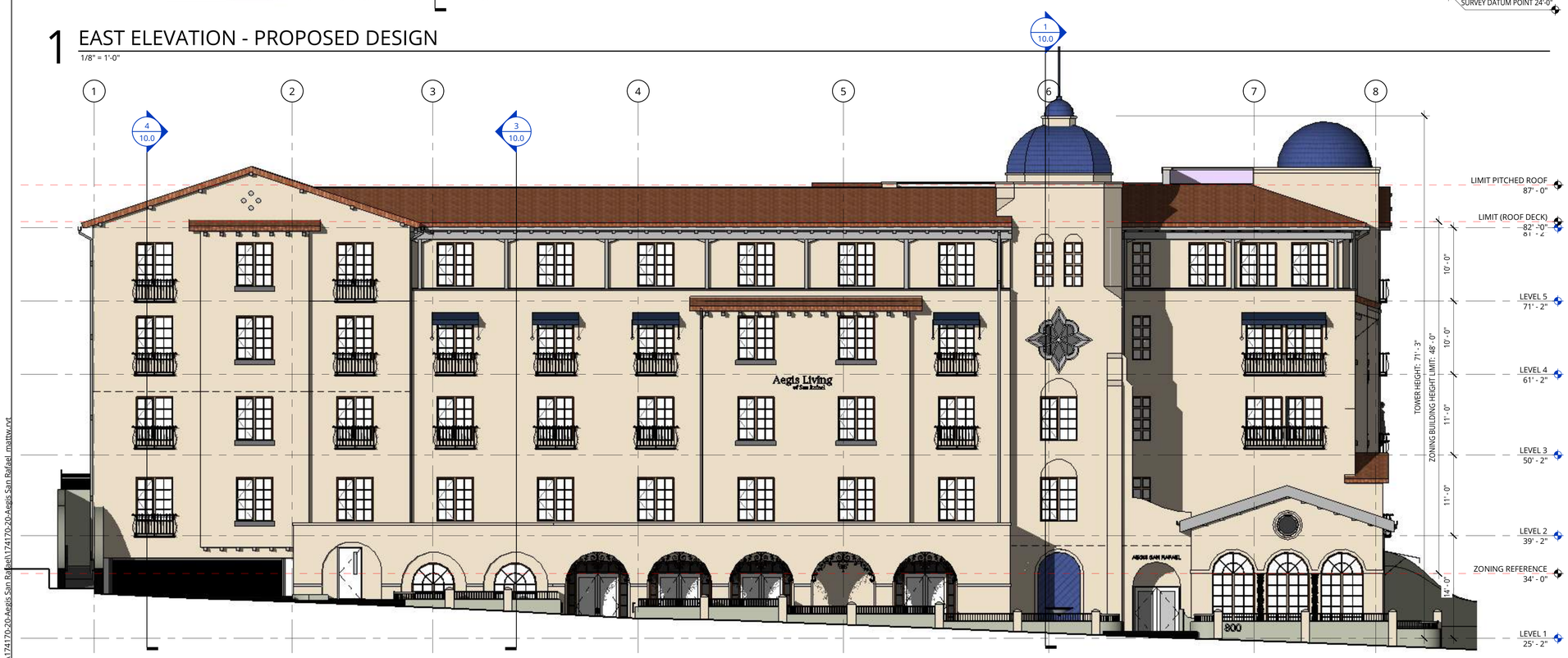
SHEET NUMBER

7.1

3/8/2021 11:25:21 AM

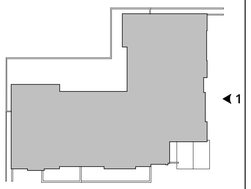
1 EAST ELEVATION - PROPOSED DESIGN

1/8" = 1'-0"



2 SOUTH ELEVATION - PROPOSED DESIGN

1/8" = 1'-0"



KEY MAP

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REVISION	DATE	REASON FOR ISSUE

EXTERIOR ELEVATIONS

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

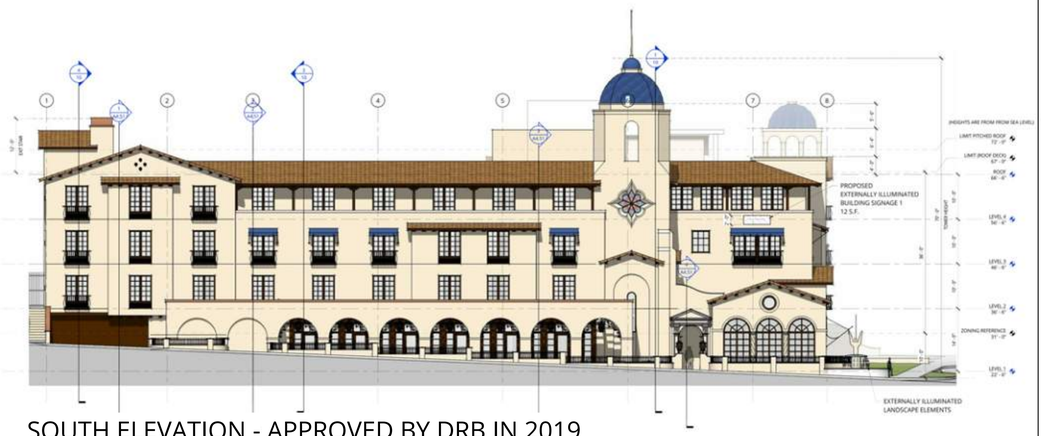
SHEET NUMBER

8.1

3/8/2021 11:25:56 AM

1 EAST ELEVATION - APPROVED BY DRB IN 2019

1/16"=1'-0"



SOUTH ELEVATION - APPROVED BY DRB IN 2019

1/16"=1'-0"

2 EAST ELEVATION - BUILDING PERMITTED IN 2020

1/16"=1'-0"

SOUTH ELEVATION - BUILDING PERMITTED IN 2020

1/16"=1'-0"

3 EAST ELEVATION - PROPOSED DRB DESIGN

1/16" = 1'-0"

SOUTH ELEVATION - PROPOSED DRB DESIGN

1/16" = 1'-0"

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EXTERIOR ELEVATIONS - DESIGN EVOLUTION

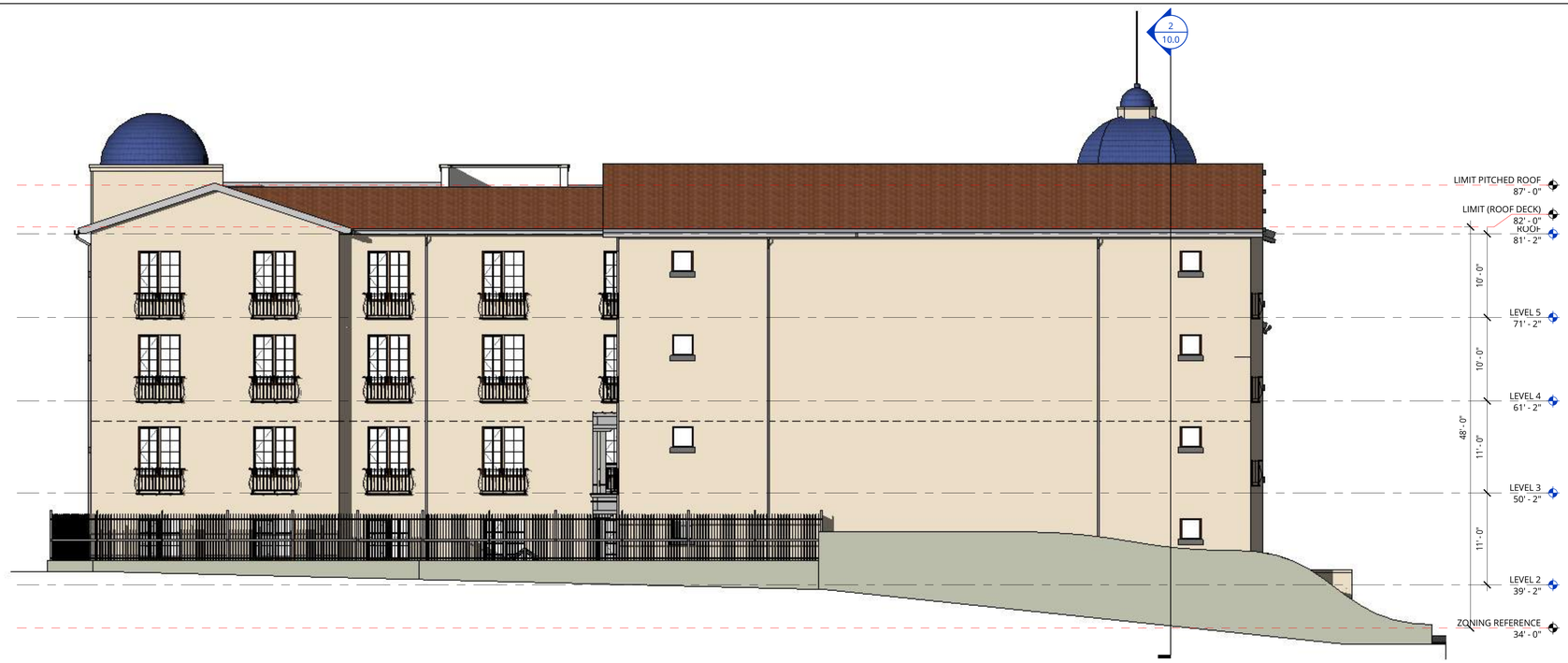
PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER

