



## Planning Commission Report

**Meeting Date:** July 14, 2016

**Subject:** **9206 and 9212 Olympic Boulevard  
New Three-Story Commercial Building**  
Request for a Conditional Use Permit and Minor Accommodation to allow the construction of a 3-story building on the property located at 9206 and 9212 Olympic Boulevard. *(Continued from June 23, 2016 meeting)*

**Project Applicant:** Afshin Etebar, Eteo Homes

**Recommendation:** That the Planning Commission:  

1. Conduct a public hearing and receive testimony on the project;
2. Adopt a resolution approving the Conditional Use Permit and Minor Accommodation

### REPORT SUMMARY

The proposed project involves construction of a 3-story, 20,244 square foot commercial building on the property located at 9206 and 9212 Olympic Boulevard. The property is currently occupied by a surface parking lot associated with a rental car company. The proposed project requires a Conditional Use Permit (CUP) in order to allow the building, which is located in the C-3T-2 transition zone, to exceed 1.33:1 (1.69:1 is proposed) floor area ratio<sup>1</sup>. The project applicant is also seeking a Minor Accommodation to allow additional openings in the perimeter wall located on the rear property line adjacent to the alley that abuts residential uses to the south. The project would contain three retail/restaurant spaces on the ground floor (plus clerestory), two stories of office space above the ground floor, and 58 parking spaces located in four subterranean levels accessed from the alley to the rear of the property.

The Planning Commission opened the Public Hearing for this project on April 28, 2016. During this meeting staff presented the staff report and the applicant team elaborated on the project. The public and the Planning Commission provided comments regarding the project and the applicant requested time to address the comments raised. The Public Hearing was continued to the June 9, 2016 Planning Commission meeting. At the June 9 meeting staff requested that the project be continued to the June 23, 2016 meeting in order to provide additional time to review

<sup>1</sup> Calculated prior to the alley dedication of 2.5' to the City of Beverly Hills pursuant to the Beverly Hills Municipal Code

**Attachment(s):**

- A. Required Findings
- B. Draft Resolution
- C. Shade and Shadow Study
- D. Truck Specifications Sheet
- E. Categorical Exemption
- F. Public Comments
- G. Project Plans (provided under separate cover)
- H. Comparison of Originally Proposed Project and Currently Proposed Project

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and analyze the revised project. At the June 23 meeting the applicant presented a revised project that included a 35' tall three-story building with a 9' tall clerestory and 76 parking spaces. The revised project had an FAR of 1.84:1. Public comments were received and the Planning Commission discussed the project and requested that the applicant revise the project back to the originally proposed 1.69:1 FAR, reduce the height of the clerestory, and increase the setbacks from the rear property line. This report details changes that have been made to the project since the June 23, 2016 meeting; outlines the findings that need to be made in order to issue the CUP and Minor Accommodation; and analyzes key project issues including the proposed use of the property in relation to the adjacent residential uses, traffic, parking, and loading. Based on analysis contained in this report, the proposed project is not expected to result in any significantly adverse impacts, and the recommendation in this report is for approval of the project.

**APPLICATION INFORMATION**

**File Date** 11/3/2014  
**Application Complete** 4/5/2016  
**Subdivision Deadline** N/A  
**CEQA Deadline** 60 days from CEQA determination  
**CEQA Determination** Class 32 Categorical Exemption for in-fill development projects  
**Permit Streamlining** Take action on project within 60 days of CEQA determination

**Applicant(s)** Afshin Etebar, EHI-9222, LLC/Etco Homes  
**Owner(s)** EHI-9222, LLC/Etco Homes  
**Representative(s)** N/A  
**Prior Project Previews** 4/15/15: Architectural Commission Preview  
**Prior PC Action** N/A  
**Prior Council Action** N/A  
**CC Ad-Hoc Committee** N/A  
**CC/PC Liaison** N/A  
**Other** Applicant held public meeting on project on February 23, 2015 at the Roxbury Community Center to introduce the project to the community and invite feedback.

**PROPERTY AND NEIGHBORHOOD SETTING**

**Property Information**

**Address** 9212 and 9206 Olympic Boulevard  
**Assessor's Parcel No.** 4332001001 and 4332001002  
**Zoning District** C-3T-2  
**General Plan** Commercial  
**Existing Land Use(s)** Vacant – used as surface parking lot for car rental facility  
**Lot Dimensions & Area** 120 feet by 100 feet (each lot is 50 by 120 feet)  
**Year Built** N/A  
**Historic Resource** N/A  
**Protected Trees/Grove** None



**Adjacent Zoning and Land Uses**

|                                 |   |
|---------------------------------|---|
| <b>North (across Olympic)</b>   | C-3T-2 – Commercial (one story commercial)                                      |
| <b>East</b>                     | C-3T-2 – Commercial (two story structure)                                       |
| <b>South (across 15' alley)</b> | R-4 – Multiple Family Residential (two- and three-story multi-family buildings) |
| <b>West</b>                     | C-3T-2 – Commercial (one-story structure and parking lot)                       |

**Circulation and Parking**

|                           |  |
|---------------------------|--|
| <b>Adjacent Street(s)</b> | Olympic Boulevard, Palm Drive, and Maple Drive   |
| <b>Traffic Volume</b>     | Average Daily Trips on Olympic Boulevard: Approx. 37,950 (combined east- and westbound)<br>Average Daily Trips on Palm Drive: Approx. 1,385 (combined north- and southbound)<br>Average Daily Trips on Maple Drive: Approx. 1,480 (combined north- and southbound) |

|                                 |   |
|---------------------------------|---|
| <b>Adjacent Alleys</b>          | Two-way, east-west alley at rear (south) of property, 15 feet wide. |
| <b>Parkways &amp; Sidewalks</b> | Olympic Boulevard – 15' from face of curb to property line          |

**Neighborhood Character**

The project site is located along Olympic Boulevard. The neighborhood surrounding the project site consists of a mix of low rise commercial buildings, surface parking lots, and multiple family residential buildings. The project site consists of two existing lots (that will be tied by covenant) located on the south side of the middle of the block along Olympic Boulevard between Palm Drive and Maple Drive. To the north, west and east of the project site, there are other commercially zoned properties including various low-rise commercial uses. Immediately to the south of the project site across a 15' alley are primarily two- story multi-family buildings.

**Bird's Eye View of Project Site Looking North**





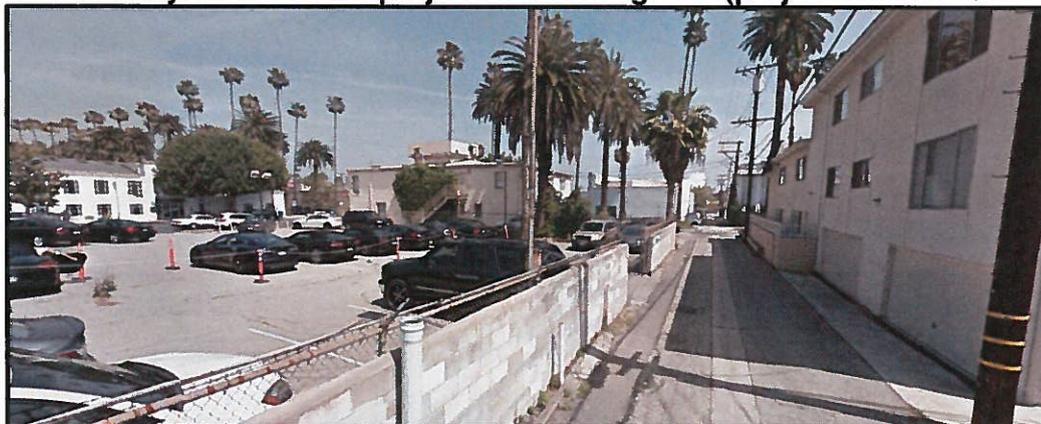
**Existing Project Site – View of project site from Northern side of Olympic**



**View of alley to the rear of project site looking west (project site is to the right)**



**View of alley to the rear of project site looking east (project site is to the left)**





**PROJECT DESCRIPTION**

The proposed project consists of the demolition of an existing surface parking lot and the construction of a three-story, 35' tall commercial building and associated site improvements. The project is located on a lot that measures 12,000 square feet. The total floor area of the building would be 20,244 square feet. As part of the project, the property owner will dedicate 2.5' of property to the City as an alley dedication, increasing the 15' alley width to 17.5' adjacent to the property. The proposed project would be built to the property line on Olympic Boulevard, and would have a minimum building setback of 34'8" from the alley facing the south side of the building. The third floor of the structure is set back an average of 42' from the alley (a minimum setback of 34'8" and a maximum setback of 50'5"). At the rear of the proposed project would be a loading zone, driveway to access the subterranean parking, outdoor patio on the ground level, located behind the loading zone, and outdoor patio located on the third floor of the building. The project also includes a zoning code compliant 6' clerestory feature located on top of the building's 35' tall roof.

**Summary of changes from previously submitted iterations**

The project being considered by the Planning Commission has been modified from the project that was presented most recently to the Commission on June 23, 2016. The most significant changes include:

- Decrease in height of the clerestory from 9' to 6'
- Decrease in number of parking spaces to 58 spaces from 76 spaces. The decrease is due in part to the reduction of the square footage of the building. Additionally, in the currently proposed project there are no excess parking spaces provided above the number of spaces needed to meet code requirements.
- Increase in rear setback. The project presented at the June 23 meeting had a minimum 29' building setback from the alley. The currently proposed project has a 37'6" setback on the first floor, a 34'8" setback on the second floor and an average 42' setback on the third floor (ranging from 34'8" to 50'5" setback).
- Decrease in square footage of building from 22,045 square feet to 20,244 square feet, which brings the building FAR to 1.69:1 (consistent with the proposal presented at the April 28, 2016 Planning Commission meeting).

The following table summarizes the project characteristics and provides a comparison between the existing and previously proposed projects.

| <b>Development Standard</b> | <b>Required/ Allowed</b>    | <b>April 28 Version</b> | <b>June 23 Version</b> | <b>Currently proposed Version</b> |
|-----------------------------|-----------------------------|-------------------------|------------------------|-----------------------------------|
| <b>Site Area</b>            | N/A                         | 11,750 SF               | 11,750 SF              | 11,750 SF                         |
| <b>Floor Area</b>           |                             | 20,292 SF               | 22,045 SF              | 20,244 SF                         |
| <b>Ground Level</b>         | 24,000 SF                   | 7,044 SF                | 6,917 SF               | 6,900 SF                          |
| <b>Second Level</b>         | Maximum @ a                 | 7,516 SF                | 8,121 SF               | 7,250 SF                          |
| <b>Third Level</b>          | 2.0:1 FAR                   | 5,732 SF                | 7,007 SF               | 6,091 SF                          |
| <b>Floor Area Ratio</b>     | 1.33:1 max, 2.00:1 with CUP | 1.69:1                  | 1:84:1                 | 1.69:1                            |



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|                      |  |                             |                          |                                 |
|----------------------|--|-----------------------------|--------------------------|---------------------------------|
| <b>Rear Setbacks</b> | Minimum 6' setback.<br>Additional setback on upper floors: no more than 33% of lot depth for second story, no more than 50% of lot depth for third story |                             |                          |                                 |
| <b>Ground Level</b>  |  | 37'6"                       | 29'                      | 37'6"                           |
| <b>Second Level</b>  |  | 37'6"                       | 29'                      | 34'8"                           |
| <b>Third Level</b>   |  | 57'6"                       | 29' to 43'               | 34'8" to 50'5"<br>(Average 42') |
| <b>Height</b>        | 35' max, 45' with CUP  | 45' (with 11'6" clerestory) | 35' (with 9' clerestory) | 35' (with 6' clerestory)        |
| <b>Stories</b>       | 2 stories max, 3 stories with CUP  | 3 story                     | 3 story                  | 3 story                         |
| <b>Parking</b>       | 58 standard spaces (1 per 350)   | 55 standard spaces;         | 73 standard spaces;      | 55 standard spaces              |
|                      |  | 3 ADA spaces;               | 3 ADA spaces             | 3 ADA spaces;                   |
|                      |  | 58 total spaces             | total 76 spaces          | 58 total spaces                 |

**Rendering of the Olympic Boulevard elevation of the currently proposed project**





Rendering of the Olympic Boulevard elevation of the originally proposed design (April 28, 2016)



## REQUESTED ENTITLEMENTS

**Conditional Use Permit** – Pursuant to BHMC § 10-3-1632, a Conditional Use Permit is required for a building in the C-3T-2 zone to exceed two stories, 35' in height and a 1.33:1 floor area ratio (FAR). An applicant may request up to three stories, 45' in height and a 2.00:1 FAR. The Planning Commission is the reviewing authority for projects requesting CUPs. The applicant is requesting three stories, 35' in height and 1.69:1 FAR.

BHMC § 10-3-2741 allows the reviewing authority (in this case, the Planning Commission) to establish loading space requirements for the project as a condition of project approval, because the applicant is applying for a CUP. The applicant is requesting a loading zone that is 60' in length, 12' in width and is accessed via two entrances that are 15' wide. The loading space has not changed from the versions of the project considered on April 28, 2016, and June 23, 2016.

**Minor Accommodation** – Pursuant to BHMC § 10-3-1953, a Minor Accommodation may be requested to allow a deviation from the requirement that commercial buildings have a maximum 25' opening in the perimeter wall separating a commercial property from an alley that abuts a residential property. An applicant may request up to 30' of opening per site. The applicant is requesting a total of 52' of opening in the rear wall (spread across two existing sites). This request has not changed from the requests made for the project considered on April 28, 2016 and June 23, 2016.



## **ENVIRONMENTAL ASSESSMENT**

A previous version of the subject project has been assessed in accordance with the authority and criteria contained in the California Environmental Quality Act (CEQA), the State CEQA Guidelines<sup>2</sup>, and the environmental regulations of the City. The currently proposed project is falls within the parameters of the previously assessed version of the project. Projects characterized as in-fill development that meet certain criteria are categorically exempt from CEQA pursuant to Section 15332 of the State CEQA Guidelines. The project meets all five of the following criteria set forth in Section 15332 of the State CEQA Guidelines for in-fill development projects:

- a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
- b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
- c) The project site has no value as habitat for endangered, rare, or threatened species.
- d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
- e) The site can be adequately served by all required utilities and public services.

Therefore, this project has been determined to be exempt from further environmental review under CEQA. The Class 32 Categorical Exemption report is included as Attachment E for reference.

## **PUBLIC OUTREACH AND NOTIFICATION**

| Type of Notice   | Required Period | Required Notice Date | Actual Notice Date | Actual Period |
|------------------|-----------------|----------------------|--------------------|---------------|
| Newspaper Notice | 10 Days         | April 18, 2016       | April 15, 2016     | 13 Days       |
| Mailed Notice    | 10 Days         | April 18, 2016       | April 15, 2016     | 13 Days       |
| Property Posting | 10 Days         | April 18, 2016       | April 18, 2016     | 10 Days       |
| Posted Notice    | 7 Days          | April 21, 2016       | April 21, 2016     | 7 Days        |
| Website          | 7 Days          | April 21, 2016       | April 21, 2016     | 7 Days        |

The public hearing has been continued to a date certain from the April 28, 2016 meeting to the June 9, 2016 meeting to the June 23, 2016 meeting to the July 14, 2016 meeting. Per the public noticing requirements, the project was initially noticed pursuant to the City and State requirements. Staff has contacted individuals that have expressed interest in the project to inform them of the project continuances. It should also be noted that the project applicants conducted public outreach separate from the outreach that is conducted by staff. This included an introductory public meeting held at the Roxbury Community Center on February 23, 2015 at which time the project applicant team presented the project to the public and answered questions. The applicant team also mailed a letter prior to the public hearing notice for the April 28, 2016 meeting informing the public that the project was being processed by the Planning Division and would be heard before the Planning Commission at an upcoming meeting.

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<sup>2</sup> The CEQA Guidelines and Statute are available online at <http://ceres.ca.gov/ceqa/guidelines>



**PUBLIC COMMENT**

In addition to the required newspaper and mailed notice, prior to the April 28, 2016 meeting a courtesy email was sent to the Southeast Task Force as well as other residents who have identified an interest in development proposals in the southeast portion of the City. The Southeast Task Force was again notified of the status of the project on June 30, 2016. Since April, staff has received several email responses regarding the project and those responses are included in Attachment F.

**ANALYSIS<sup>3</sup>**

Project approval, conditional approval or denial is based upon specific findings for each discretionary application requested by the applicant. The findings that must be made in order to approve the project are provided in Attachment A, and draft findings are included in the draft Planning Commission Resolution (Attachment B), which may be used to guide the Planning Commission’s deliberation of the subject project. The analysis considered by staff in drafting the findings is set forth as follows:

**Compliance with Zoning Code.**

The proposed project would comply with current code. The existing building is located in the C-3T-2 zone and includes the following:

**Height and density:**

The project is 35’ in height. This has been reduced from the previously proposed 45’ in height. The clerestory height has been reduced from 11’3” (April 28 version) to 9’ (June 23 version) to 6’ (currently proposed version). The clerestory complies with the requirements that it occupies no more than 33% of the roof area, is not higher than fifteen feet above the adjacent roof deck and is located so that it does not intersect a 45 degree plane from the edge of the roof of the structure; therefore it does not count toward the maximum height of the building.