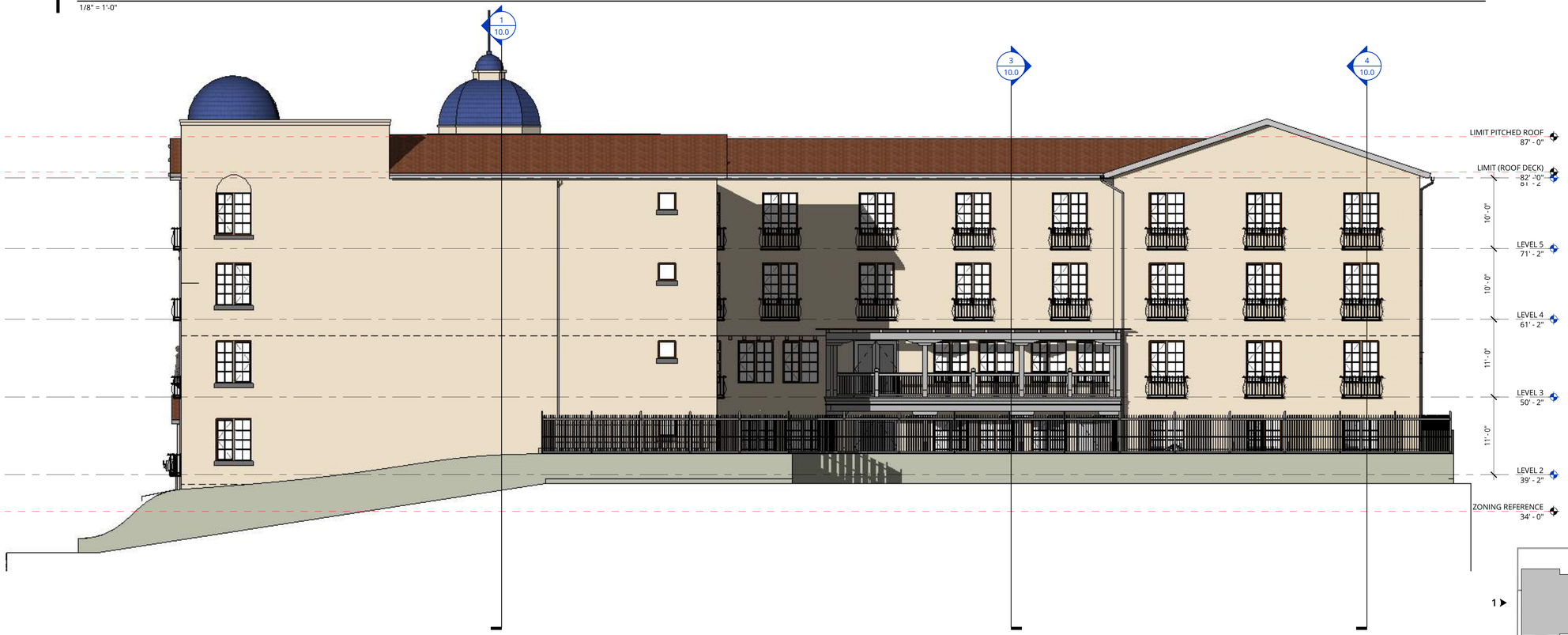
8.2

3/8/2021 11:26:42 AM



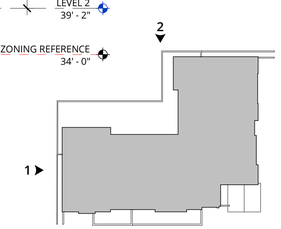
1 WEST ELEVATION - PROPOSED

1/8" = 1'-0"



2 NORTH ELEVATION - PROPOSED

1/8" = 1'-0"



KEY MAP

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REVISION	DATE	REASON FOR ISSUE

EXTERIOR ELEVATIONS

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER
9.1

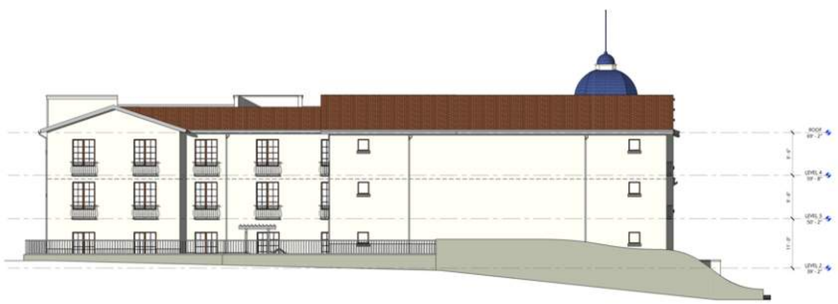
3/8/2021 11:27:13 AM

1 WEST ELEVATION - APPROVED BY DRB IN 2019

1/16"=1'-0"

4 NORTH ELEVATION - APPROVED BY DRB IN 2019

1/16"=1'-0"

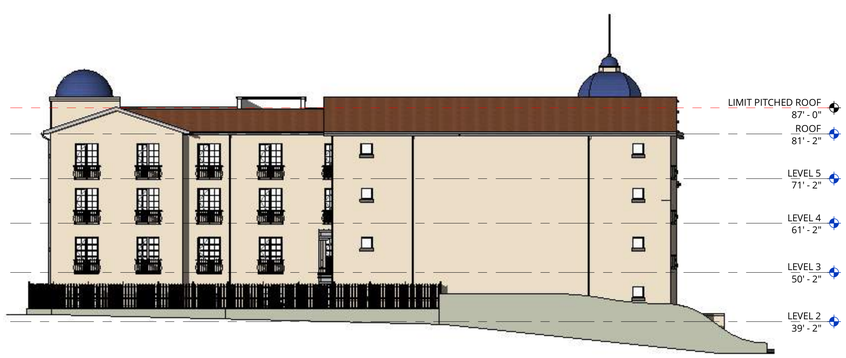


2 WEST ELEVATION - PERMITTED IN 2020

1/16"=1'-0"

5 NORTH ELEVATION - PERMITTED IN 2020

1/16"=1'-0"



3 WEST ELEVATION - PROPOSED DRB DESIGN

1/16" = 1'-0"

6 NORTH ELEVATION - PROPOSED DRB DESIGN

1/16" = 1'-0"

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EXTERIOR ELEVATIONS - DESIGN EVOLUTION

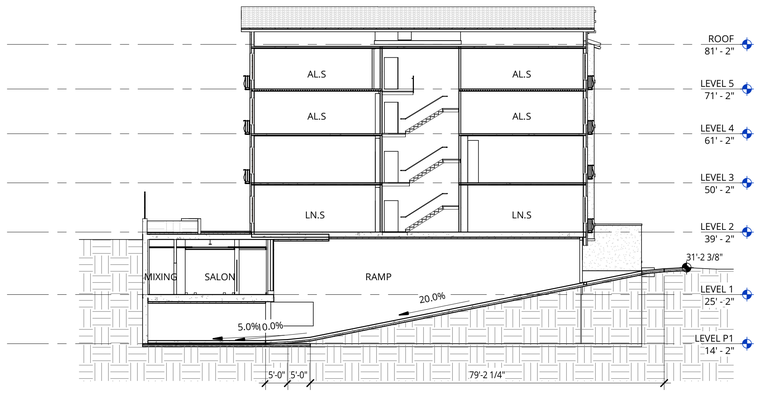
PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

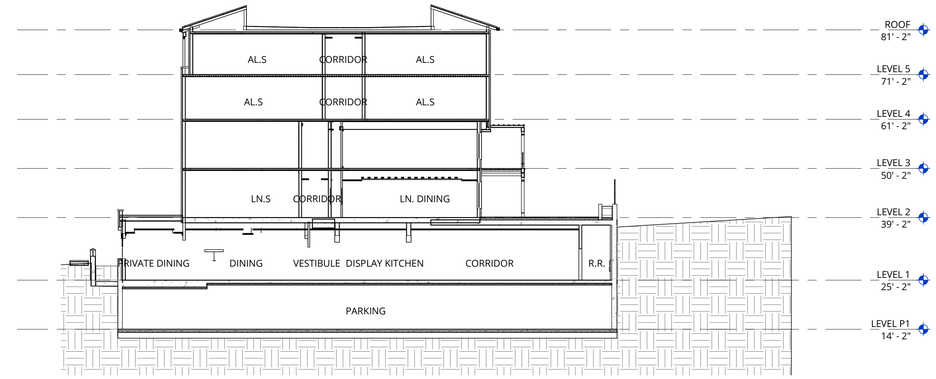
SHEET NUMBER

9.2

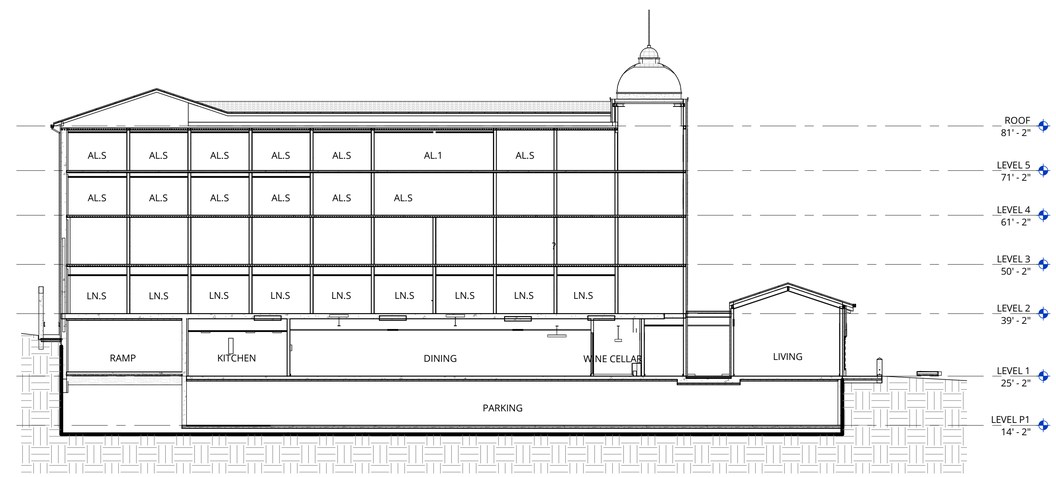
3/8/2021 11:27:22 AM



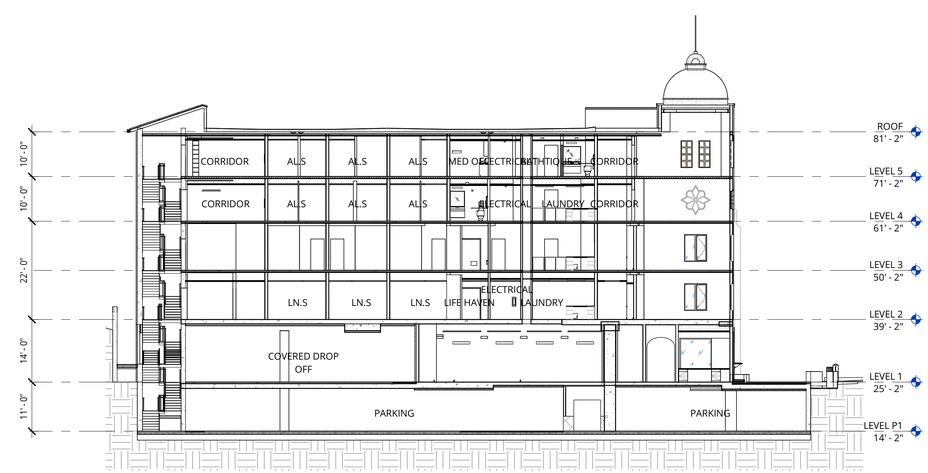
4 BUILDING SECTION AT PARKING RAMP
1/16" = 1'-0"



3 BUILDING SECTION 3
1/16" = 1'-0"



2 BUILDING SECTION 2
1/16" = 1'-0"



1 BUILDING SECTION 1
1/16" = 1'-0"

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REVISION	DATE	REASON FOR ISSUE

SECTIONS

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER
10.0

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3/8/2021 11:27:59 AM

1. TILE ROOF

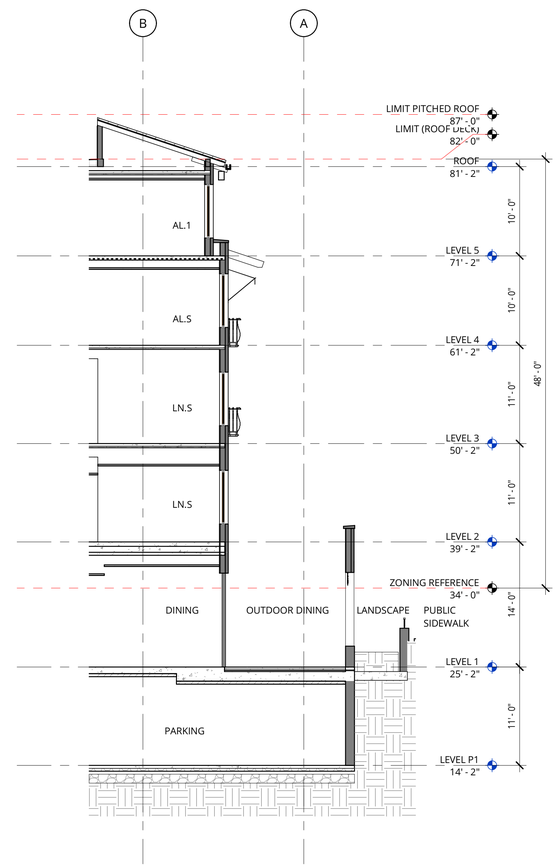
2. BLUE ROOF TILE

3.TIMBER DETAILING

4. WROUGHT IRON

5. STUCCO

6. FABRIC AWNINGS



1 WALL SECTION

1/8" = 1'-0"