BHMC § 10-3-1632 limits buildings in the C-3T-2 zone to two stories or 35’, whichever is less and 1.33:1 floor area ratio; however, through a conditional use permit the Planning Commission may approve a building that is three stories or 45’ and up to 2.00:1 floor area ratio, provided that it complies with several conditions. These conditions and a description of how the project complies with the conditions are included in the following table:

|  |   |
|--|---|
| <i>An additional setback from the rear property line provided the setback does not exceed thirty-three percent (33%) of the lot depth for any portion of the structure below two stories</i> | The proposed project would have a first floor setback of 37’6” and second floor rear setback of 34’8” from the new property line, which is 29% of the depth of the site (at a |
|--|---|

<sup>3</sup> The information provided in this section is based on analysis prepared by the report author prior to the public hearing. The Planning Commission in its review of the administrative record and based on public testimony may reach a different conclusion from that presented in this report and may choose to make alternate findings. A change to the findings may result in a final action that is different from the staff recommended action in this report.



|   |  |
|---|--|
| <p><i>and does not exceed fifty percent (50%) for the third story.</i></p>  | <p>minimum). The third story of the project has an average setback of 42', which is 35% of the depth of the site. These setbacks comply with the Beverly Hills Municipal Code, and serve to push the building further from the alley that separates the project site from multifamily properties to the south.</p>                                   |
| <p><i>The design of the façade and structure facing residential uses shall be harmonious with the adjacent residential character.</i></p>   | <p>The proposed project includes a façade composed primarily of brick that is accented with metal and concrete. The façade facing residential uses is harmonious with the adjacent residential character. Brick walls separate the loading area and outdoor patio area from the alley that separates the project site from the residential uses.</p> |
| <p><i>Landscaping or other parklike amenities shall be required within the rear setback in conjunction with the design for loading, parking, trash removal, and access to and from the site.</i></p>  | <p>Landscaping has been integrated into the rear setback of the project in order to provide a buffer between the project and the residential uses.</p>   |
| <p><i>Appropriate restrictions shall be imposed on the structure, including hours of operation, additional parking, and parking restrictions in order to ensure adequate parking on-site and limit types of uses that would create noise, odor, or glare.</i></p> | <p>Staff is proposing a number of restrictions on the project in order to ensure that the project does not impact the adjacent residential uses. These restrictions are included as conditions in the draft resolution attached this report.</p>   |
| <p><i>The intensity of use shall not exceed either sixteen (16) vehicle trips per hour, or two hundred (200) vehicle trips per day for each one thousand (1,000) gross square feet of floor area.</i></p>   | <p>Because the project would have a floor area of 20,244 square feet the project would be allowed a maximum of about 4,049 vehicle trips per day. The traffic study indicates the project would add approximately 648 average trips per day, which is well below the threshold.</p>  |

A shade and shadow study for the proposed project is provided as Attachment C. The study provides shade and shadow modeling for the summer solstice and winter solstice at one hour intervals between 9:00 a.m. to 5:00 p.m. The study indicates that during summer solstice the project will cast a shadow on the neighboring commercial property to the west in the morning hours and to the east in the afternoon hours. During the winter solstice the proposed project would cast shadows across Olympic Boulevard and, during the afternoon hours, would cast a shadow on the neighboring commercial property to the east of the project site. The shade and shadow analysis indicates that the project will not cast shadows on the adjacent multi-family properties on the summer or winter solstice.



**Parking:**

BHMC § 10-3-2730 requires the provision of one parking space for every 350 square feet of floor area. The proposed building is required to include 58 parking spaces. The three levels of underground parking provide 58 parking spaces; therefore, the building complies with zoning code parking requirements. The original traffic and parking study prepared by the applicant notes that mixed-use development can have lower parking needs due to “shared parking” capability, where different land uses, such as retail, restaurant, and office, can share the same parking stall, at different times of the day. In addition, the project may improve the street parking situation on Olympic Boulevard by removing existing curb cuts, allowing for the possibility of an additional on street public parking space directly in front of the project site.

**Loading:**

The loading area for the building is located along the alley to the south of the project. The loading zone is 60’ in length and is situated parallel to the alley with two 15’ openings in the required masonry wall that runs along the rear property line. As noted earlier in the report, the applicant is requesting a Minor Accommodation to allow additional openings in the wall at the rear of the property to accommodate the loading entrance and exit. The additional openings in the wall will provide for a loading zone that allows trucks to safely maneuver into the loading area from the adjacent alley without backing up. Because of the size of the alley, a parallel loading area accessed with two openings rather than a perpendicular loading area with one opening, into which a truck would be required to back-in, is preferable. Additional openings in the rear wall will also allow for the separation of the driveway that serves as the entrance and exit for the underground parking and the loading area, reducing the potential for conflicts between vehicles in the loading zone and vehicles entering and exiting the parking garage.

Because the applicant is requesting a CUP, the Planning Commission has the ability to condition the project with a loading area that the Commission finds is appropriate. The traffic and loading study completed by the applicant indicates that the loading zone provided would be adequate for the proposed project. The City Traffic Engineer peer reviewed the traffic and loading study and concurs with the adequacy of the loading facility. The applicant team has prepared a specification sheet of various types of trucks that would be accommodated in the loading zone provided (Appendix D). The information provided by the applicant indicates that a truck up to 24’ in length could access the loading zone. In order to ensure that the loading zone operates in the most efficient manner, and that the loading activities do not negatively impact the neighborhood, staff has included several loading related conditions in the resolution.

**Uses and Compatibility of Uses**

The C-3T-2 zone is intended for commercial uses. The proposed project includes development of additional commercial office uses, as well as retail and restaurant uses. As proposed, the project is consistent with the goals of the C-3T-2 zone. Further, the building is replacing a surface parking lot used for a rental car company, and therefore will provide more neighborhood serving uses.

The proposed project is located in a commercial zone that is adjacent to residential uses. The



nearest multi-family property is located approximately 52' away from the proposed building. The project design includes two outdoor patio areas that face the multi-family buildings to the south. The outdoor patio area located on the ground floor is located 35'6" from the nearest multi-family property. The applicant has indicated that this patio could be used by patrons of a restaurant if a restaurant is established as a use on the ground floor. This patio area is located behind the loading area, and is separated from the loading area by a 6' tall brick wall. The outdoor patio area located on the third floor of the proposed project is located 52' from the nearest multi-family property. The third floor patio will be used by employees of the third floor tenant space. This patio area is shielded from the multi-family properties by a 40" tall barrier and planted vegetation.

As noted above, the proposed project is located in a transition zone, where commercial uses are located adjacent to residential uses. In order to alleviate some of the inherent issues that may arise from these adjacent uses the BHMC includes certain operational and development standards for commercial uses near residential uses. These include increased setbacks, required perimeter walls and planting in the rear of the project site, and general operational standards that regulate such activities as loading, hours of operation, and noise. While the project complies with these standards, and includes design elements to minimize impact on the adjacent residential uses, staff recommends additional conditions to further alleviate potential issues that may arise.

In order to address issues that may arise from the use of the two patio areas proposed as part of the project, the draft resolution includes conditions that limit the use of the patios. The conditions prohibit the use of the third floor patio outside the hours of 7:00 a.m. to 7:00 p.m., prohibit amplified music on the third floor patio, require landscaped screening to shield the patio from the residential uses, and limit the use of this patio to employees of the third floor tenant space. Recommended conditions for the ground floor patio include prohibiting the use of the ground floor patio outside the hours of 9:00 a.m. to 9:00 p.m., and prohibiting amplified music on the patio.

### **Traffic and Circulation**

The project site is located on the southern side of Olympic Boulevard between South Palm Drive and South Maple Drive. South Palm Drive is an unstriped two-lane street with four metered spaces located on the west side of the street south of Olympic Boulevard. The remaining parking on South Palm Drive is two-hour parking except for those with residential permits. South Maple Drive is also an unstriped two-lane street. South Maple Drive has four metered parking spaces located on the block south of Olympic Boulevard. The remaining parking on South Maple Drive is two-hour parking except for those with residential permits.

The proposed project changes the use and adds floor area to the project site, which is currently a surface parking lot. A traffic impact analysis was conducted as part of the environmental review of the proposal and the analysis found that there would not be significant impacts to the surrounding neighborhood. The project is expected to generate a total of 648 daily trips. While this would be a substantial increase in trips compared to the existing use on the site, the number of trips would not exceed the thresholds for significant impacts as defined by the City. The draft resolution includes several proposed project conditions to address alley safety given the increased number of trips in the alley that will result from the project. Below are the results



of the trip generation study conducted for the proposed project:

**Project Trip Generation**

| Land Use                 | Size   | Unit  | Average Daily Traffic |            | A.M. Peak Hour |           | P.M. Peak Hour |            |
|--------------------------|--------|-------|-----------------------|------------|----------------|-----------|----------------|------------|
|                          |        |       | Trip Ends Rate        | Trip Ends  | Trip Ends Rate | Trip Ends | Trip Ends Rate | Trip Ends  |
| <b>Existing Land Use</b> |        |       |                       |            |                |           |                |            |
| Car Storage/Rental       | 12.0   | KGsf* | 0.00                  | 0          | 0.00           | 0         | 0.00           | 0          |
| <b>Proposed Land Use</b> |        |       |                       |            |                |           |                |            |
| General Office           | 13.913 | KGsf  | 21.0                  | 292        | 2.80           | 39        | 6.39           | 90         |
| Specialty Retail Center  | 7.426  | KGsf  | 47.85                 | 356        | 0.00           | 0         | 5.16           | 39         |
| <b>Net New Trips</b>     |        |       |                       | <b>648</b> |                | <b>39</b> |                | <b>129</b> |

Source: Traffic and Parking Study, Appendix A

\*KGsf = thousand gross square feet

During construction, the project is expected to produce approximately 700 round-trip truck trips with the use of 20 yard trucks or 1,400 round-trip truck trips with the use of 10 yard trucks for excavation. Construction truck trips would occur on Olympic Boulevard, a City-approved heavy haul route, and these trips would comply with the City’s heavy haul regulations. Due to the temporary nature of construction, these trips are not expected to result in any negative effects on traffic and circulation beyond the construction period of approximately 18 months. Based on the environmental analysis of the project, it is not anticipated that project construction would cause significant traffic impacts. A proposed condition included in the draft resolution requires the applicant to submit a Construction Management Plan to the City for review and approval prior to the issuance of a building permit. This Plan must include information about construction parking arrangements and hauling activities, information about the number of works and schedules for construction, information about construction staging. Further, staff recommends conditions that will require a posted sign on the construction fence with the name and contact information for the general contractor and construction supervisor and prohibition on the parking of construction vehicles in the alley.

**Streetscape & Urban Design**

The proposed building would replace an existing surface parking lot. The three-story building would have a zero-lot-line setback on Olympic Boulevard, which would contribute to activating the pedestrian experience along this portion of Olympic Boulevard. The façade of the building includes modulation of a majority of the third floor away from Olympic Boulevard to create a deck that reduces the perceived bulk and mass of the building from the public right of way. This feature has been added by the applicant team after the discussion on the project in April. Further, the building is designed with pedestrian oriented uses such as restaurant and retail



space at the ground floor to further enhances this portion of Olympic Boulevard. Providing the driveway to the underground parking at the rear of the building reduces potential conflicts between pedestrians and vehicles along Olympic Boulevard.

Orienting the building toward the front of the property along Olympic Boulevard allows for the provision of setbacks from the multi-family properties to the rear of the project site. A minimum 52' setback from the nearest multi-family building is provided. The setbacks at the rear of the building have been reduced from the previously reviewed design; however the provided setbacks are still quite substantial and minimize potential impacts to the multi-family properties to the rear of the building.

The applicant team presented the project to the Architectural Commission on April 15, 2015 for a preview. The project was well received by the Architectural Commission. While the Architectural Commission reviewed the previously proposed project that was before the Planning Commission on April 28, 2016, many of the elements remain in the currently proposed revised project. Further, the project is required to return to the Architectural Commission for formal review prior to obtaining building permits.

### **General Plan Consistency**

The General Plan includes numerous goals and policies intended to help guide development in the City. Some policies relevant to the Planning Commission's review of the project include:

- Policy LU 2.1 City Places: Neighborhoods, Districts, and Corridors. Maintain and enhance the character, distribution, built form, scale, and aesthetic qualities of the City's distinctive residential neighborhoods, business districts, corridors, and open spaces.
- Policy LU 2.4 Architectural and Site Design. Require that new construction and renovation of existing buildings and properties exhibit a high level of excellence in site planning, architectural design, building materials, use of sustainable design and construction practices, landscaping, and amenities that contribute to the City's distinctive image and complement existing development.
- Policy LU 9.1 Uses for Diverse Customers. Accommodate retail, office, entertainment, dining, hotel, and visitor serving uses that support the needs of local residents, attract customers from the region, and provide a quality experience for national and international tourists.
- Policy LU 10.1 Local-Serving Businesses. Promote appropriate development of businesses that serve, are located in proximity to, and are accessible to adjoining residential neighborhoods, such as grocery stores, dry cleaners, and personal care businesses.

### **CONCLUSION**

The proposed Conditional Use Permit would allow development of a three story building containing office and retail/restaurant uses. The proposed Minor Accommodation would allow for reasonable access to an on-site loading area for the proposed building at the rear of the site. The proposed project would meet the standards and goals set forth in the Municipal Code and



## Planning Commission Report

9212 Olympic Boulevard

July 14, 2016

Page 15 of 15

General Plan. For these reasons, staff recommends approval of the proposed Conditional Use Permit and Minor Accommodation.

### **NEXT STEPS**

It is recommended that the Planning Commission conduct the public hearing and adopt the attached resolution approving the requested Conditional Use Permit and Minor Accommodation.

Alternatively, the Planning Commission may consider the following actions:

1. Deny the project, or portions of the project, based on specific findings.
2. Direct staff or applicant as appropriate and continue the hearing to a date (un)certain, consistent with permit processing timelines.

Report Reviewed By:

A handwritten signature in blue ink, appearing to read "R. Gohlich".

---

Ryan Gohlich, AICP, Assistant Director of  
Community Development / City Planner



**Attachment A**

Required Findings

**Conditional Use Permit Finding:**

The additional height and density would not be detrimental to the adjacent property or to the public welfare.

**Minor Accommodation Finding:**

The increased size of the opening will not have a substantial adverse impact on traffic safety, noise, the scale and massing of the streetscape, or garden quality of the City.



**Attachment B**

Draft Resolution

RESOLUTION NO.

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF BEVERLY HILLS CONDITIONALLY APPROVING A CONDITIONAL USE PERMIT AND MINOR ACCOMMODATION TO ALLOW THE CONSTRUCTION OF AN APPROXIMATELY 20,244 SQUARE FOOT COMMERCIAL BUILDING ON THE PROPERTY LOCATED AT 9206-9212 OLYMPIC BOULEVARD.

The Planning Commission of the City of Beverly Hills hereby finds, resolves, and determines as follows:

Section 1. EHI-9222, LLC, applicant and property owner (the “Applicant”), has submitted an application for a Conditional Use Permit to allow a floor area ratio of 1.69 to 1 and a height of 35’ (3 stories) in a C-3T-2 zone, and a Minor Accommodation to allow a deviation in the openings of the perimeter wall located to the rear of the property, both of which are associated with the construction of a new commercial building on the property located at 9206-9212 Olympic Boulevard (the “Project”). The entitlements required to approve the Project may be approved by the Planning Commission if specific findings can be made in support of the Project.

Section 2. The Project site is located on the south side of Olympic Boulevard, between South Palm Drive and South Maple Drive. The Project site measures 100’ by 120’ and is made up of two individual parcels of land, each measuring 50’ by 120’. The Project site totals 12,000 square feet in area and is immediately bordered by low-rise commercial buildings across Olympic Boulevard to the north, two- and three-story multi-family properties across at 15-foot alley to the south, a two-story commercial building to the east, and a commercial property

improved with a small one-story structure to the west. Development on this portion Olympic Boulevard is characterized by one- and two-story commercial buildings and small multi-tenant shopping centers.

The Project involves construction of a new 3-story commercial building totaling 20,244 square-feet. The Project will have three retail/restaurant spaces at the ground floor and two levels of general office space above the ground floor. The first level will contain approximately 6,900 square feet of retail space and/or restaurant space with a maximum of 1,000 square feet of bar and dining area, the second level of development will consist of approximately 7,253 square feet of general office space, and the third level of development will consist of approximately 6,091 square feet of general office space. The Project will be a 35' tall, 3-story building with an additional 6' clerestory as permitted by the Beverly Hills Municipal Code.

As proposed, the Project requires 58 parking spaces, and the applicant has provided 58 full-size (9' x 19') parking spaces in three subterranean levels. A new driveway from the existing alley at the rear of the site will provide access to the proposed underground on-site parking. A proposed 60' long loading zone would be located perpendicular to the alley at the rear of the site. The loading zone would be accessible via two 15' wide openings in the proposed three-foot tall wall separating the property from the alley to the rear of the property. Pedestrian access to the building would occur from Olympic Boulevard through the building's front entrance.

Section 3. The request to construct a new office building results in the need for specific entitlements as follows:

1. Conditional Use Permit. A Conditional Use Permit is required for

the construction of a structure that exceeds two stories or 35' in height and/or has a floor area ratio greater than 1.33 to one in the C-3T-2 zone. The Project includes the construction of a structure that is three stories and 35' in height and has a floor area ratio of 1.69 to one.

2. Minor Accommodation. A Minor Accommodation is required in order to accommodate additional openings in the required masonry wall located on the rear property line adjacent to the alley. The maximum opening allowed is 25 linear feet per parcel. With the Minor Accommodation the Applicant may request 30 linear feet of opening per parcel. The Project proposes a total of 52 linear feet of opening spread across the two existing parcels.

Section 4. The Project has been environmentally reviewed pursuant to the California Environmental Quality Act (Public Resources Code Sections 21000, *et seq.* ("CEQA")), the State CEQA Guidelines (California Code of Regulations, Title 14, Sections 15000, *et seq.*), and the environmental regulations of the City. Projects characterized as in-fill development that meet certain criteria are categorically exempt from CEQA pursuant to Section 15332 of the State CEQA Guidelines. A Class 32 Exemption Report was prepared for a version of the Project that was previously submitted, which is substantially similar to the proposed project, and the project meets all five of the following criteria set forth in Section 15332 of the State CEQA Guidelines for in-fill development projects:

a.) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

- b.) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
- c.) The project site has no value as habitat for endangered, rare, or threatened species.
- d.) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
- e.) The site can be adequately served by all required utilities and public services.

Therefore, the Planning Commission hereby finds that the project is exempt from further environmental review under CEQA.