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DETAILS

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER

11.0

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PLANT MATERIAL SCHEDULE

ABBREV	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	MATURE SIZE/ PLANT TYPE	WUCOLS RATING
TREES						
ACE APO	ACER SACCHARUM 'APOLLO'	APOLLO MAPLE	36" BOX	PER PLANS	30'/ DECIDUOUS	LOW
MUS BAS	MUSA BASJOO	JAPANESE BANANA	24" BOX	4' O.C.	12'/ HERBACEOUS	MEDIUM
OLE EUR	OLEA EUROPAEA 'SWAN HILL'	FRUITLESS OLIVE - TREE FORM	36" BOX	PER PLANS	25'+ / EVERGREEN	VERY LOW
PHO DAC	PHOENIX DACTYLIFERA	DATE PALM	12' BTH	30' O.C.	30'+ / EVERGREEN	LOW
PIS CHI	PISTACIA CHINENSIS	CHINESE PISTACHE	36" BOX	PER PLANS	30'/ DECIDUOUS	LOW
SHRUBS, GROUNDCOVERS & VINES						
BUX GRE	BUXUS M. VAR JAPONICA 'GREEN BEAUTY'	DWARF BOXWOOD	5 GAL	1'-0"	2'/ EVERGREEN	LOW
CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	1'-8"	12" / EVERGREEN	VERY LOW
DIA REV	DIANELLA REVOLUTA 'LITTLE REV'	LITTLE REV FLAX LILY	1 GAL	1'-6"	18" / EVERGREEN	LOW
GEL SEM	GELSEMIUM SEPERVIRENS 'MARGARITA'	CAROLINA JESSIMINE	1 GAL	PER PLANS	12' + / EVERGREEN	LOW
GER MAC	GERANIUM MACRORRHIZUM	BIG ROOT GERANIUM	1 GAL	1'-6"	8" / SEMI-EVERGREEN	MEDIUM
LAM WHI	LAMIUM MACULATUM 'WHITE NANCY'	WHITE NANCY DEADNETTLE	1 GAL	1'-6"	6" / SEMI-EVERGREEN	MEDIUM
LIR MUS	LIRIOPE MUSCARI	BLUE LILY TURF	1 GAL	1'-0"	12"/ EVERGREEN	MEDIUM
LOM BRE	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	2'-6"	2' / EVERGREEN	LOW
LOM PLA	LOMANDRA LONGIFOLIA 'PLATINUM BEAUTY'	VARIEGATED DWARF MAT RUSH	1 GAL	2'-6"	2' / EVERGREEN	LOW
LON JAP	LONICERA JAPONICA	JAPANESE HONEYSUCKLE	1 GAL	3'-0"	2' / EVERGREEN	MEDIUM
LOR CHI	LOROPETALUM CHINENSE	FRINGE FLOWER	5 GAL	4'-6"	3'-6' / EVERGREEN	LOW
PHI XAN	PHILODENDRON XANADU	PHILODENDRON	5 GAL	3'-0"	2' / EVERGREEN	MEDIUM
RHA CAL	RHAMNUS CALIFORNICA	COFFEEBERRY	5 GAL	PER PLANS	6'-8' / EVERGREEN	LOW
ROS SPP	ROSA SPECIES CARPET ROSE	GROUNDCOVER CARPET ROSE 'PINK'	1 GAL	3'-0"	18" TO 2' / SEMI-EVERGREEN	LOW
STR REG	STRELITZIA REGINAE	BIRD OF PARADISE	5 GAL	4'	4' TO 6' / EVEGREEN	LOW
BIOFILTRATION PLANTS						
ACE CIR	ACER CIRCINATUM	VINE MAPLE	15 GAL	PER PLANS	10'+ / DECIDUOUS	LOW
ACH MIL	ACHILLEA MILLEFOLIUM	COMMON YARROW	1 GAL	2'-0"	1'-6" / PERENNIAL	LOW
CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	1'-6"	12" / EVERGREEN	LOW
CHO TEC	CHONDROPETALUM TECTORUM	SMALL CAPE RUSH	1 GAL	2'-0"	2' / EVERGREEN	LOW
IRI DOU	IRIS DOUGLASIANA	DOUGLAS IRIS	1 GAL	2'-0"	2' / EVERGREEN	LOW
LOB CAR	LOBELIA CARDINALIS	CARDINAL FLOWER	1 GAL	2'-0"	3' / PERENNIAL	LOW
RHA CAL	RHAMNUS CALIFORNICA	COFFEEBERRY	5 GAL	PER PLANS	6'-8' / EVERGREEN	LOW

NOTE: PLANTER MATERIAL IN THE LEVEL 2 INDIVIDUAL PLANTER POTS WILL BE SEASONAL AND CONSIST MAINLY OF FLOWERING PLANTS. THIS PLANTING AREA HAS BEEN ADDED TO THE IRRIGATION AND IS PART OF THE WATER USE CALCS.

PLANT MATERIAL IMAGERY

TREES

ACER SACCHARUM 'APOLLO'

MUSA BASJOO

OLEA EUROPAEA 'SWAN HILL'

PHOENIX DACTYLIFERA

PISTACIA CHINENSIS (Street Trees)

SHRUBS, GROUNDCOVERS & VINES

BUXUS M. VAR JAPONICA 'GREEN BEAUTY'

CAREX DIVULSA

DIANELLA REVOLUTA 'LITTLE REV'

GELSEMIUM SEMPERVIRENS 'MARGARITA'

GERANIUM MACRORRHIZUM

LAMIUM MACULATUM 'WHITE NANCY'

LIRIOPE MUSCARI

LOMANDRA LONGIFOLIA 'BREEZE'

LOMANDRA LONGIFOLIA 'PLATINUM BEAUTY'

LONICERA JAPONICA

LOROPETALUM CHINENSE

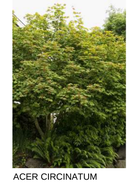
PHILODENDRON XANADU

RHAMNUS CALIFORNICA

ROSA SPECIES

STRELITZIA REGINAE

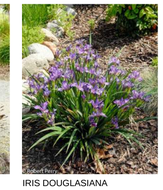
BIOFILTRATION PLANTS


ACER CIRCINATUM

ACHILLEA MILLEFOLIUM

CAREX DIVULSA

CHONDROPETALUM TECTORUM


IRIS DOUGLASIANA

LOBELIA CARDINALIS

RHAMNUS CALIFORNICA

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STUDIO GREEN

Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

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REVISION	DATE	REASON FOR ISSUE

PLANT MATERIAL SCHEDULE & IMAGERY

PLANNING

DATE: MAR 3, 2021

PROJECT NUMBER: 174170

SHEET NUMBER: 16

2/27/2018 2:59:04 PM
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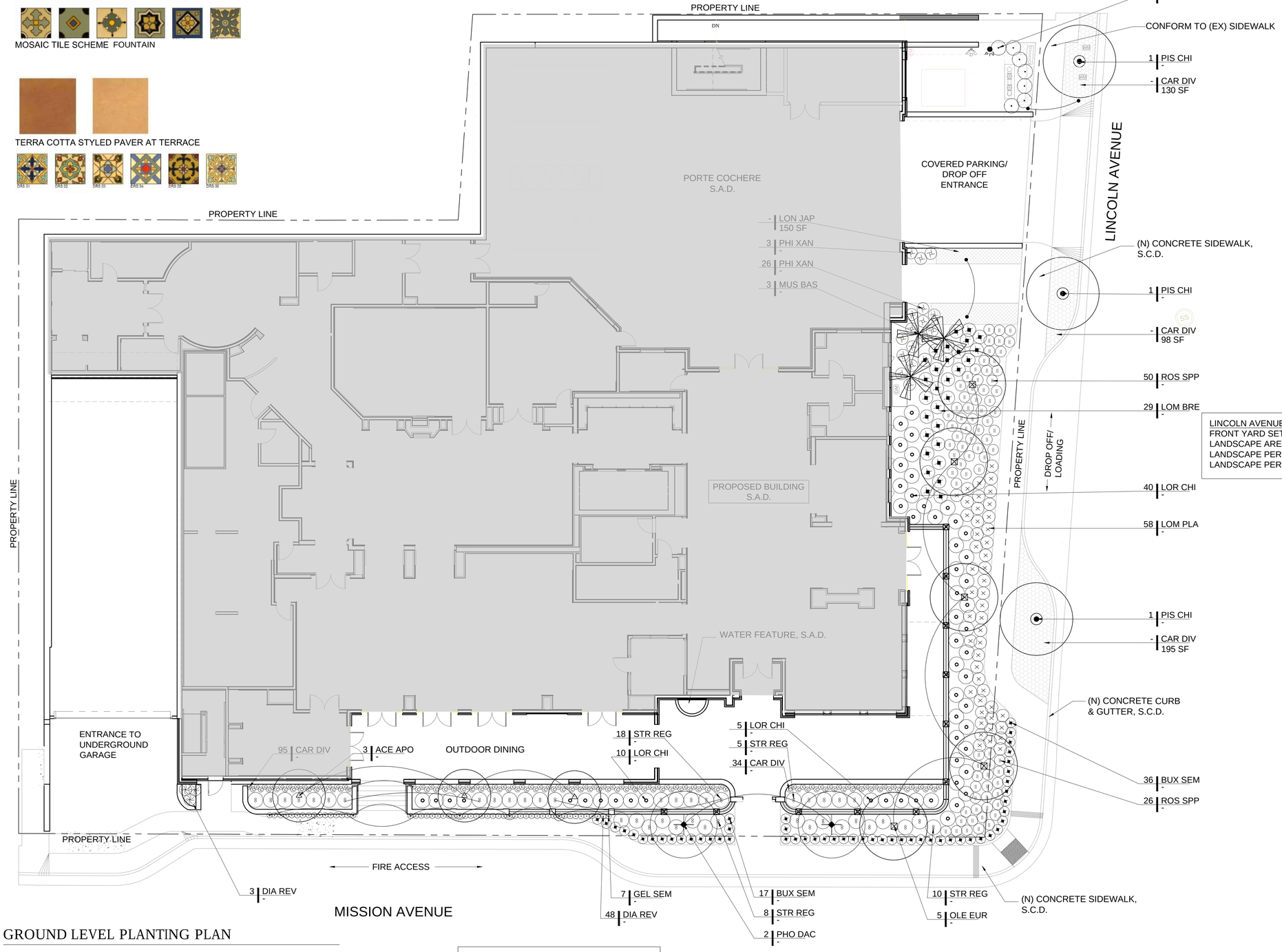
2/27/2018 2:59:04 PM

MOSAIC TILE SCHEME FOUNTAIN

TERRA COTTA STYLED PAVER AT TERRACE



LINCOLN AVENUE LANDSCAPE:
FRONT YARD SETBACK AREA: 2,515 SF
LANDSCAPE AREA: 1,299 SF
LANDSCAPE PERCENTAGE PROVIDED: 52%
LANDSCAPE PERCENTAGE REQUIRED: 50%

MISSION AVENUE LANDSCAPE:
SIDE YARD SETBACK AREA: 1,813 SF
LANDSCAPE AREA: 910 SF
LANDSCAPE PERCENTAGE PROVIDED: 50%
LANDSCAPE PERCENTAGE REQUIRED: 50%

North

NOTE:
1. SEE SHEET 16 FOR PLANT MATERIAL SCHEDULE & IMAGERY.

0 5' 10' 20' 30'
SCALE: 1" = 10'-0"

01 GROUND LEVEL PLANTING PLAN

Ankrom Moisan™

38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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STUDIO GREEN

Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

AEGIS SAN RAFAEL
800 MISSION AVENUE SAN RAFAEL CA 94549

ASC SAN RAFAEL LLC

REVISION	DATE	REASON FOR ISSUE

GROUND LEVEL
PLANTING PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER
12

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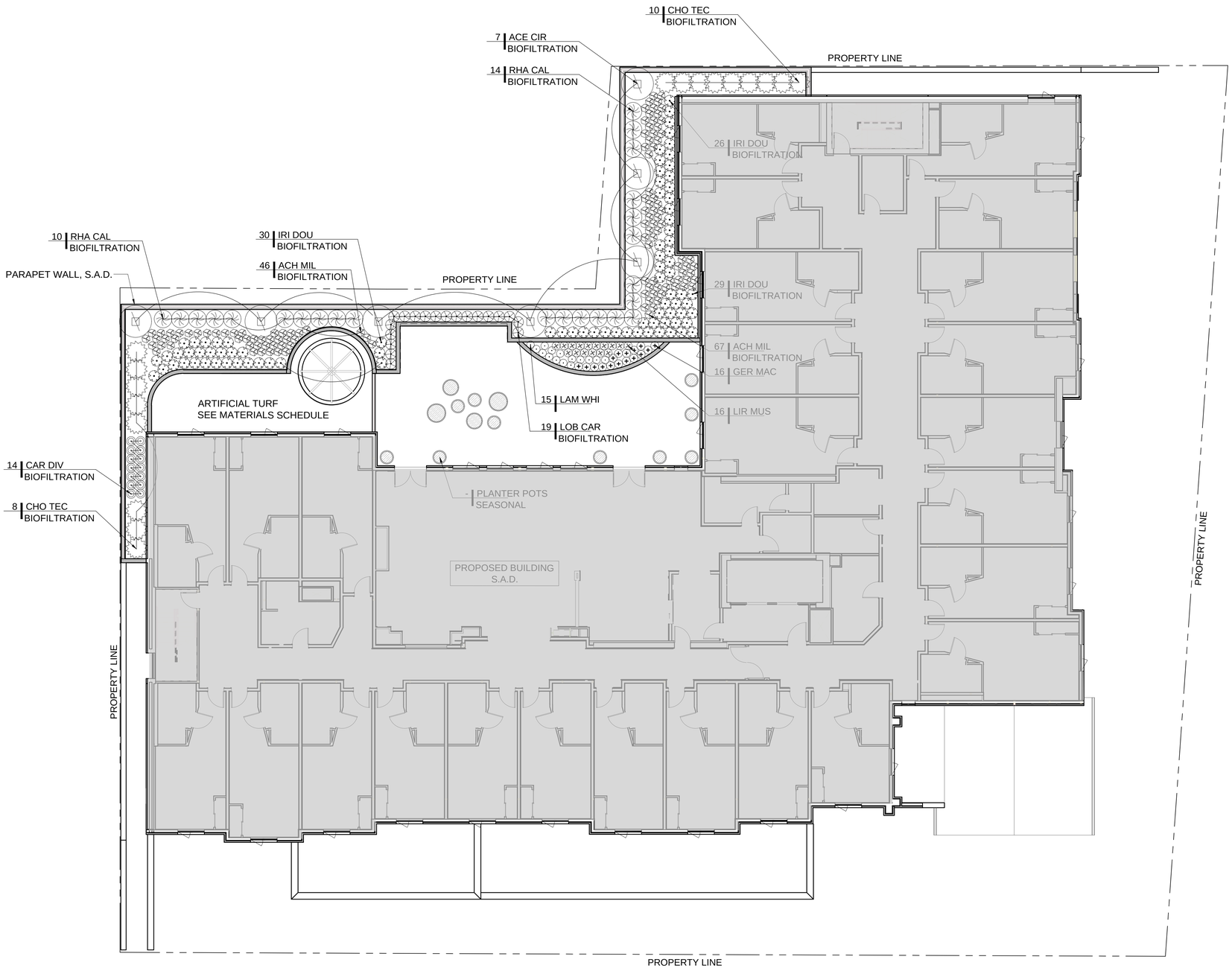
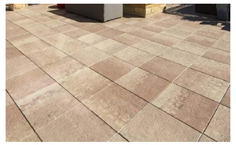


01 LEVEL 2 PLANTING PLAN



PEDESTAL PAVING SYSTEM-
NEUTRAL COLORS TO COMPLIMENT
THE MISSION STYLE OF THE
ARCHITECTURE

WOOD TRELLIS WITH BRONZE HARDWARE

NOTE:
1. SEE SHEET 16 FOR PLANT MATERIAL SCHEDULE & IMAGERY.