Section 5. Notice of the Project and public hearing was mailed on April 15, 2016, to all property owners and residential occupants within a 500-foot radius plus block-face of the property. Additionally, notices were also published in the City's two newspapers, the *Beverly Hills Courier* and *Beverly Hills Weekly*, on April 15, 2016 and April 21, 2016, respectively. An on-site posted notice was displayed on the property beginning on April 15, 2016. On April 28, 2016, the Planning Commission considered the application at a duly noticed public hearing and continued the item to the June 9, 2016 regularly scheduled Planning Commission meeting. On June 9, 2016 the Planning Commission continued the item to the June 23, 2016 regularly scheduled Planning Commission meeting. On June 23, 2016 the Planning Commission considered the application and continued the item to the July 14, 2016 meeting. On July 14, 2016 the Planning Commission considered the application. Evidence, both written and oral, was presented at the meetings.

Section 6. In reviewing the request for a Conditional Use Permit, the Planning Commission considered whether it could make the following findings in support of the Project:

1. The additional height and density would not be detrimental to adjacent property or to the public welfare.

Section 7. Based on the foregoing, the Planning Commission hereby finds and determines as follows with respect to the Conditional Use Permit:

1. As conditioned, the proposed project would not be detrimental to adjacent property or to the public welfare. The project is designed to meet the conditions set forth in Beverly Hills Municipal Code §10-3-1632 that commercial projects must adhere to in order to request a Conditional Use Permit for additional height and density in the C-3T-2 zone. These conditions include:

- a. An additional setback shall be required from the rear property line; provided, further, such additional setback shall not exceed thirty three percent (33%) of the lot depth for any portion of the structure below two (2) stories and shall not exceed fifty percent (50%) of the lot depth for the third story.
- b. The design of the facade and the structure facing residential uses shall be harmonious with the adjacent residential character in architectural style, color, and material.

- c. Landscaping or other parklike amenities shall be required within the rear setback in conjunction with the design for loading, parking, trash removal, and access to and from the site.
  - d. Appropriate restrictions shall be imposed upon the use of the structure, including the hours of operation, additional parking, and parking restrictions in order to assure adequate on-site parking and to limit the types of uses creating problems of noise, odor, or glare.
  - e. The intensity of use shall not exceed either sixteen (16) vehicle trips per hour, or two hundred (200) vehicle trips per day for each one thousand (1,000) gross square feet of floor area for uses as specified in the most recent edition of the Institute of Traffic Engineers' publication entitled "Trip Generation", and if the use is not specified in such publication, the vehicle traffic generation for the proposed use shall be designated by the director of transportation.
2. The proposed project meets the above required conditions, which are meant to ensure the compatibility of the building with the surrounding neighborhood. The Project includes setbacks on the second and third floors in order to provide additional privacy, and light and air to the existing multi-family properties across the alley to the south of the project site. This also provides additional space to provide planting materials between the proposed building and the alley between the building and the residential uses, which will further enhance privacy and soften the look of

the building from the alley. The Project is designed to enhance the neighborhood and the style of the building complements the existing development in the area. Further, the provision of underground parking with alley access both contributes to a positive pedestrian experience along Olympic Boulevard by reducing potential conflicts between pedestrians and vehicles, as well as increases opportunities for street parking located in front of the project site by eliminating a pre-existing curb cut. Landscaping and other park-like amenities are provided toward the rear of the Project facing the residential buildings to shield the loading area and electrical transformer from view of the adjacent residential uses. Restrictions have been placed on the Project in the form of conditions of approval to ensure that the use will be compatible with the neighborhood. These conditions include restrictions on loading times and frequency, time restrictions on the use of outdoor areas of the Project, and various conditions to ensure the improvement of the alley and safe use of the loading zone and alley by visitors to the building. A traffic study was conducted for the project and the projected number of daily trips falls below the sixteen (16) vehicle trips per hour, or two hundred (200) vehicle trips per day for each one thousand (1,000) gross square feet of floor area as required by the Beverly Hills Municipal Code. Therefore, construction of the project will not be detrimental to the adjacent property or the public welfare.

Section 8. In reviewing the request for a Minor Accommodation, the Planning Commission considered whether it could make the following findings in support of the Project:

1. The increased size of the opening will not have a substantial adverse impact on traffic safety, noise, the scale and massing of the streetscape, or garden quality of the City.

Section 9. Based on the foregoing, the Planning Commission hereby finds and determines as follows with respect to the Minor Accommodation:

1. As conditioned, the increased size of the opening in the perimeter wall abutting the alley will not have a substantial adverse impact on traffic safety, noise, the scale and massing of the streetscape, or garden quality of the City. The additional openings in the masonry wall to the rear of the property will provide a loading zone that allows trucks to safely maneuver into the loading zone from the 17.5' wide alley. Further, allowing additional openings in the wall provides for the ability to separate the access for the parking garage from the access to the loading zone, which will increase vehicular safety. The scale and massing of the streetscape will not be negatively impacted by the proposed openings in the rear wall of the building, and the Project includes landscaped areas that screen the loading zone and building from view of the adjacent residential properties to ensure that the garden quality of the City is not compromised.

Section 10. Based on the foregoing, the Planning Commission hereby grants the requested Conditional Use Permit and Minor Accommodation, subject to the following conditions:

1. The Planning Commission hereby approves a floor area ratio of 1.69 to one, a height of three stories and 35' (excluding an up to 6' clerestory), and a total of 52 linear feet of openings in the required 3-foot tall masonry wall located on the rear property line. The openings are approved to consist of one 22' opening to the subterranean garage, and two 15' openings to the loading zone.

2. Prior to the issuance of any building permits, the two parcels associated with the development of the Project shall be legally tied to form one parcel. The lot-tie covenant is subject to review and approval by the City Attorney and shall be recorded with the Los Angeles County Assessor's Office.

3. The Project shall be subject to review and approval by the Architectural Commission.

4. After completion of architectural review, and prior to issuance of the certificate of occupancy, the Applicant is required to comply with the Public Art Ordinance. An application is required to be submitted to the Fine Art Commission for review and approval of any proposed art piece or, as an alternative, the Applicant may choose to pay an in-lieu art fee.

5. To prevent potential noise impacts to neighboring residents, use of the third-floor deck area shall be limited to the hours of 7:00 a.m. to 7:00 p.m. daily, and signage indicating such restrictions shall be installed on the deck.

6. Amplified music shall be prohibited on the third-floor deck area.

7. The third-floor deck area shall be used exclusively by employees of the building.

8. Landscape screening, subject to review and approval by the Director of Community Development, shall be provided at the rear of the third-floor deck, facing the multi-family properties across the alley.

9. To prevent potential noise impacts to neighboring residents, use of the ground floor patio area shall be limited to the hours of 9:00 a.m. to 9:00 p.m. daily.

10. Amplified music shall be prohibited on the ground-floor patio area.

11. Unless otherwise authorized by the Planning Commission, the total square footage of all bar and dining areas (excluding back-of-house operations) on the Project site shall be less than 1,000 square feet.

12. The Project shall operate at all times in a manner not detrimental to surrounding properties or residents by reason of lights, noise, activities, parking, or other actions.

13. The Project shall operate at all times in compliance with Municipal Code requirements for Noise Regulation.

14. Employees shall be provided with free parking and retail and/or restaurant patrons shall be provided with two-hour validated parking.

15. Signs shall be placed in appropriate locations to direct building parking and deliveries to the alley.

16. To ensure visibility for egress traffic, a silent visual alarm device shall be installed at the exit ramp by the alley. This device shall light up when a vehicle is leaving the garage, alerting the oncoming traffic in the alley. The device shall be adequately shielded as to not disturb the residential units in the multi-family

buildings across the alley from the project. Parabolic mirrors shall be placed at the intersection of the east-west alley and the north-south alley at the rear of the Project site.

17. All deliveries shall be made to the property between 10 a.m. and 4:00 p.m. to avoid peak traffic on the adjacent alleys.

18. The loading zone shall be a minimum of 60' by 12' with two 15' openings per the approved plans. Trucks shall be instructed to approach the site from eastbound Olympic Boulevard, turn right (southbound) onto Palm Drive, and continue in a clockwise direction, exiting the alley onto Maple Drive after completing loading activities in the designated loading area.

19. The loading zone shall have clear signage prohibiting parking by any vehicle other than a delivery vehicle at the time it is making a delivery.

20. The Applicant shall provide improved illumination in the alley. The illumination must be appropriately shielded from the adjacent multi-family buildings. Any illumination shall be subject to review by the City.

21. A clear and identifiable street address shall be placed in a visible location.

22. Two and a half feet (2.5') for public use at the southern side of the property shall be dedicated to the City of Beverly Hills to widen the alley according to the Street Master Plan adopted by the City Council.

23. The pavement and center drainage gutter in the alley at the rear of the property shall be removed and replaced according to the City standards, and the full cost of such work shall be paid for by the Applicant.

24. Sidewalk, and curb and gutter fronting the site on Olympic Boulevard shall be removed and replaced (according to City standards), and the full cost of such work shall be paid for by the Applicant. The existing driveway on Olympic Boulevard shall be removed.

25. The applicant shall work with the City to provide improved lighting and other street amenities to provide safe pedestrian access.

26. A Sewer Area Study may be required based on final approved use and occupancy in order to analyze the existing sewer lines within the City of Beverly Hills which will convey the flow from the subject project. The Applicant shall pay for the sewer system upgrades (if needed) due to the additional proposed sewage generated from this project.

27. In accordance with the requirements set forth in City Council Resolution 71-R-4269, the applicant shall file a formal written request with the Civil Engineering Division for approval of any type of temporary construction encroachment (steel tieback rods, etc.) within the public right-of-way. Shoring plans and elevations prepared by a registered civil engineer must be submitted for review by the Civil Engineering Division. Shoring elements shall not project in to the alleys. An indemnity bond must be submitted and approved by the City Attorney prior to excavation.

28. The Applicant shall protect all existing street trees adjacent to the subject site during construction of the Project. Every effort shall be made to retain mature street trees. No street trees, including those street trees designated on the

preliminary plans, shall be removed and/or relocated unless written approval from the Recreation and Parks Department and the City Engineer is first obtained.

29. Removal and/or replacement of any street trees shall not commence until the Applicant has provided the City with an improvement security to ensure the establishment of any relocated or replaced street trees. The security amount will be determined by the Director of Recreation and Parks, and shall be in a form approved by the City Engineer and the City Attorney.

30. The Applicant shall provide that all roof and/or surface drains discharge to the street. All curb drains installed shall be angled at 45 degrees to the curb face in the direction of the normal street drainage flow. The Applicant shall provide that all groundwater discharges to a storm drain. All ground water discharges must have a permit (NPDES) from the Regional Water Quality Control Board. Connection to a storm drain shall be accomplished in the manner approved by the City Engineer and the Los Angeles County Department of Public Works. No concentrated discharges onto the alley surfaces will be permitted.

31. The Applicant shall provide for all utility facilities, including electrical transformers required for service to the proposed structure(s), to be installed on the subject site. No such installations will be allowed in any City right-of-way.

32. The Applicant shall underground, if necessary, the utilities in adjacent streets and alleys per requirements of the Utility Company and the City.

33. The Applicant shall make connection to the City's sanitary sewer system through the existing connections available to the subject site unless otherwise approved by the City Engineer and shall pay the applicable sewer connection fee.

34. The Applicant shall make connection to the City's water system through the existing water service connection unless otherwise approved by the City Engineer. The size, type, and location of the water service meter installation will also require approval from the City Engineer.

35. The Applicant shall obtain the appropriate permits from Civil Engineering for the placement of construction canopies, fences, etc., for construction of any improvements in the public right-of-way, and for use of the public right-of-way for staging and/or hauling certain equipment and materials related to the Project.

36. The Applicant shall remove and reconstruct any existing improvements in the public right-of-way damaged during any construction operations associated with the Project.

37. Condensation from HVAC and refrigeration equipment shall drain to the sanitary sewer, not curb drains.

38. The Applicant shall submit a Construction Management Plan to the Departments of Building and Safety, Public Works, and Transportation for review and approval prior to issuance of a building permit. The Construction Management Plan shall include, at a minimum the following:

- a. Written information about the construction parking arrangements, and hauling activities at different stages of construction to be reviewed and approved by the Engineering Division of Public Works and the Building & Safety Department.

- b. Information regarding the anticipated number of workers, the location of parking with respect to schedules of the construction period, the arrangements of deliveries, hauling activities, the length of time of operation, designation of construction staging area and other pertaining information regarding construction related traffic.
- c. The proposed demolition/construction staging for this project to determine the amount, appropriate routes and time of day of heavy hauling truck traffic necessary for demolition, deliveries, etc., to the subject site.
- d. A sign shall be posted on the temporary construction fence with the name and contact information of the general contractor and construction supervisor during construction of the Project.
- e. No parking of construction vehicles or vehicles related to the construction of the Project in the alley during construction except pursuant to a permit issued by the City.

39. The Project shall be constructed in substantial compliance with the plans and specifications approved by the Planning Commission on July 14, 2016.

40. APPEAL. Decisions of the Planning Commission may be appealed to the City Council within fourteen (14) days of the Planning Commission action by filing a written appeal with the City Clerk. Appeal forms are available in

the City Clerk's office. Decisions involving subdivision maps must be appealed within ten (10) days of the Planning Commission Action. An appeal fee is required.

41. RECORDATION. The resolution approving a Conditional Use Permit and Minor Accommodation shall not become effective until the owner of the Project site records a covenant, satisfactory in form and content to the City Attorney, accepting the conditions of approval set forth in this resolution. The covenant shall include a copy of the resolution as an exhibit. The Applicant shall deliver the executed covenant to the Department of Community Development **within 60 days** of the Planning Commission decision. At the time that the Applicant delivers the covenant to the City, the Applicant shall also provide the City with all fees necessary to record the document with the County Recorder. If the Applicant fails to deliver the executed covenant within the required 60 days, this resolution approving the Project shall be **null and void** and of no further effect. Notwithstanding the foregoing, the Director of Community Development may, upon a request by the Applicant, grant a waiver from the 60-day time limit if, at the time of the request, the Director determines that there have been no substantial changes to any federal, state, or local law that would affect the Project.

42. EXPIRATION. Conditional Use Permit and Minor Accommodation: The exercise of rights granted in such approvals shall be commenced within three (3) years after the adoption of such resolution unless otherwise extended.

43. VIOLATION OF CONDITIONS: A violation of any of these conditions of approval may result in a termination of the entitlements granted herein.

44. This approval is for those plans submitted to the Planning Commission on July 14, 2016, a copy of which shall be maintained in the files of the City Planning Division. Project development shall be consistent with such plans, except as otherwise specified in these conditions of approval.

45. Minor amendments to the plans shall be subject to approval by the Director of Community Development. A significant change to the approved Project shall be subject to Planning Commission Review. Construction shall be in conformance with the plans approved herein or as modified by the Planning Commission or Director of Community Development.

46. Project Plans are subject to compliance with all applicable zoning regulations, except as may be expressly modified herein. Project plans shall be subject to a complete Code Compliance review when building plans are submitted for plan check. Compliance with all applicable Municipal Code and General Plan Policies is required prior to the issuance of a building permit.

47. APPROVAL RUNS WITH LAND. These conditions shall run with the land and shall remain in full force for the duration of the life of the Project.

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Section 11. The Secretary of the Planning Commission shall certify to the passage, approval, and adoption of this resolution, and shall cause this resolution and his/her Certification to be entered in the Book of Resolutions of the Planning Commission of the City.

Adopted: July 14, 2016

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Farshid Joe Shooshani  
Chair of the Planning Commission of the  
City of Beverly Hills, California

Attest:

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Secretary

Approved as to form:

Approved as to content:

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David M. Snow  
Assistant City Attorney

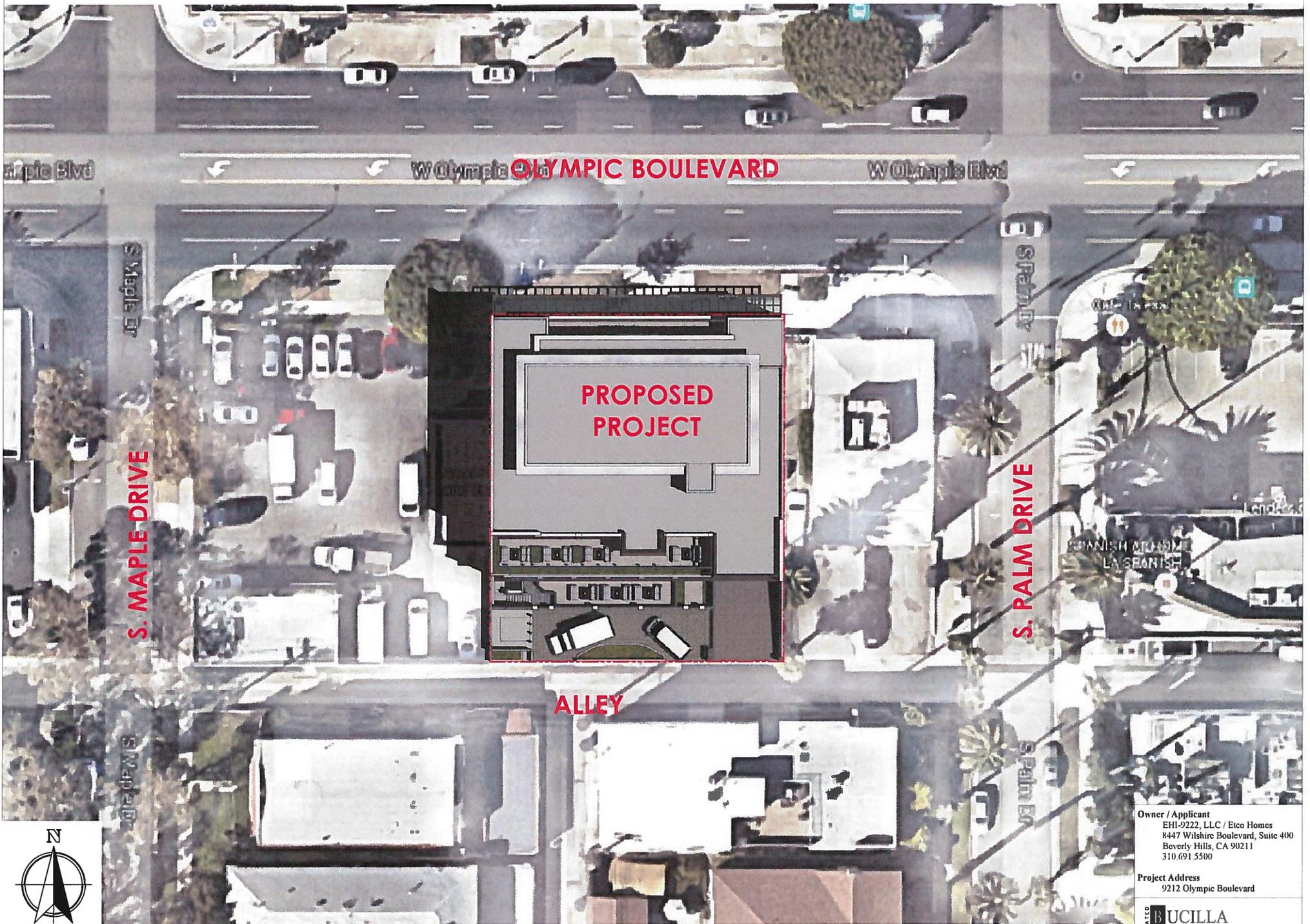
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Ryan Gohlich, AICP  
Assistant Director/City Planner  
Community Development Department



**Attachment C**

Shade and Shadow Study



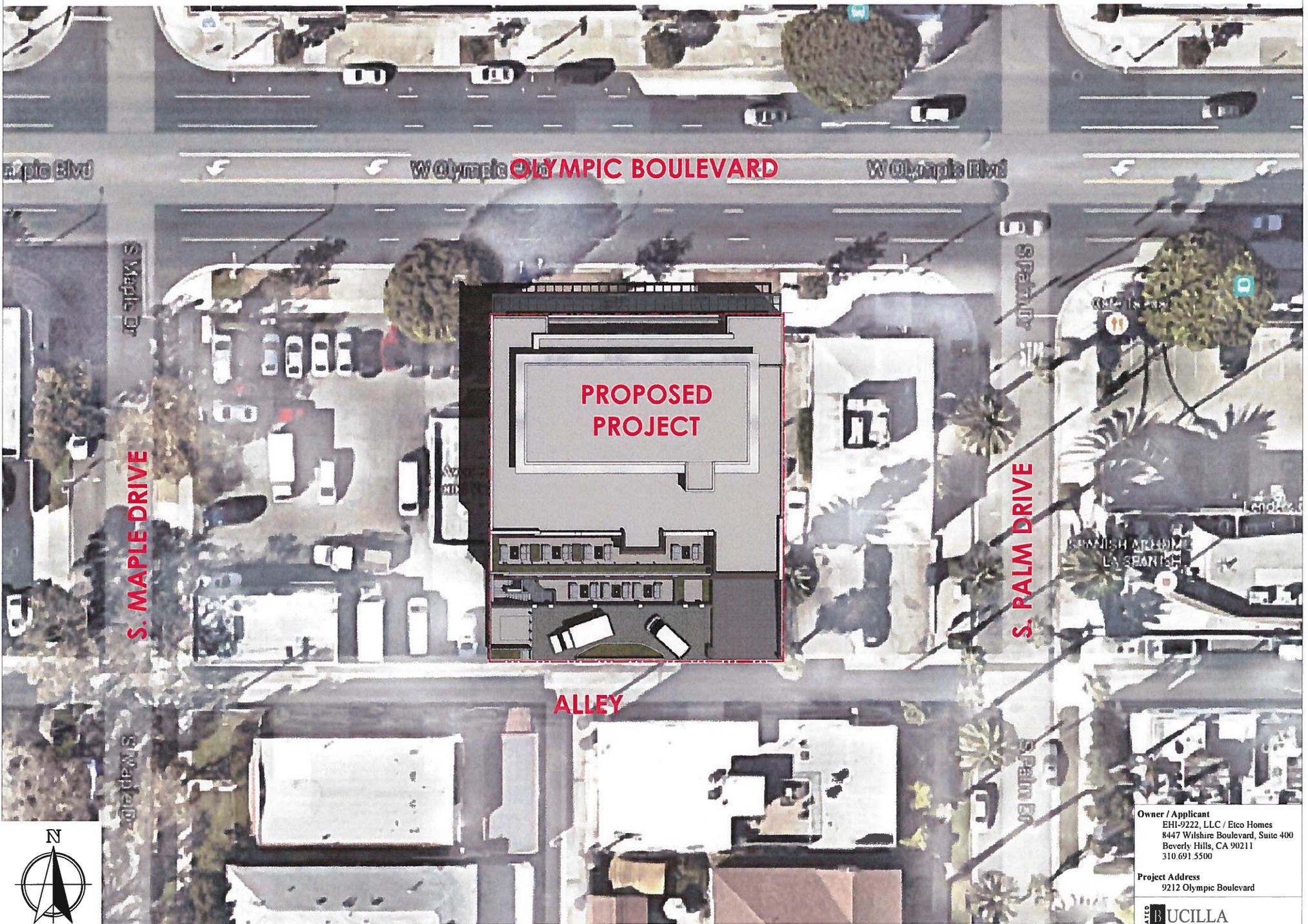
**SHADOW STUDY ( PROPOSED)**

**SUMMER SOLSTICE 10:00 AM**

Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

Project Address  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING



**SHADOW STUDY ( PROPOSED)**

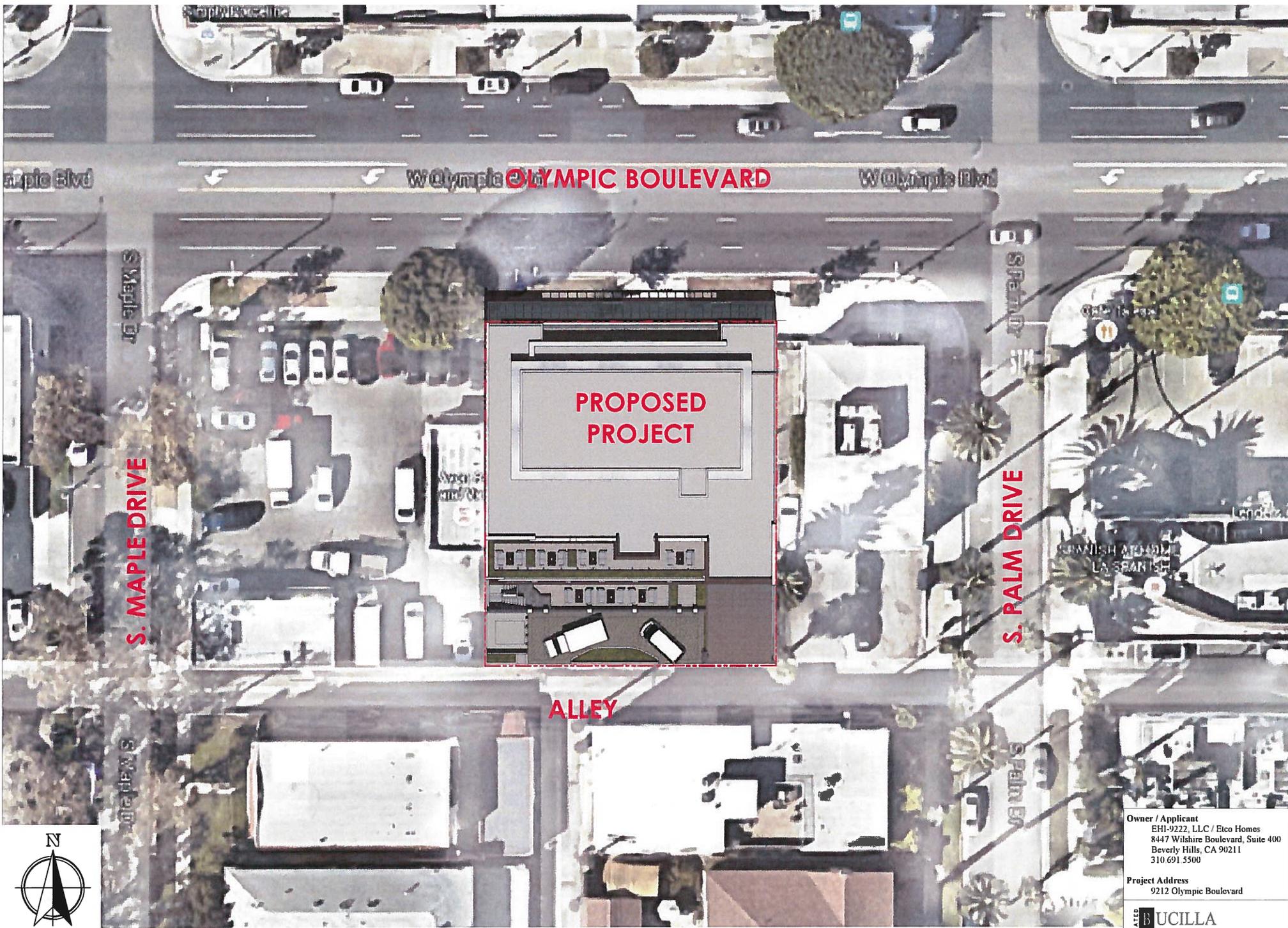
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**11:00 AM**

Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

Project Address  
9212 Olympic Boulevard

**BUCILLA**  
**GROUP**  
**ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEED VOUCHER ENGINEERING



**PROPOSED  
PROJECT**

**ALLEY**

**S. MAPLE DRIVE**

**S. PALM DRIVE**



**SHADOW STUDY ( PROPOSED)**

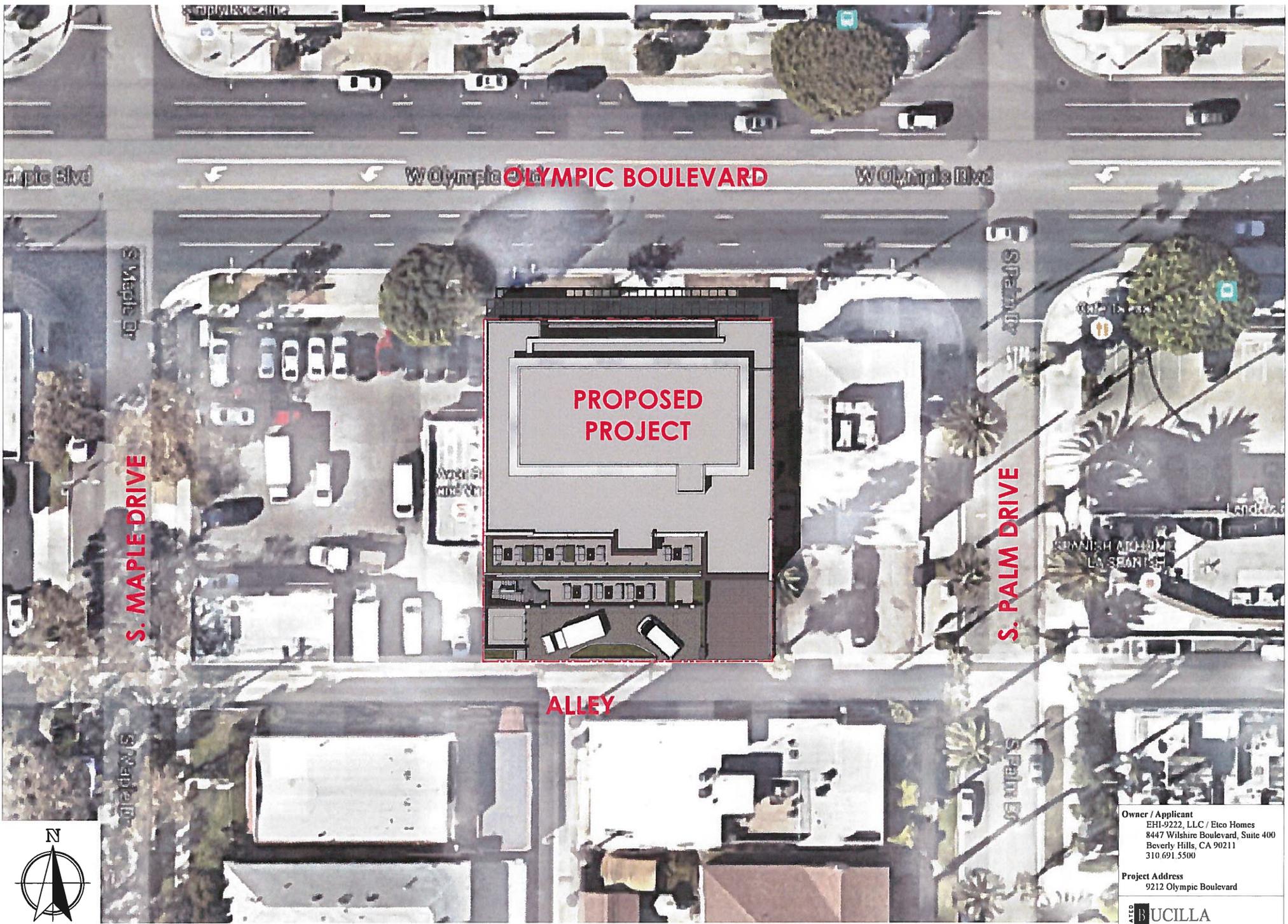
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**12:00 PM**

**Owner / Applicant**  
EHI-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA  
GROUP  
ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING



S. MAPLE DRIVE

S. PALM DRIVE

PROPOSED PROJECT

ALLEY

W OLYMPIC BOULEVARD



Owner / Applicant  
EHI-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

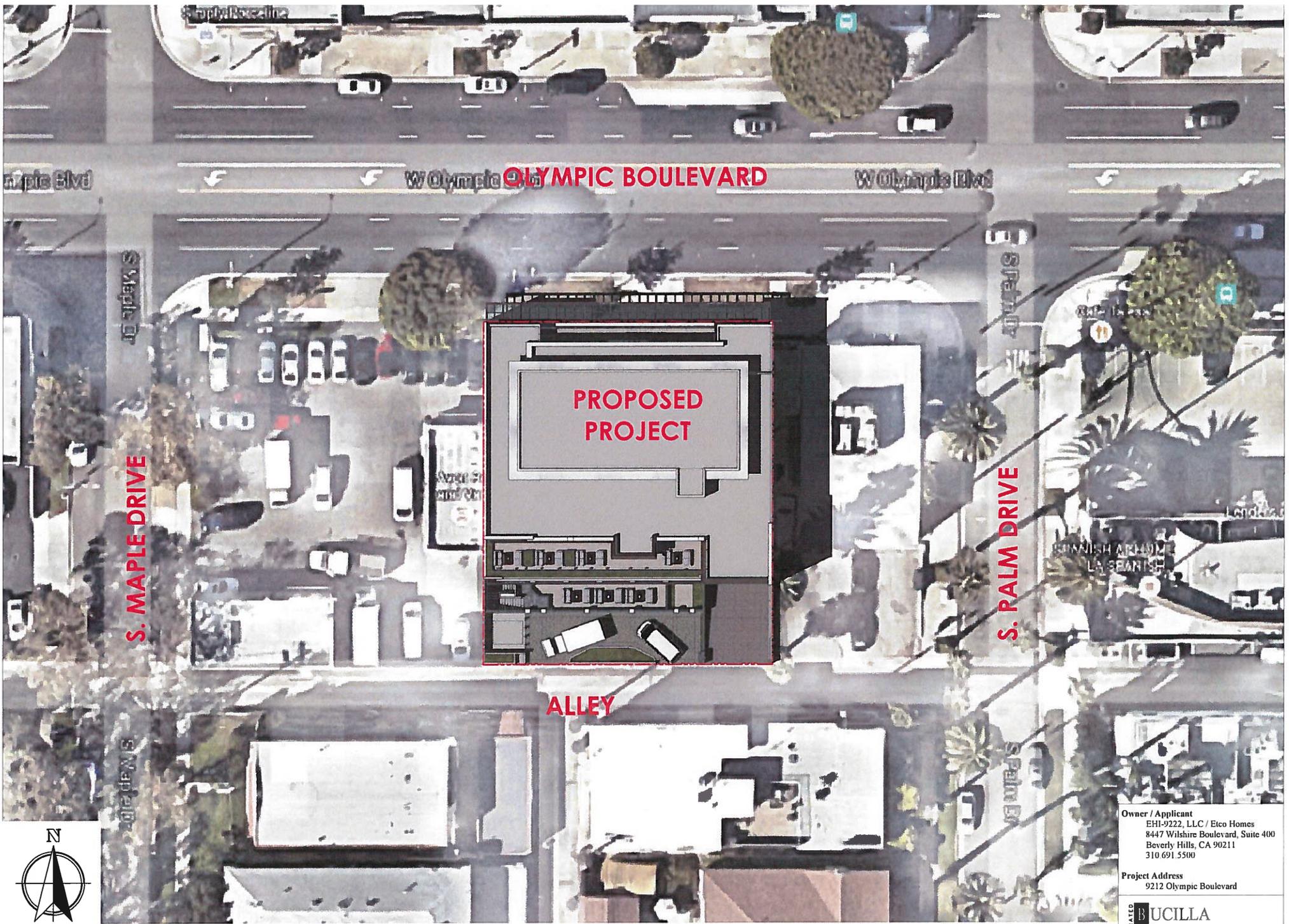
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INCORPORATED  
**BUCILLA**  
**GROUP**  
**ARCHITECTURE**  
ARCHITECTURAL PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING

SHADOW STUDY ( PROPOSED )