North

0 5' 10' 20' 30'
SCALE: 1" = 10'-0"

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PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

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800 MISSION AVENUE SAN RAFAEL CA 94549

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REVISION	DATE	REASON FOR ISSUE

LEVEL 2
PLANTING PLAN

PLANNING

DATE	PROJECT NUMBER
MAR 3, 2021	174170

SHEET NUMBER
13

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PLANT MATERIAL SCHEDULE - AEGIS LIVING

ABBREV	BOTANICAL	COMMON NAME	SIZE	SPACING	MATURE SIZE/ PLANT TYPE	WUCOLS RATING
TREES						
CAR BET	CARPINUS BETULUS 'FASTIGIATA'	AMERICAN HORNBEAM	24" BOX		"BLEACHED"/DECIDUOUD	MEDIUM
MUS BAS	MUSA BASJOO	JAPANESE BANANA	25 GAL	4' O.C.	12'/ HERBACEOUS	MEDIUM
OLE EUR	OLEA EUROPAEA 'SWAN HILL'	SWAN HILL OLIVE TREE	36" BOX		15'+/EVERGREEN	LOW
PHO DAC	PHOENIX DACTYLIFERA	DATE PALM	10' BROWN TRUNK	30' O.C.	30'+ /EVERGREEN	MEDIUM
PIS CHI	PISTACIA CHINENSIS	CHINESE PISTACHE	36" BOX	PER PLANS	30'/ DECIDUOUS	LOW
SHRUBS & GRASSES						
ALS SPP.	ALSTROEMERIA SPECIES	PERUVIAN LILY	1 GAL	1'		
ANG SPP.	ANIGOZANTHOS SPECIES	KANGAROO PAWS	1 GAL	2'-0"		
AST SPP.	ASTER SPECIES	ASTER	1 GAL	1'-0"		
BUX SEM	BUXUS SEMPERVIRENS 'SUFFRUTICOSA'	DWARF BOXWOOD	1 GAL	1'-0"	2'/ EVERGREEN	MEDIUM
BUX TOP	BUXUS SEMPERVIRENS 'TOPIARY'	TOPAIRY BOXWOOD	15 GAL +	-		
CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	1'-8"	12"/ EVERGREEN	VERY LOW
DIA REV	DIANELLA REVOLUTA 'LITTLE REV'	LITTLE REV FLAX LILY	1 GAL	1'-6"	18" / EVERGREEN	LOW
ERY SPP.	ERYSIMUM 'BOWLES'S MAUVE'	WALLFLOWER	1 GAL	1'-6"		
IRI SPP.	IRIS SPECIES	BEARDED IRIS	1 GAL	1'-6"		
LIR GIG	LIRIOPE GIGANTEA	GIANT LILY TURF	1 GAL	1'-6"	18"/ EVERGREEN	MEDIUM
LIR MUS	LIRIOPE MUSCARI	BLUE LILY TURF	1 GAL	1'-0"	12"/ EVERGREEN	MEDIUM
LOM LON	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	2'-6"	2' / EVERGREEN	LOW
LON JAP	LONICERA JAPONICA	JAPANESE HONEYSUCKLE	1 GAL	3'-0"	2' / EVERGREEN	MEDIUM
LOR CHI	LOROPETALUM CHINENSE	FRINGE FLOWER	5 GAL	4'-6"	3'-6' / EVERGREEN	LOW
LYC COR	LYCHNIS CORONARIA	ROSE CAMPION	1 GAL	1'-0"		
NIC SPP.	NICOTIANA SPECIES	TOBACCO PLANT	1 GAL	1'-0"		
PAP BOL	PAPAVER ORIENTALE 'BOLERO'	ORIENTAL POPPY	1 GAL	1'-0"		
PAP BUR	PAPAVER ORIENTALE 'BURNING HAERT'	ORIENTAL POPPY	1 GAL	1'-0"		
PHI XAN	PHILODENDRON XANADU	PHILODENDRON	1 GAL	3'-0"	2' / EVERGREEN	MEDIUM
ROS SPP	ROSA SPECIES	GROUNDCOVER CARPET ROSE 'PINK'	1 GAL	3'-0"	18" TO 2' / SEMI-EVERGREEN	MEDIUM
STR REG	STRELITZIA REGINAE	BIRD OF PARADISE	5 GAL	4'	4' TO 6' / EVEGREEN	MEDIUM
TEU LUC	TEUCRIUM X LUCIDRYS	GERMANDER	1 GAL	1'		
VINES						
GEL SEM	GELSEMIUM SEMPERVIRENS 'MARGARITA'	HARDY CAROLINA JASMINE	1 GAL	4'-0	6'-8' TRAILING/EVERGREEN	MEDIUM

BIO-FILTRATION PLANT SCHEDULE - AEGIS LIVING

ABBREV	BOTANICAL	COMMON NAME	SIZE	SPACING	MATURE SIZE/ PLANT TYPE	WUCOLS RATING
BIO-FILTRATION						
ACE CIR	ACER CIRCINATUM	VINE MAPLE	5 GAL	-	DECIDUOUS	MEDIUM
ACH MIL	ACHILLEA MILLEFOLIUM	COMMON YARROW	1 GAL	1'-0"	PERENNIAL	MEDIUM
CHO TEC	CHONDROPETALUM TECTORUM	SMALL CAPE RUSH	1 GAL	2'-0"	2' / EVERGREEN	LOW
CAR DIV	CAREX DIVULSA	BERKELEY SEDGE	1 GAL	1'-6"	EVERGREEN	LOW
FRA CHI	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	1 GAL	1'	EVERGREEN PERENNIAL	MEDIUM
IRI CAN	IRIS DOUGLASIANA 'CANYON SNOW'	DOUGLAS IRIS	1 GAL	1'-0"	PERENNIAL	MEDIUM
IRI DOU	IRIS DOUGLASIANA	DOUGLAS IRIS	1 GAL	1'	PERENNIAL	MEDIUM
LOB CAR	LOBELIA CARDINALIS	CARDINAL FLOWER	1 GAL	1'-0"		MED
RHA CAL	RHAMNUS CALIFORNICA 'EVE CASE'	COFFEEBERRY	5 GAL	4'-0"	EVERGREEN	LOW
ROS CAL	ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1 GAL	1'	DECIDUOUS	MEDIUM

*PLANT LIST PER THE MARIN COUNTY STORMWATER POLLUTION PREVENTION PROGRAM , BIORETENTION FACILITY PLANT MATRIX, JUNE,2014

TYPICAL SEASONAL ANNUALS & PERENNIALS @ L2 & ROOF DECK PLANTERS

ABBREV	BOTANICAL	COMMON NAME	SIZE	SPACING	MATURE SIZE/ PLANT TYPE	WUCOLS RATING
ALS SPP.	ALSTROEMERIA SPECIES	PERUVIAN LILY	1 GAL			
BAC SPP.	BACOPA SPECIES	BACOPA	1 GAL			
DIG SPP.	DIGITALIS SPECIES	COMMON FOXGLOVE	1 GAL			
LOB SPP.	LOBELIA SPECIES	LOBELIA	1 GAL			
PAP BOL	PAPAVER ORIENTALE 'BOLERO'	ORIENTAL POPPY	1 GAL			
PAP BUR	PAPAVER ORIENTALE 'BURNING HEART'	ORIENTAL POPPY	1 GAL			
PRI SPP.	PRIMULA SPECIES	PRIMROSE	1 GAL			
VIO SPP.	VOILA SPECIES	VIOLA	1 GAL			