SUMMER SOLSTICE

1:00 PM



S. MAPLE DRIVE

S. PALM DRIVE

W OLYMPIC BLVD OLYMPIC BOULEVARD W OLYMPIC BLVD

PROPOSED PROJECT

ALLEY



Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

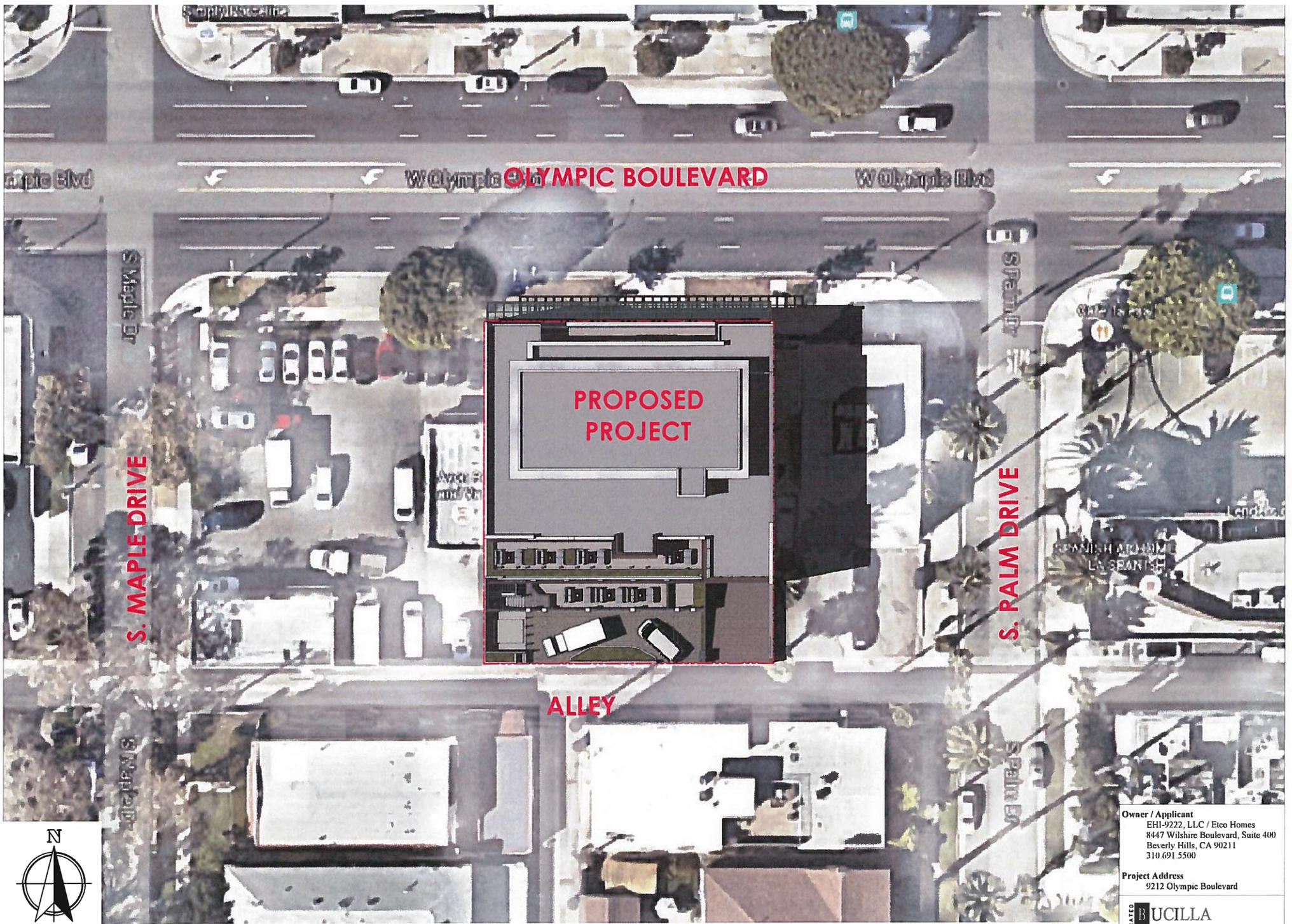
Project Address  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIORS  
HISTORIC PRESERVATION LANDSCAPE ARCHITECTURE

SHADOW STUDY ( PROPOSED)

SUMMER SOLSTICE

2:00 PM



**SHADOW STUDY ( PROPOSED)**

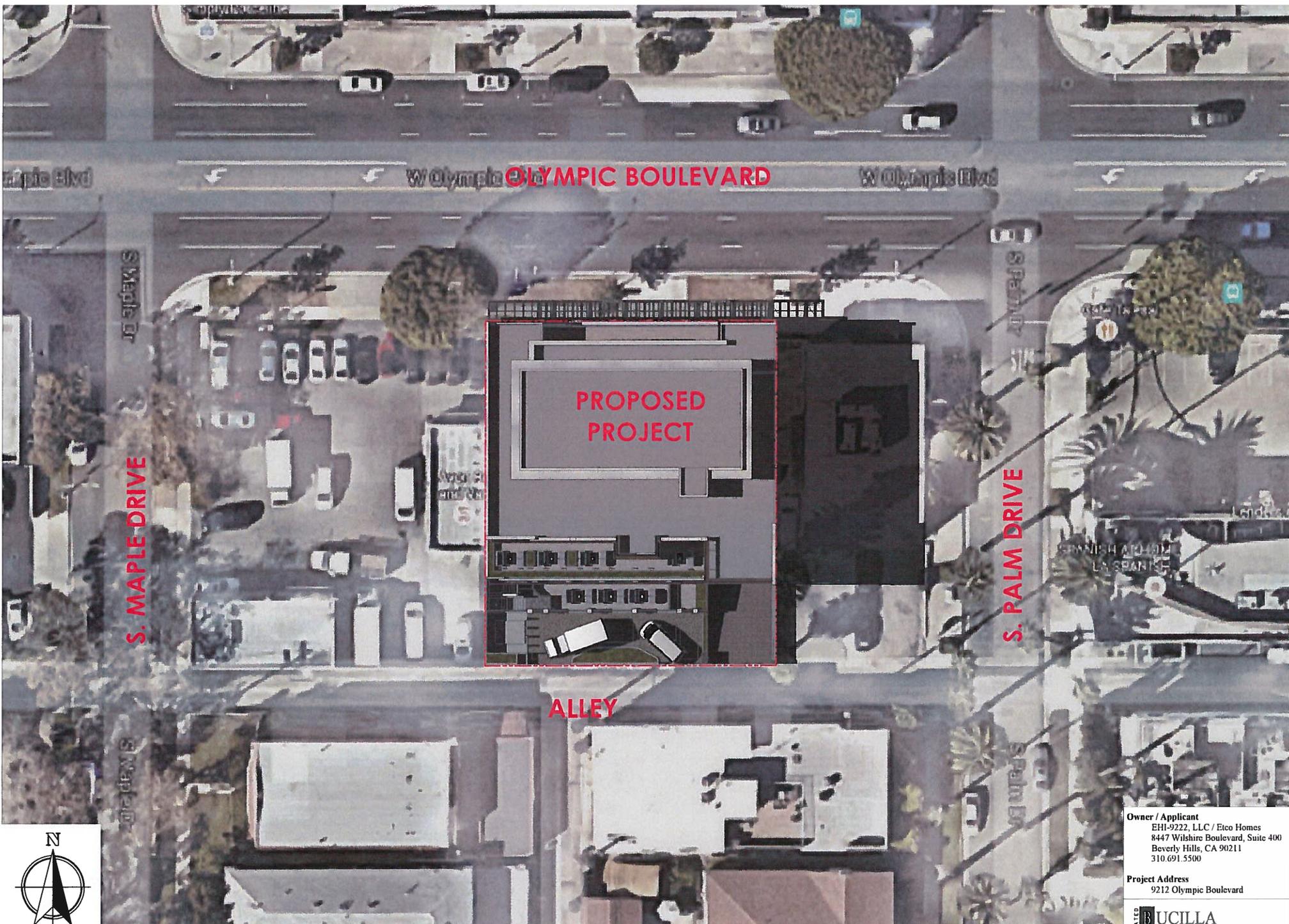
**SUMMER SOLSTICE**

**3:00 PM**

Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

Project Address  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VOUCHER DESIGNER



**SHADOW STUDY ( PROPOSED)**

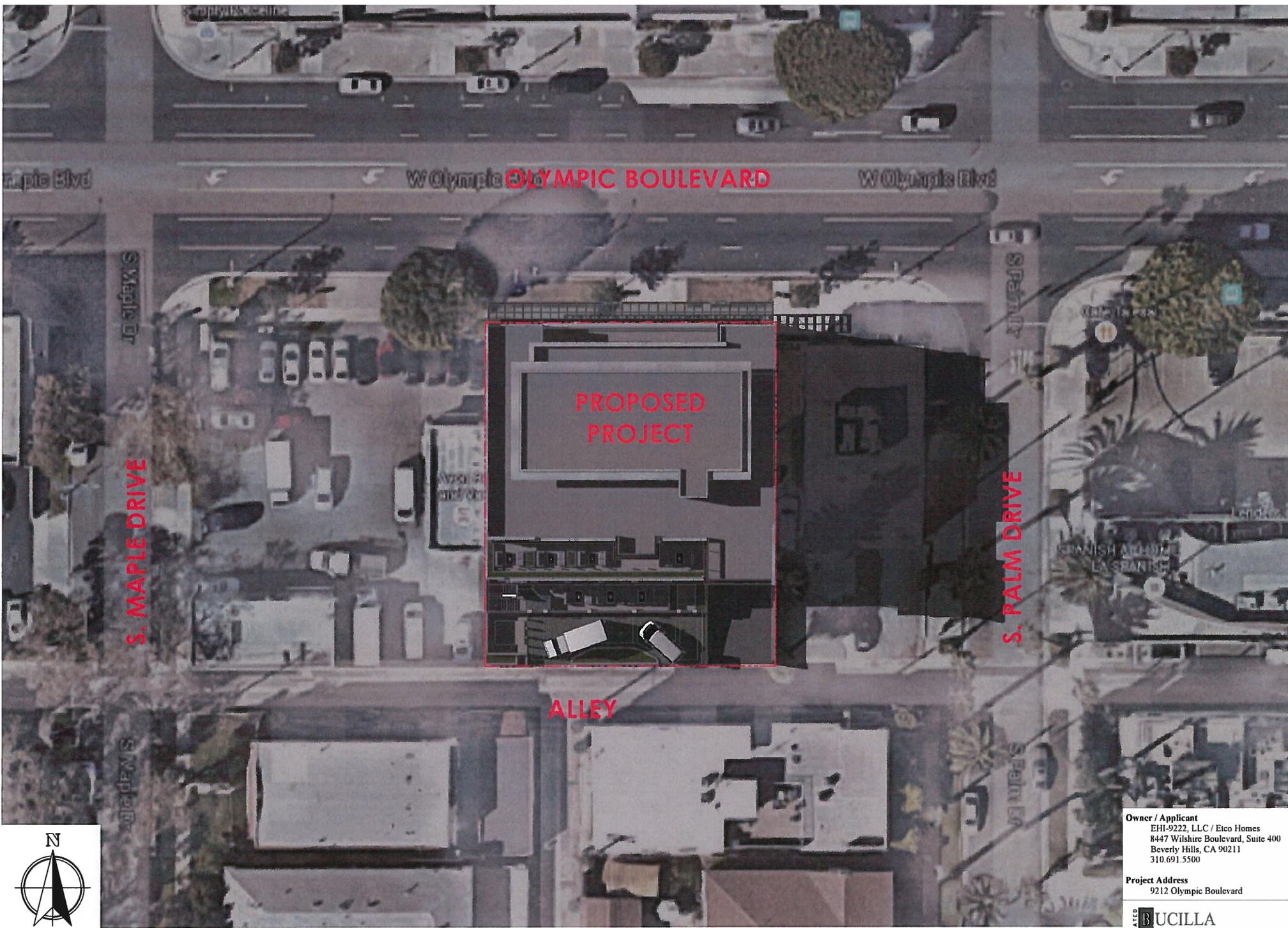
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**Owner / Applicant**  
EHI-9222, LLC / Elco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HAYATUK MESAVERAN LIZO VALDEZ-DANIELSON



**SHADOW STUDY ( PROPOSED)**

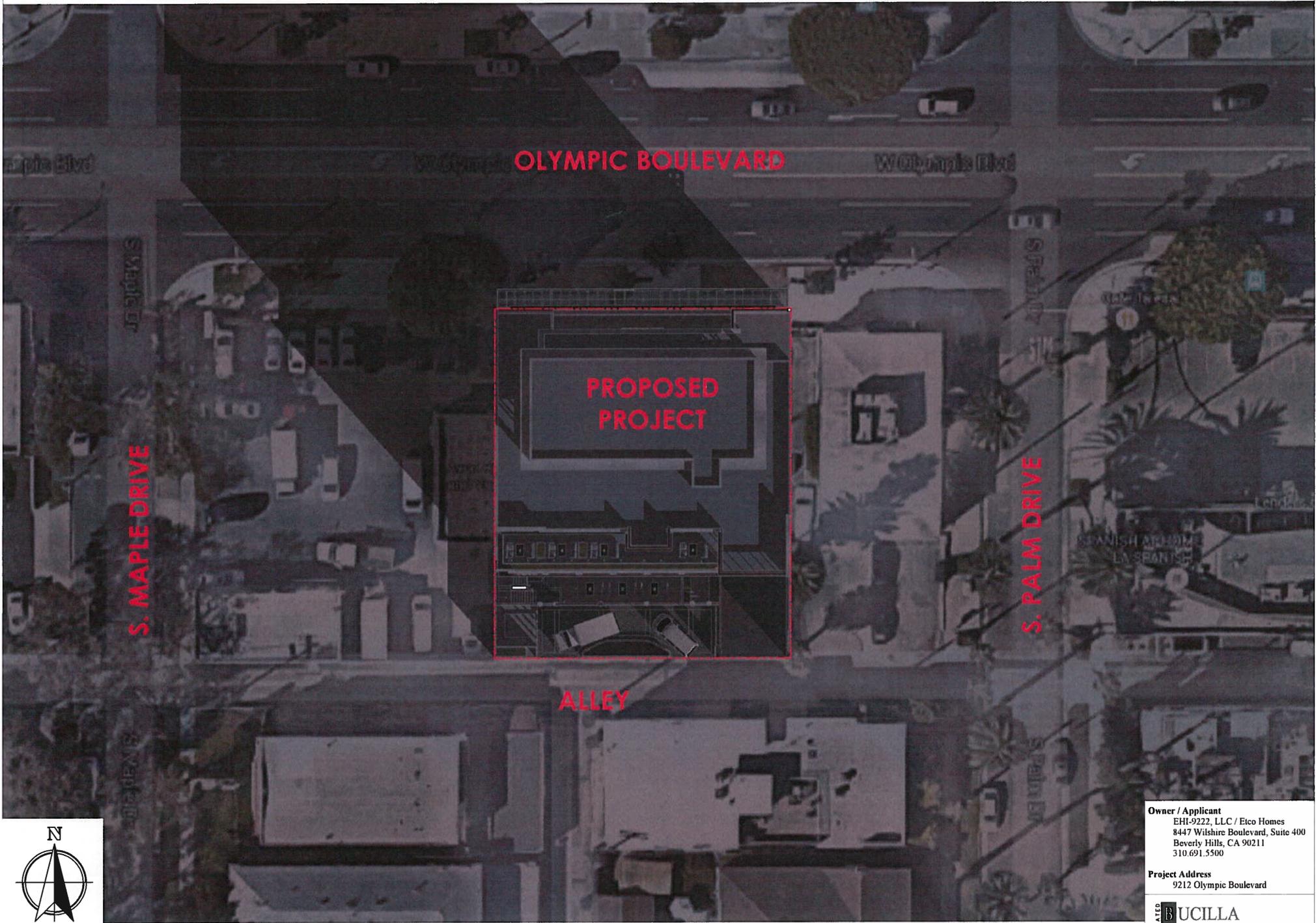
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**Owner / Applicant**  
EHI-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEED VOUCHER DESIGNING



OLYMPIC BOULEVARD

S. MAPLE DRIVE

S. PALM DRIVE

PROPOSED PROJECT

ALLEY



Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

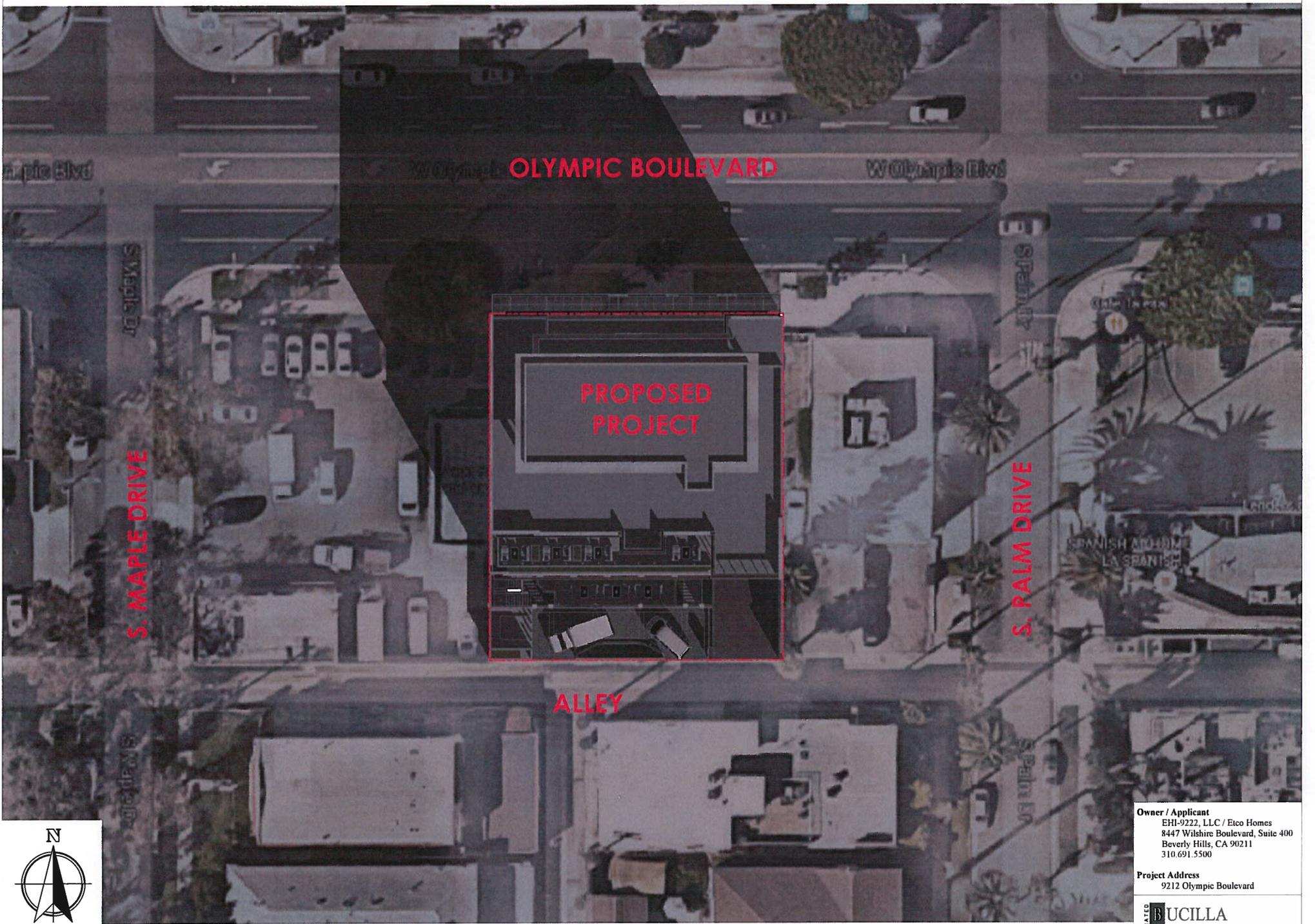
Project Address  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INTEGRATED ARCHITECTURE PLANNING INTERIOR DESIGN HISTORIC PRESERVATION LEED WALESDENFERRING

SHADOW STUDY ( PROPOSED)

WINTER SOLSTICE

9:00 AM



**SHADOW STUDY ( PROPOSED)**

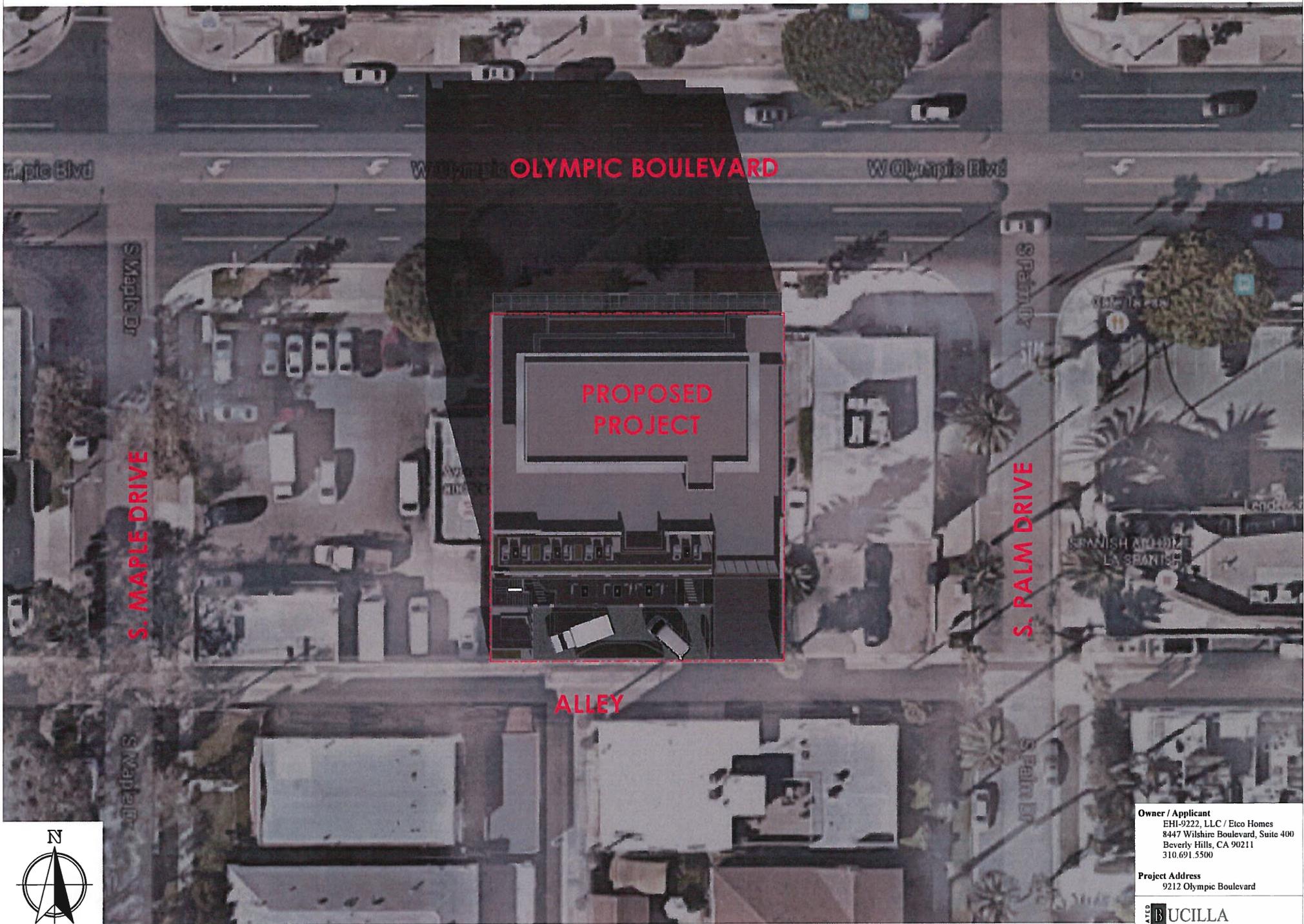
**WINTER SOLSTICE**

**10:00 AM**

**Owner / Applicant**  
EHI-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEED VOUCHER EXAMINERS



OLYMPIC BOULEVARD

S. MAPLE DRIVE

S. PALM DRIVE

PROPOSED PROJECT

ALLEY



Owner / Applicant  
EHI-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

Project Address  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURAL PLANNING INTERIORS DESIGN  
HISTORIC PRESERVATION LEED WELLNESS STRATEGY

SHADOW STUDY ( PROPOSED)

WINTER SOLSTICE

11:00 AM



OLYMPIC BOULEVARD

PROPOSED PROJECT

S. MAPLE DRIVE

S. PALM DRIVE

ALLEY



**Owner / Applicant**  
EHI-9222, LLC / Eteo Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

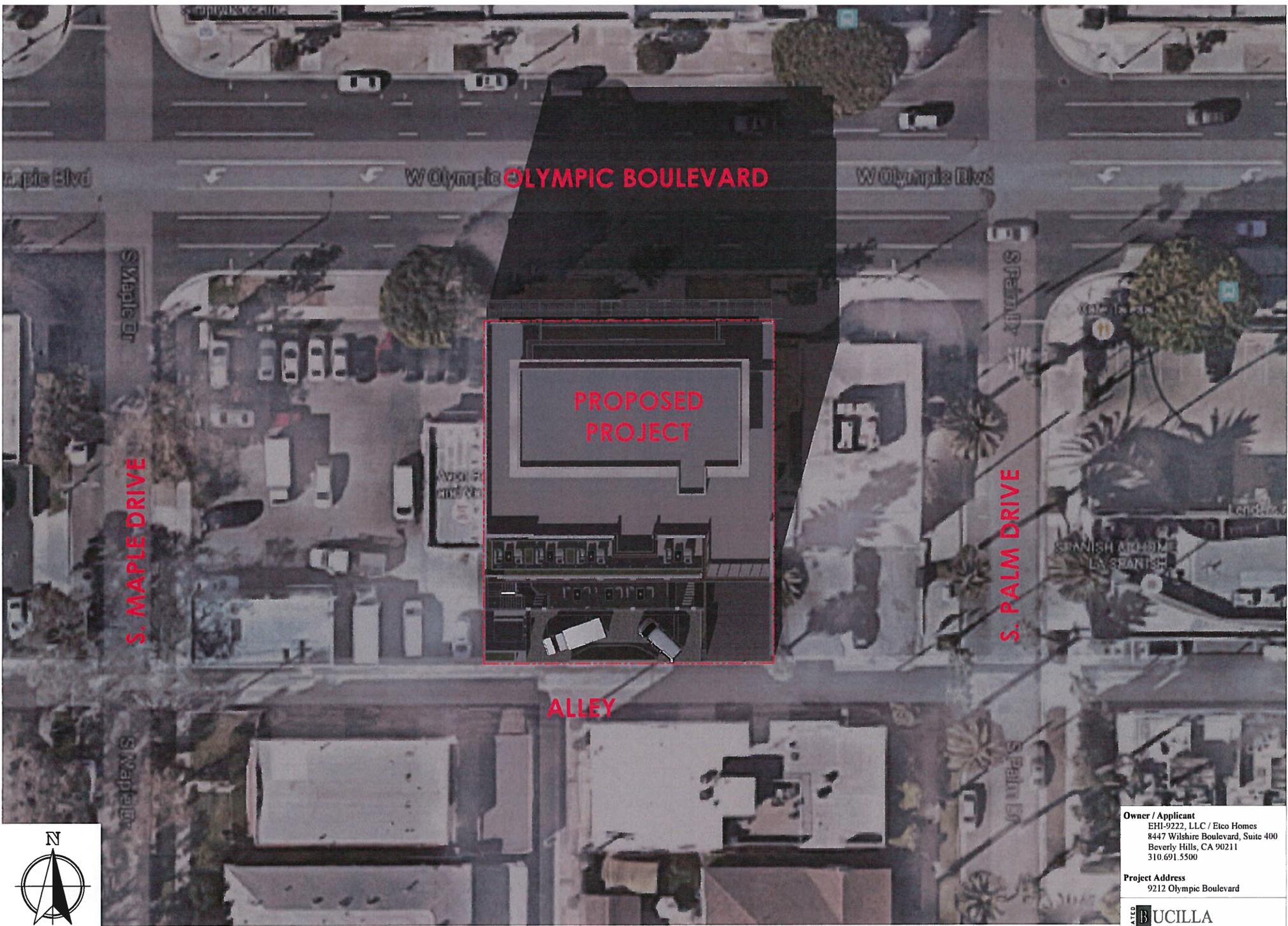
**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING

**SHADOW STUDY ( PROPOSED )**

**WINTER SOLSTICE**

**12:00 PM**



**SHADOW STUDY ( PROPOSED)**

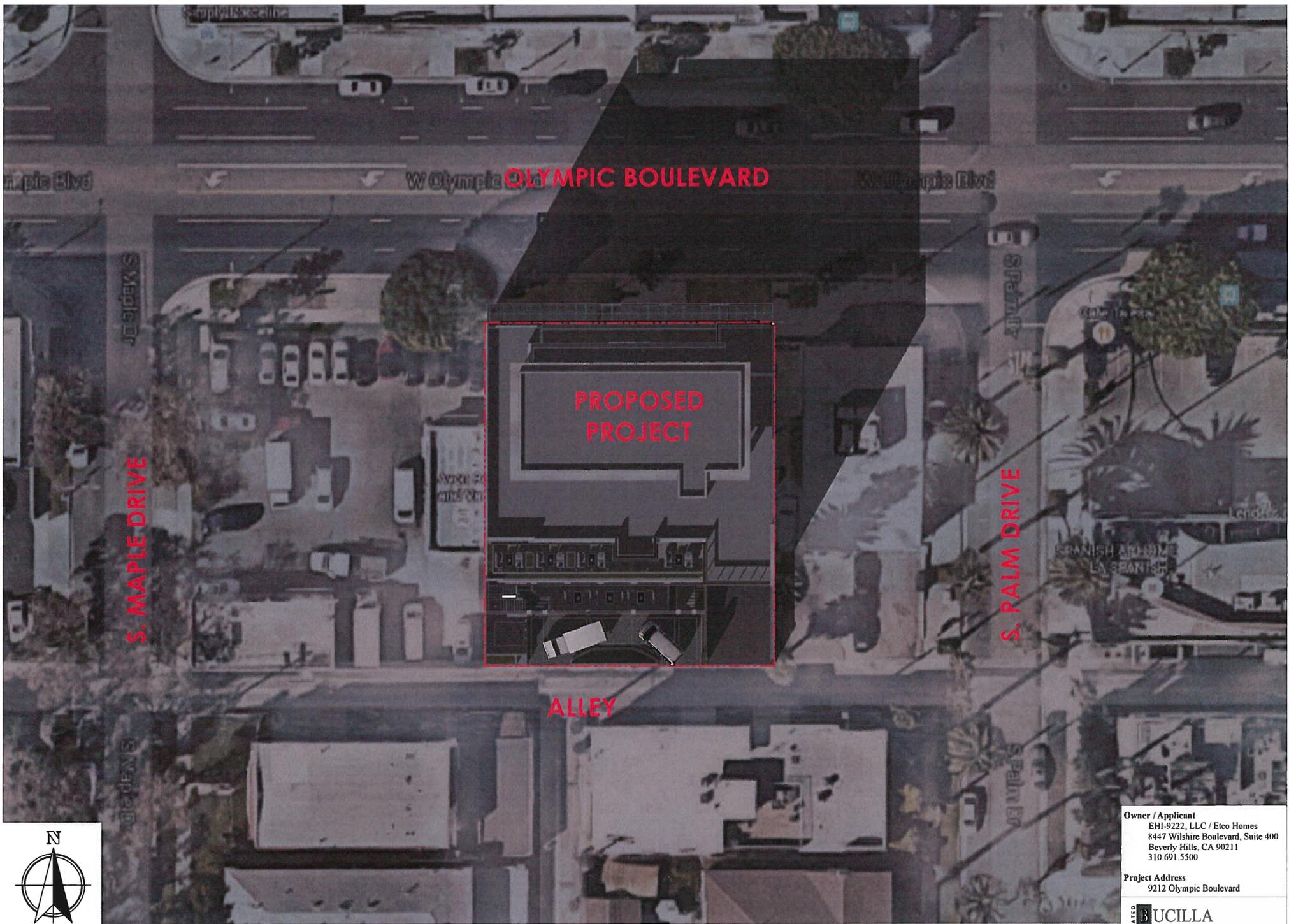
**WINTER SOLSTICE**

**1:00 PM**

**Owner / Applicant**  
EH1-9222, LLC / Etco Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING



**SHADOW STUDY ( PROPOSED)**

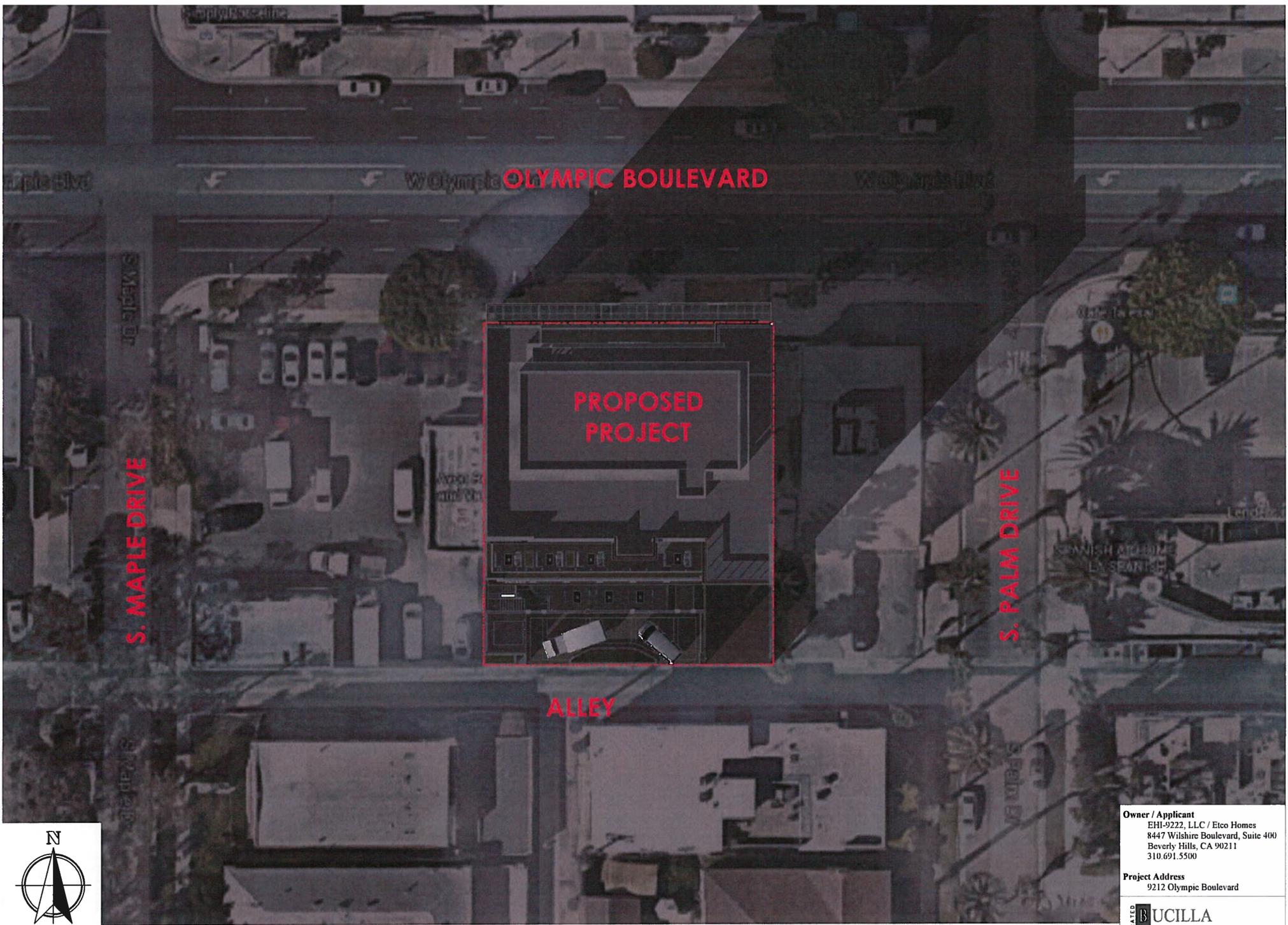
**WINTER SOLSTICE**

**2:00 PM**

**Owner / Applicant**  
EHI-9222, LLC / Eteo Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310 691 5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INTEGRATED ARCHITECTURE PLANNING INTERIORS DESIGN  
HISTORIC PRESERVATION LEED VALUED ENGINEERING