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38 NORTHWEST DAVIS, SUITE 300
PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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STUDIO GREEN

Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

AEGIS SAN RAFAEL
800 MISSION AVENUE SAN RAFAEL CA 94549

ASC SAN RAFAEL LLC

REVISION	DATE	REASON FOR ISSUE
	09.17.19	LANDSCAPE LIGHTING

PLANT MATERIAL SCHEDULE

SHEET TITLE

PLANNING

DATE 05.30.2018

PROJECT NUMBER 164890

SHEET NUMBER 15

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PLANT CHARACTER IMAGERY

TREES & PALMS

CARPINUS BETULUS 'FASTIGIATA'

MUSA BASJOO

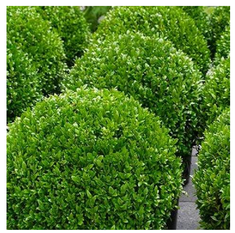
PHOENIX DACTYLIFERA

PISTACIA CHINENSIS
(STREET TREE ALONG LINCOLN)

OLEA EUROPAEA

SHRUBS & GROUNDCOVER

BUXUS SEMPERVIRENS 'SUFFRUTICOSA'


BUXUS SEMPERVIRENS 'TOPIARY'

CAREX DIVULSA

DIANELLA REVOLUTA
'LITTLE REV'

LIRIOPE GIGANTEA

LIRIOPE MUSCARI

LOMANDRA LONGIFOLIA
'BREEZE'

LONICERA JAPONICA

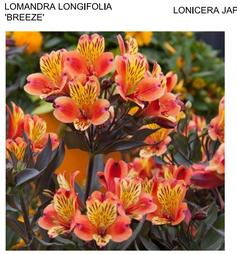
LOROPETALUM CHINENSE

PHILODENDRON XANADU

ROSA SPECIES

STRELITZIA REGINAE

TEUCRIUM X LUCIDRYS


ALSTROEMERIA SPECIES

ANIGOZANTHOS SPECIES

ASTER SPECIES

ERYSIMUM 'BOWLES'S MAUVE'

IRIS SPECIES

LYCHNIS CORONARIA

NICOTIANA SPECIES

PAPAVER ORIENTALE 'BOLERO'

PAPAVER ORIENTALE 'BURNING HAERT'

VINES

GELSEMIUM SEMPERVIRENS
'MARGARITA'

BIO-FILTRATION PLANT MATERIAL

ACER CIRCINATUM

ACHILLEA MILLEFOLIUM

CHONDROPETALUM TECTORUM

CAREX DIVULSA

FRAGARIA CHILOENSIS

IRIS DOUGLASIANA 'CANYON SNOW'

IRIS DOUGLASIANA

LOBELIA CARDINALIS

RHAMNUS CALIFORNICA 'EVE CASE'

ROSA CALIFORNICA

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503.245.7100

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SEATTLE, WA 98101
206.576.1600

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SAN FRANCISCO, CA 94103
415.252.7063

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Landscape Architecture
232 Sir Francis Drake Blvd.
San Anselmo, CA 94960
Phone: (415) 721-0905
Fax: (415) 721-0910
Email: info@studiogreen.com
www.studiogreen.com

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REVISION	DATE	REASON FOR ISSUE
	09.17.19	LANDSCAPE LIGHTING

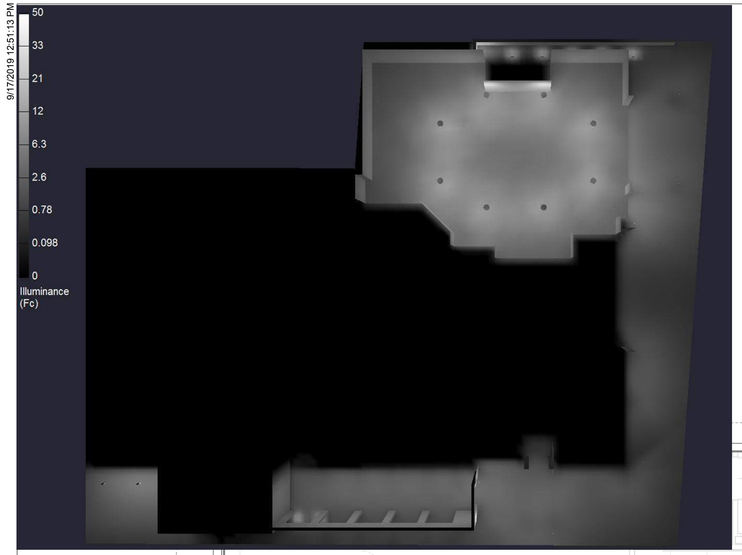
PLANT MATERIAL IMAGERY

SHEET TITLE

PLANNING

DATE	PROJECT NUMBER
05.30.2018	164890

SHEET NUMBER
16



1 SITE PLAN - LIGHTING

SCALE: 1" = 10'-0"

SP1, SP2
30" AND 19" TALL DECORATIVE POLE-TOP LUMINAIRES WITH LED CANDELABRA BASE LAMPS IN WARM WHITE COLOR TEMPERATURE(2700k) AT MAIN ENTRY AND DRIVE ENTRY TO COVERED PARKING

SS1
RECESSED STEPLIGHT AT PATHWAYS

SW1, SW2
19" AND 30" TALL DECORATIVE WALL SCONCES WITH LED CANDELABRA BASE LAMPS IN WARM WHITE COLOR TEMPERATURE(2700k)

SF1
CEILING MOUNTED LIGHTING FOR COVERED PARKING AREA

SW3
WALL PACK FOR SECURITY AND EGRESS LIGHTING AT BUILDING EXITS

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SEATTLE, WA 98101
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SAN FRANCISCO, CA 94103
415.252.7063

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GLUMAC
engineers for a sustainable future
1601 Fifth Ave., Suite 2210
Seattle, WA 98101
www.glumac.com
T. 206.262.1010 F. 206.262.9865
Project Manager: Adam Leingang
Job. No.: 05.19.00126