OLYMPIC BOULEVARD

S. MAPLE DRIVE

S. PALM DRIVE

PROPOSED PROJECT

ALLEY



SHADOW STUDY ( PROPOSED)

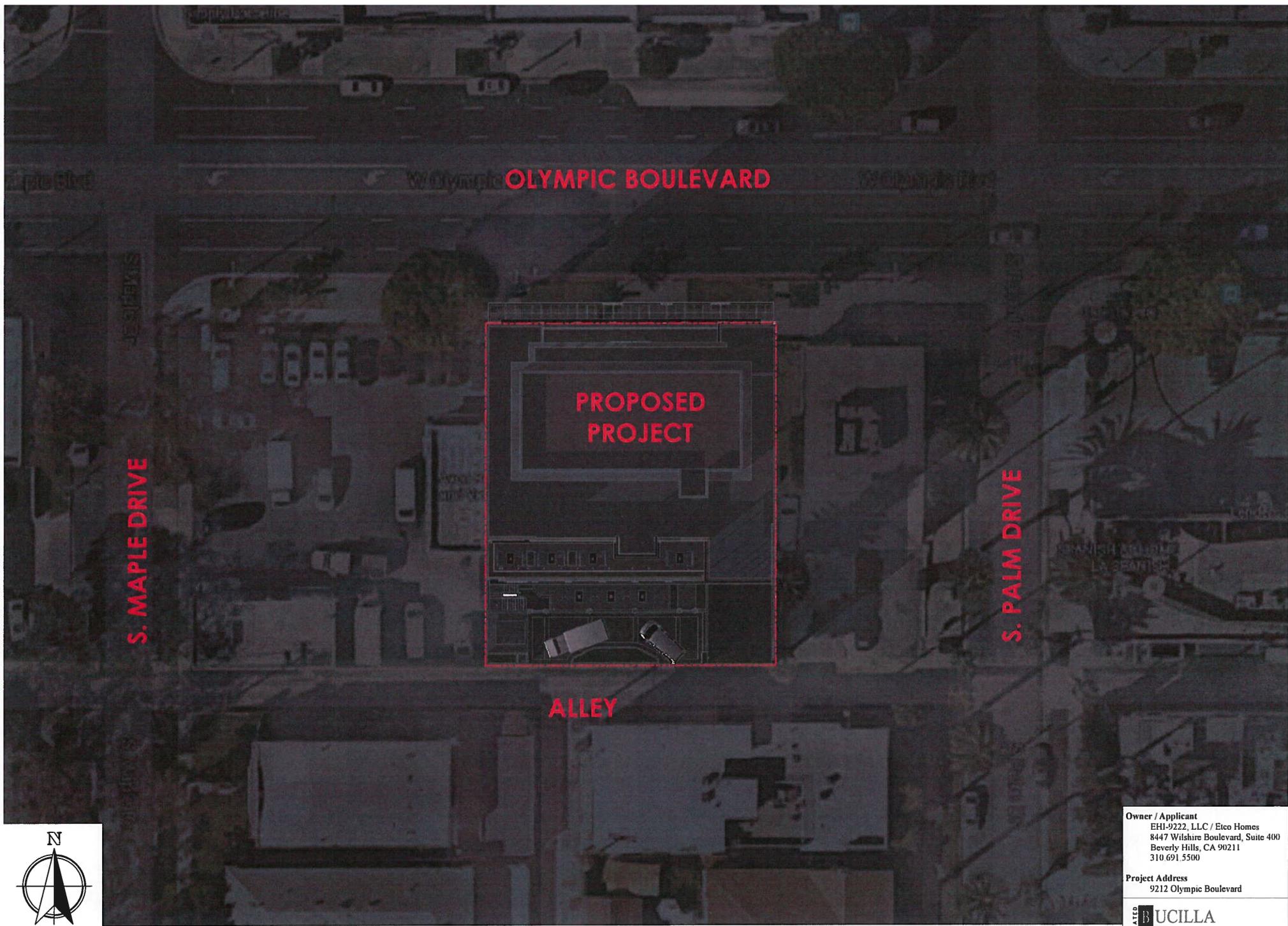
WINTER SOLSTICE

3:00 PM

**Owner / Applicant**  
EHI-9222, LLC / Eteo Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**INCORPORATED** **UCILLA**  
**GROUP**  
**ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING



**SHADOW STUDY ( PROPOSED)**

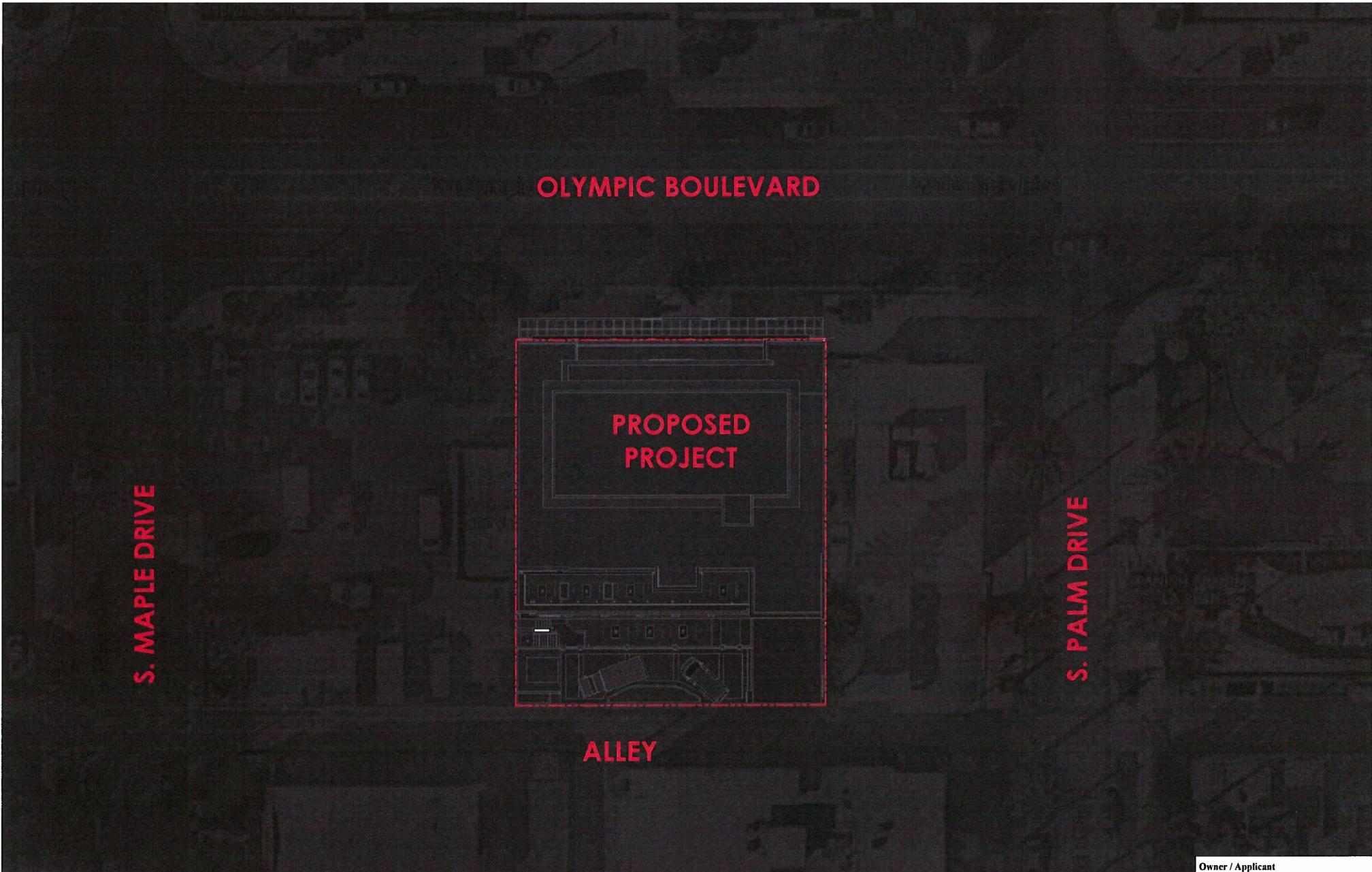
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**4:00 PM**

**Owner / Applicant**  
EH1-9222, LLC / Eteo Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310 691 5500

**Project Address**  
9212 Olympic Boulevard

**BUCILLA GROUP ARCHITECTURE**  
INCORPORATED  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEAD VALUE ENGINEERING



**SHADOW STUDY ( PROPOSED)**

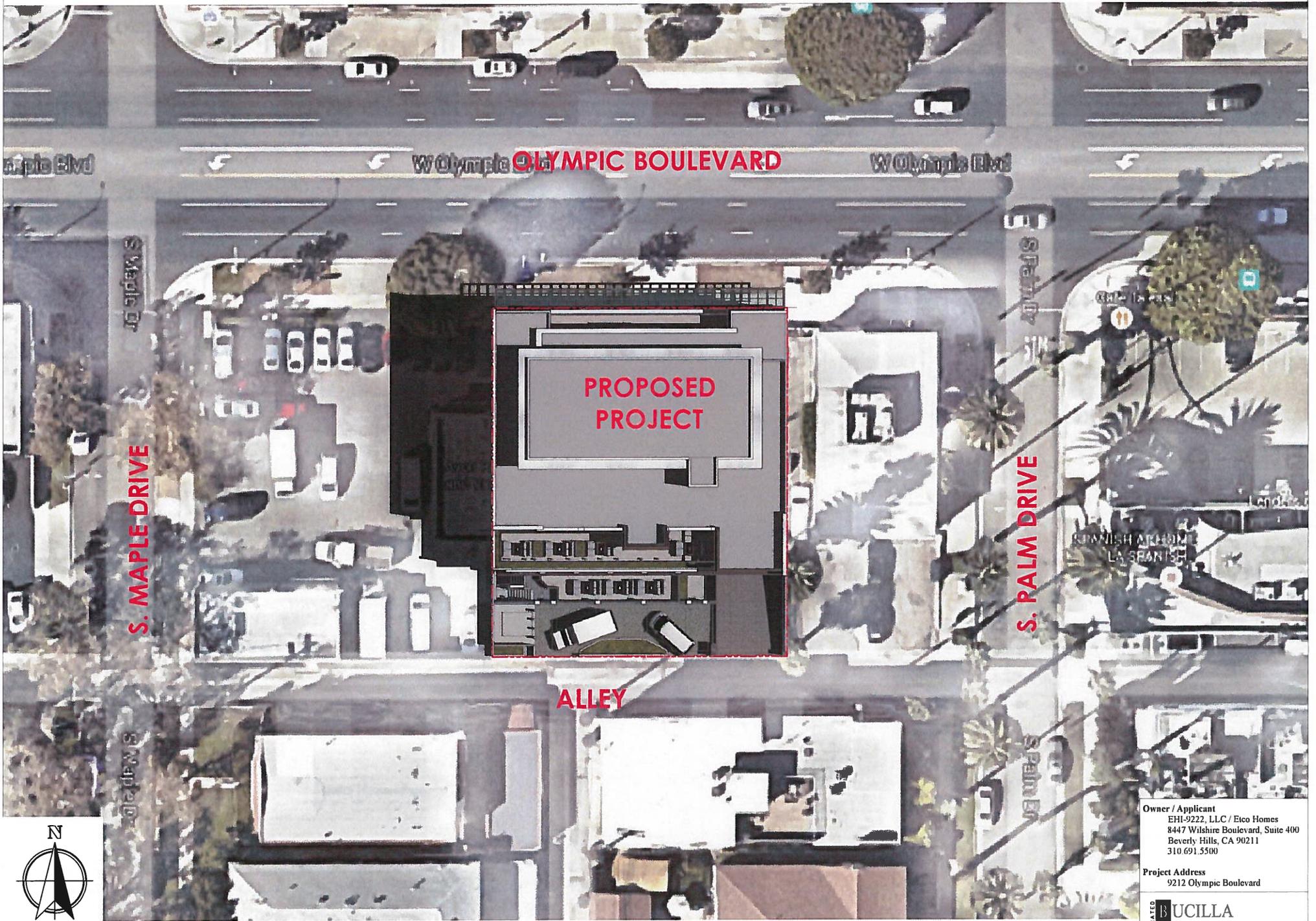
**WINTER SOLSTICE**

**5:00 PM**

**Owner / Applicant**  
EHI-9222, LLC / Eteo Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

**Project Address**  
9212 Olympic Boulevard

**INTEGRATED BUCILLA GROUP ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEED VALUATION ENGINEERING



SHADOW STUDY ( PROPOSED)

SUMMER SOLSTICE

9:00 AM

Owner / Applicant  
EHI-9222, LLC / Eico Homes  
8447 Wilshire Boulevard, Suite 400  
Beverly Hills, CA 90211  
310.691.5500

Project Address  
9212 Olympic Boulevard

INCORPORATED  
**UCILLA**  
**GROUP**  
**ARCHITECTURE**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HAYWARD PRESERVATION LAND VALUE ENHANCEMENT



**Attachment D**

Truck Specifications Sheet



**BUCILLA GROUP ARCHITECTURE, INC.**  
ARCHITECTURE PLANNING INTERIOR DESIGN  
HISTORIC PRESERVATION LEED VALUE ENGINEERING

**MEMO – Supplement Information for Traffic Study**

Date January 20, 2016  
Project 9212 Olympic  
RE: Delivery Van and Truck Types for Loading Zone



Fed Ex Van



FED EX 24' truck



Staples 20' Truck



Sparkletts Extended Van



Sparkletts 20' Truck



Safeway 20' Truck



Office Depot Van



USPS Truck



UPS 20' Truck

*Greg G. Bucilla III*

President  
BUCILLA GROUP ARCHITECTURE, INC.



19782 MacArthur Blvd., Suite 270, Irvine, California 92612 949.851.9080 FAX: 949.623.0084



**Attachment E**

Categorical Exemption

*City of Beverly Hills*

# **9212 Olympic Boulevard Project**

## **CEQA Class 32 Categorical Exemption Report**

**April 2016**



*Environmental Scientists Planners Engineers*

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# 9212 Olympic Boulevard Project

## CEQA Class 32 Categorical Exemption Report

*Prepared by:*

**City of Beverly Hills**  
Planning Division, Department of Community Development  
455 North Rexford Drive  
Beverly Hills, California 90210  
Contact: Timmi Tway, Associate Planner

*Prepared with the assistance of:*

**Rincon Consultants, Inc.**  
180 North Ashwood Avenue  
Ventura, California 93003

*April 2016*

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**City of Beverly Hills**  
**9212 Olympic Boulevard Project**  
**CEQA Class 32 Categorical Exemption Report**

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## CATEGORICAL EXEMPTION REPORT

This report serves as the technical documentation of an environmental analysis performed by Rincon Consultants, Inc., for the proposed 9212 Olympic Boulevard commercial building in the City of Beverly Hills. The intent of the analysis is to document whether the project is eligible for a Class 32 Categorical Exemption (CE). The report provides an introduction, project description, and evaluation of the project's consistency with the requirements for a Class 32 exemption. This includes an analysis of the project's potential impacts in the areas of biological resources, traffic, air quality, noise, water quality, and historic resources. The report concludes that the project is eligible for a Class 32 CE.

### 1. INTRODUCTION

The California Environmental Quality Act (CEQA) states that a Class 32 CE is allowed when:

- (a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.*
- (b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.*
- (c) The project site has no value as habitat for endangered, rare or threatened species.*
- (d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.*
- (e) The site can be adequately served by all required utilities and public services.*

Additionally, State CEQA Guidelines Section 15300.2 states that a categorical exemption "shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource."

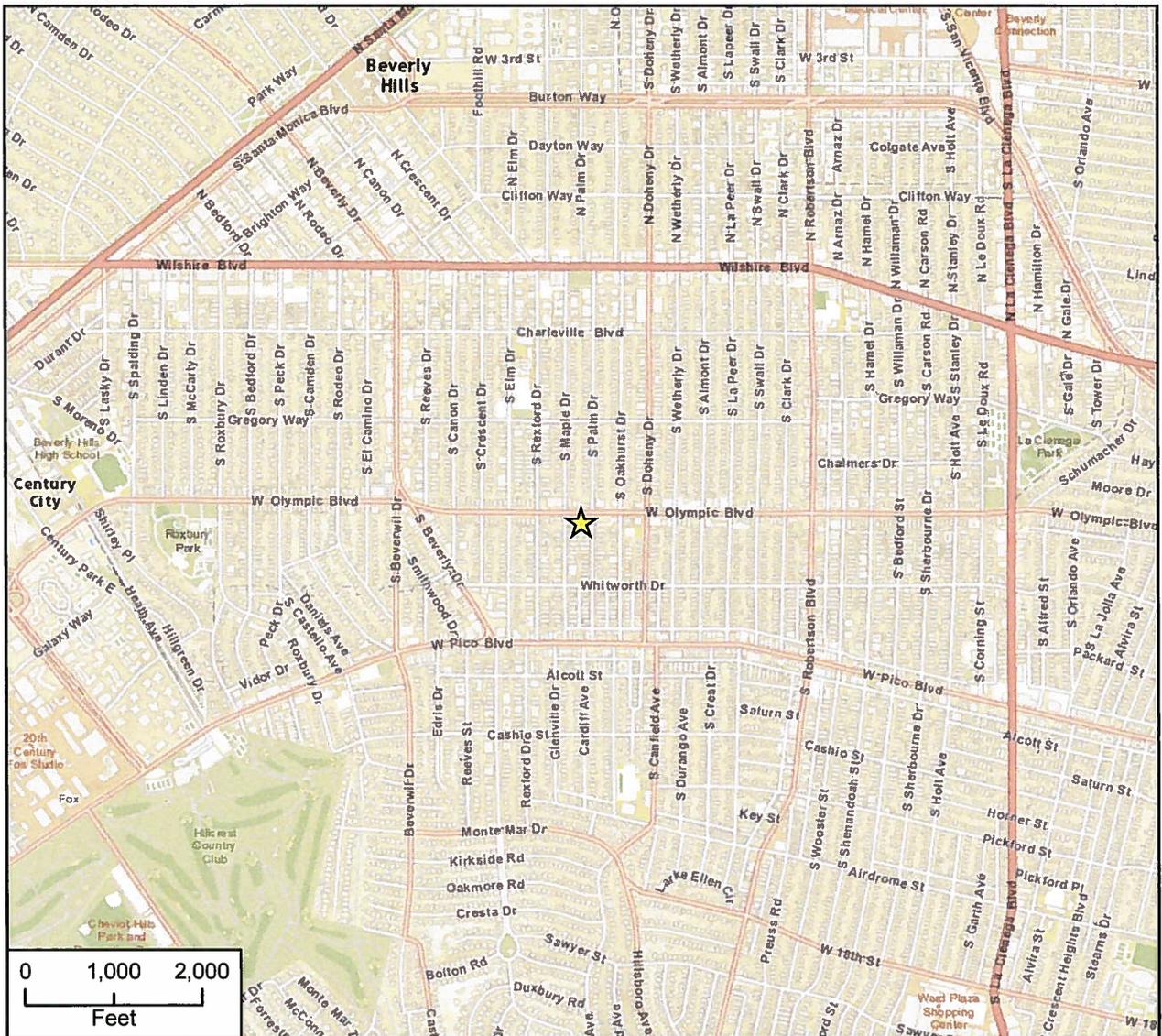
Rincon Consultants, Inc. evaluated the project's consistency with the above requirements, including its potential impacts in the areas of biological resources, traffic, noise, air quality, water quality, and historic resources to confirm the project's eligibility for the Class 32 exemption.