AEGIS SAN RAFAEL
800 MISSION AVENUE SAN RAFAEL CA 94901

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REVISION	DATE	REASON FOR ISSUE
	09.17.19	LANDSCAPE LIGHTING

SITE PLAN - LIGHTING

PLANNING

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
17

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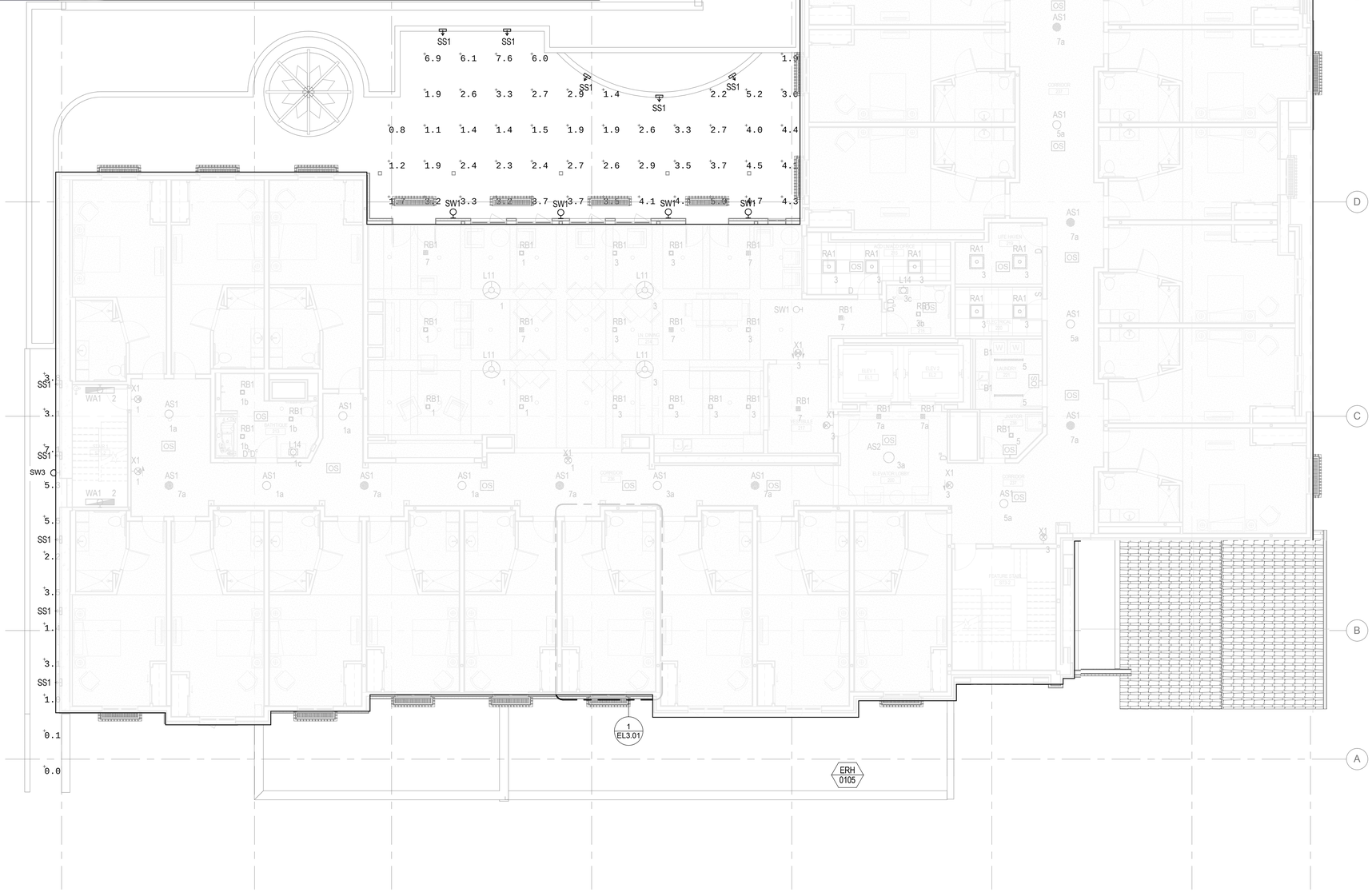

SW4
TRELLIS-MOUNT DOWNLGIHT SCONCE

SS1
RECESSED STEPLIGHT

SW1
19" TALL DECORATIVE WALL SCONCES WITH LED CANDELABRA BASE LAMPS IN WARM WHITE COLOR TEMPERATURE(2700k)

1 **LEVEL 2 - FLOOR PLAN - LIGHTING**
SCALE: 1/8" = 1'-0"

PROJECT NORTH

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PORTLAND, OR 97209
503.245.7100

1505 5TH AVE, SUITE 300
SEATTLE, WA 98101
206.576.1600

1014 HOWARD STREET
SAN FRANCISCO, CA 94103
415.252.7063

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REVISION	DATE	REASON FOR ISSUE
	09.17.19	LANDSCAPE LIGHTING

LEVEL 2 FLOOR PLAN - LIGHTING PLAN

PLANNING

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
18

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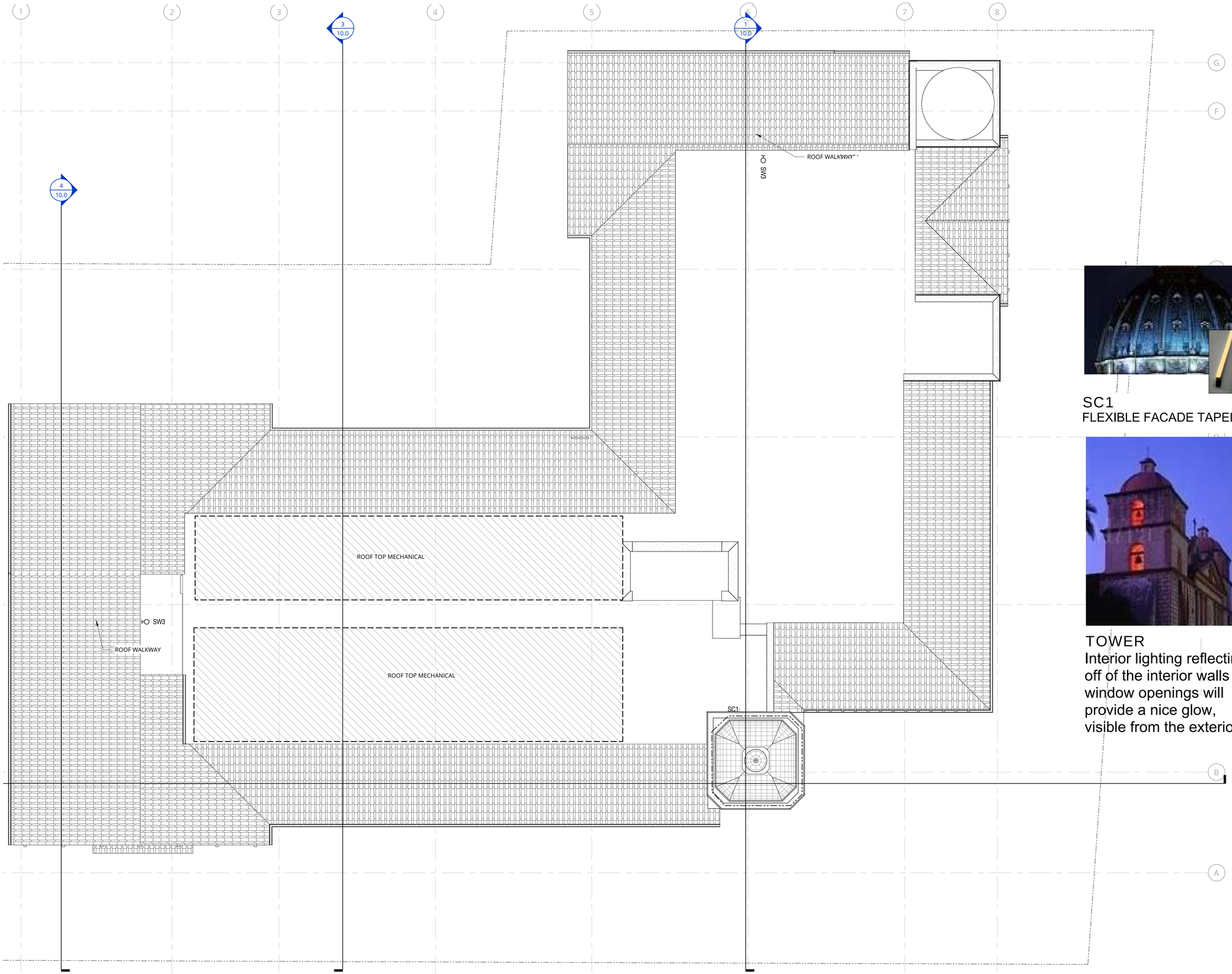

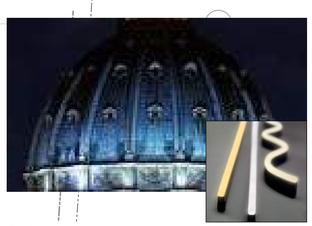

SC1
FLEXIBLE FACADE TAPELIGHT

TOWER
Interior lighting reflecting off of the interior walls and window openings will provide a nice glow, visible from the exterior.

PROJECT NORTH

1 ROOF - FLOOR PLAN - LIGHTING

SCALE: 1/8" = 1'-0"

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PORTLAND, OR 97209
503.245.7100

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SEATTLE, WA 98101
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REVISION	DATE	REASON FOR ISSUE
	09.17.19	LANDSCAPE LIGHTING

OVERALL ROOF PLAN - LIGHTING PLAN

PLANNING

DATE	PROJECT NUMBER
05.30.2018	174170

SHEET NUMBER
19