### 2. PROJECT DESCRIPTION

The proposed project would involve demolition of a surface parking lot, currently used by a rental car business, on two contiguous parcels and the construction of a 20,292 square-foot (sf) building with ground-floor retail/restaurant space, two levels of commercial office space, and three subterranean levels of parking totaling 35,250 sf in floor area. A courtyard would be present on the ground floor and the roof of the second story would have an outdoor patio. Figure 1 shows the location of the project site and Figures 2a through 2g show the proposed site plan and floor plans. Table 1 summarizes the characteristics of the proposed building.



9212 Olympic Boulevard Project  
 CEQA Class 32 Categorical Exemption Report



Imagery provided by Google and its licensors © 2016.

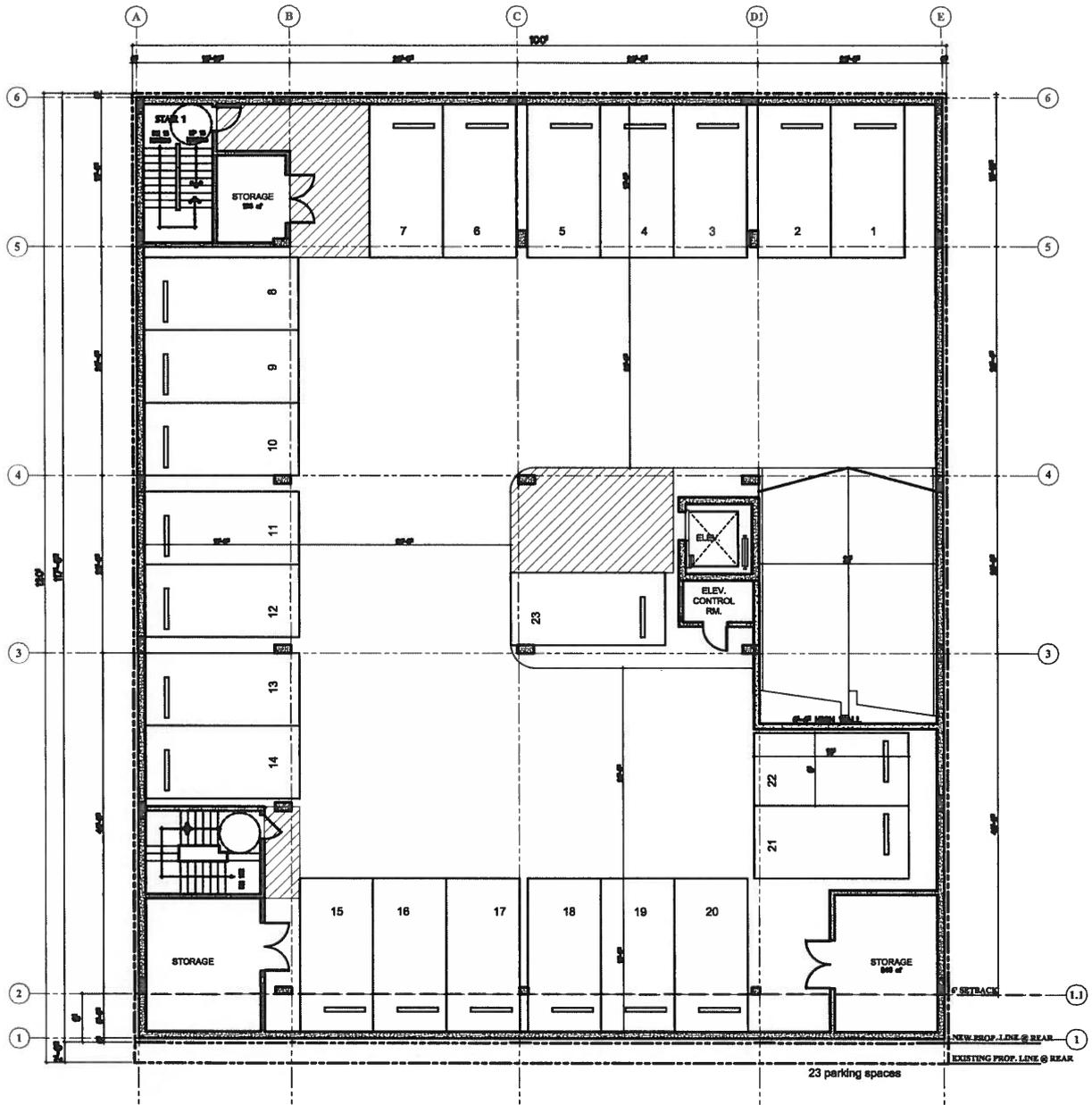
★ Project Location



Project Location

Figure 1  
 City of Beverly Hills

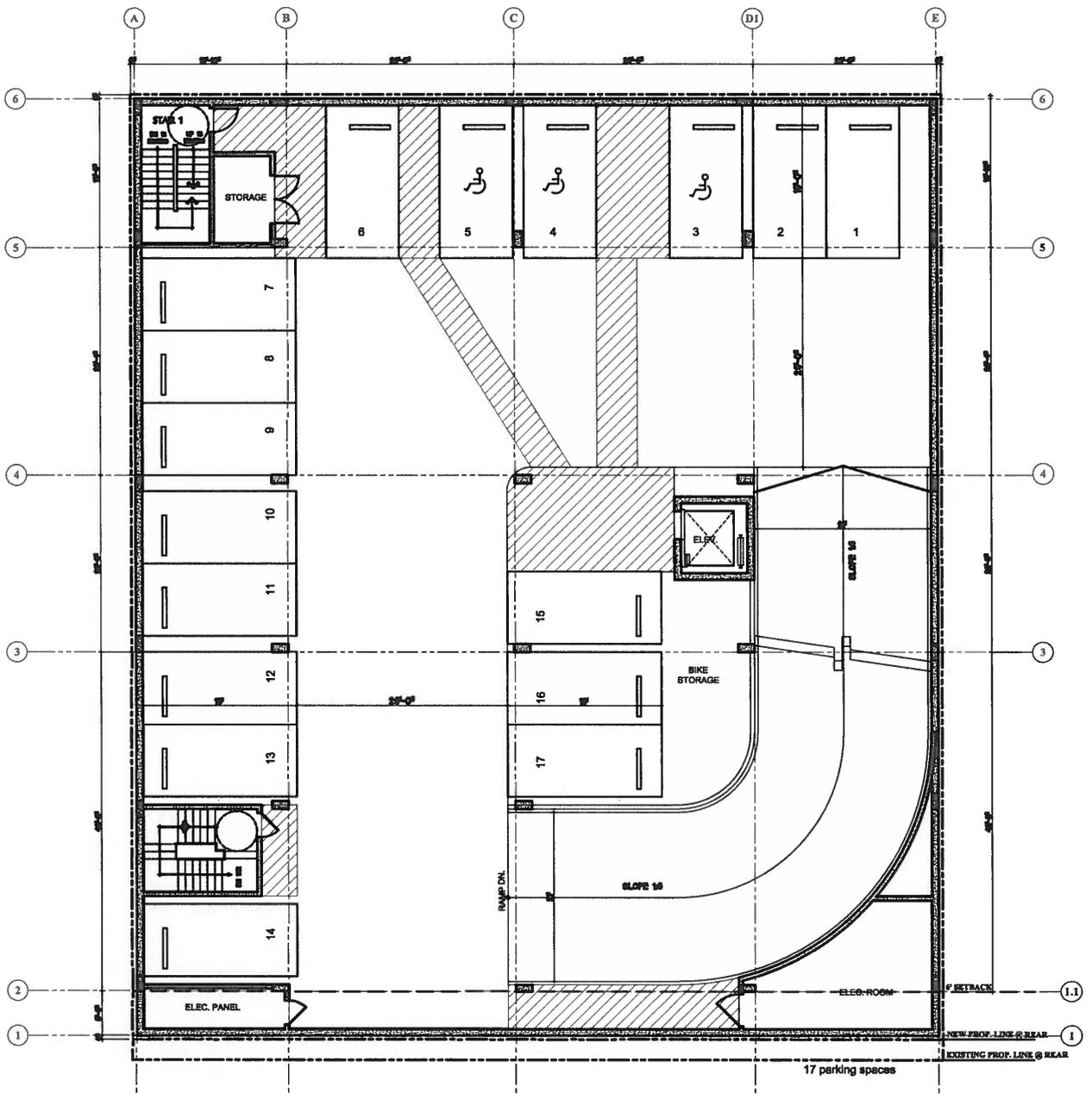




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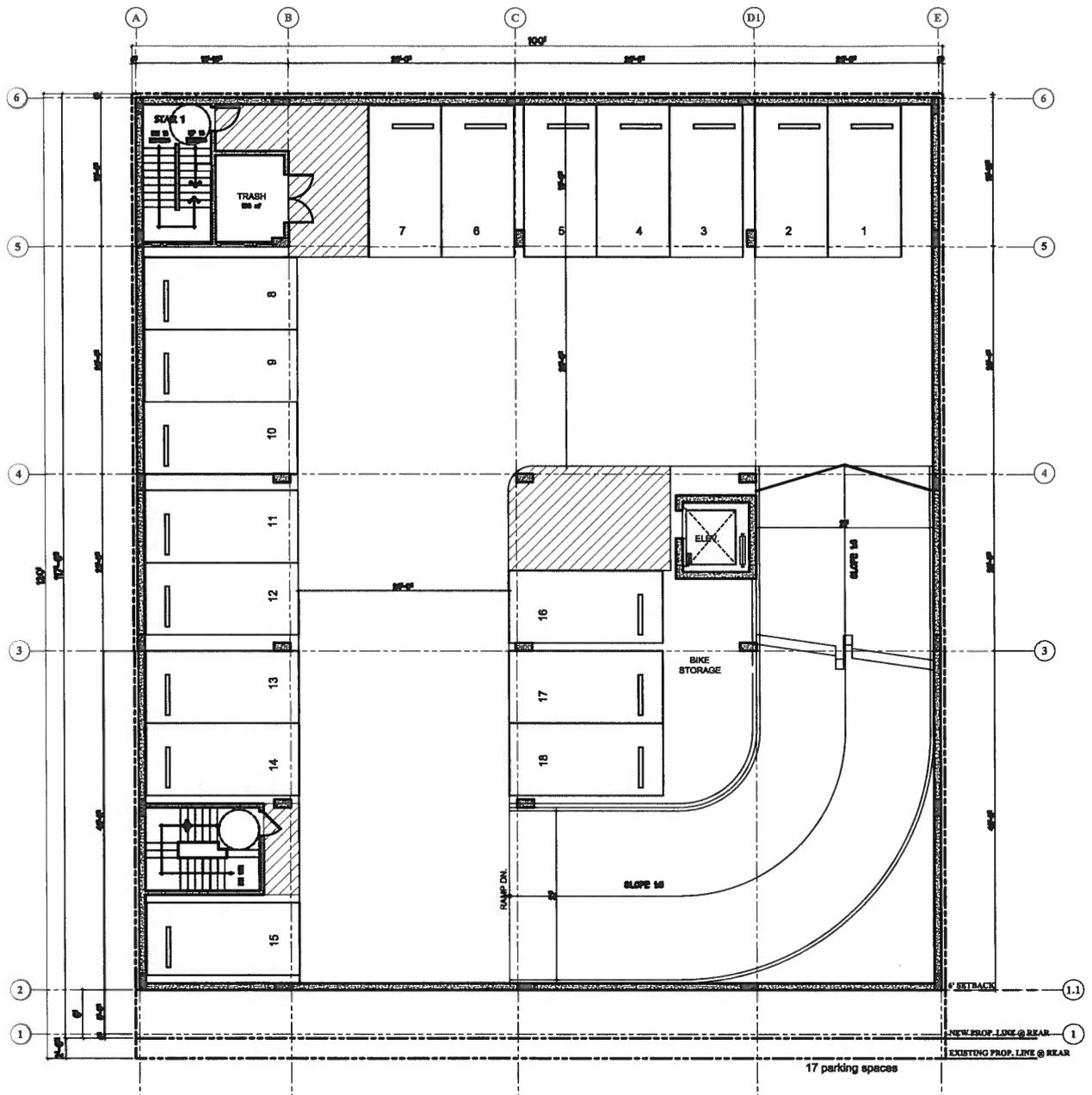
Standard (9' x 19') 23 Spaces





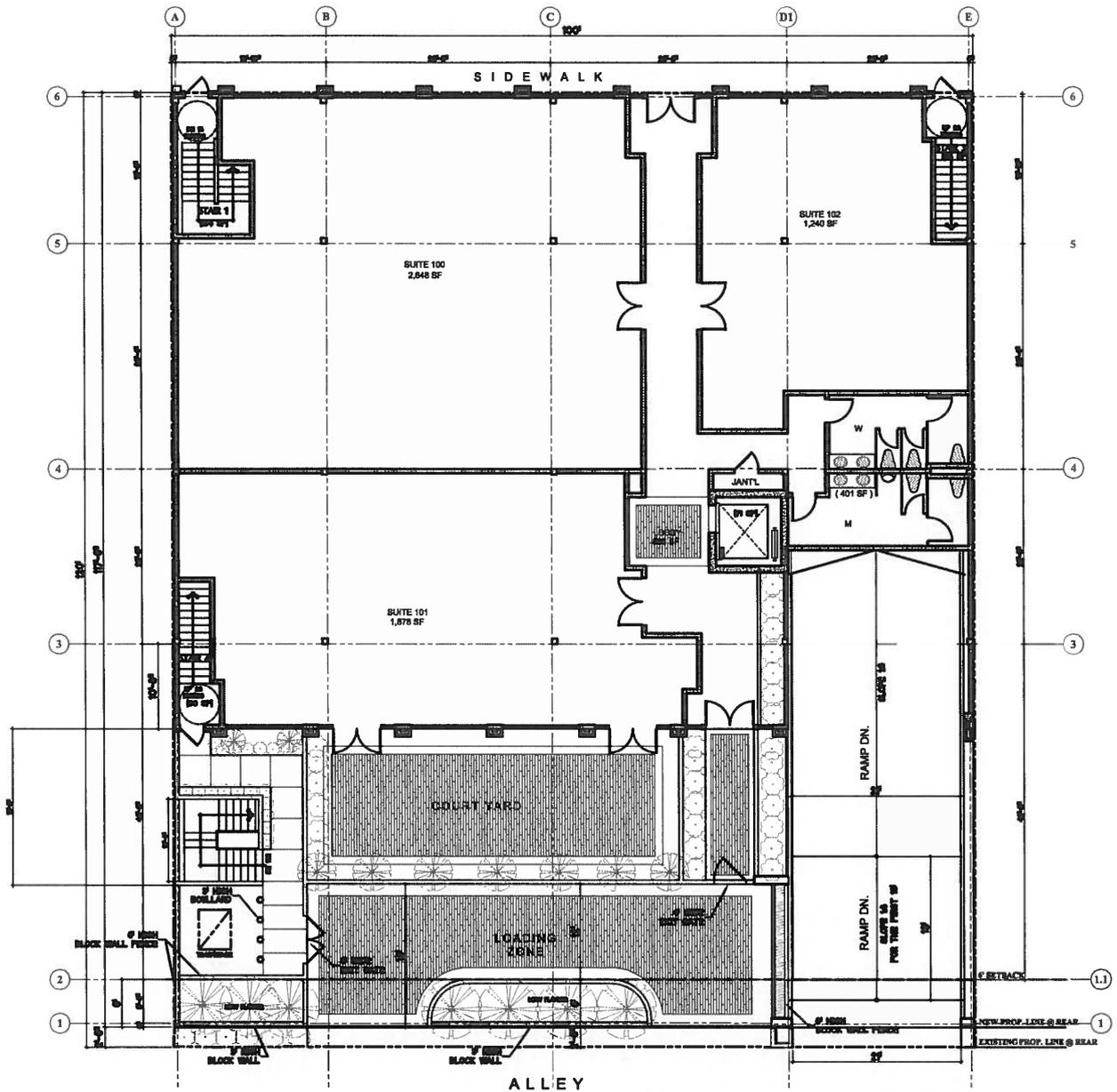
**PARKING**

|                        |                  |
|------------------------|------------------|
| Standard (9' x 19')    | 14 Spaces        |
| Handicapped (9' x 19') | 3 Spaces         |
| <b>Total:</b>          | <b>17 Spaces</b> |



**PARKING**

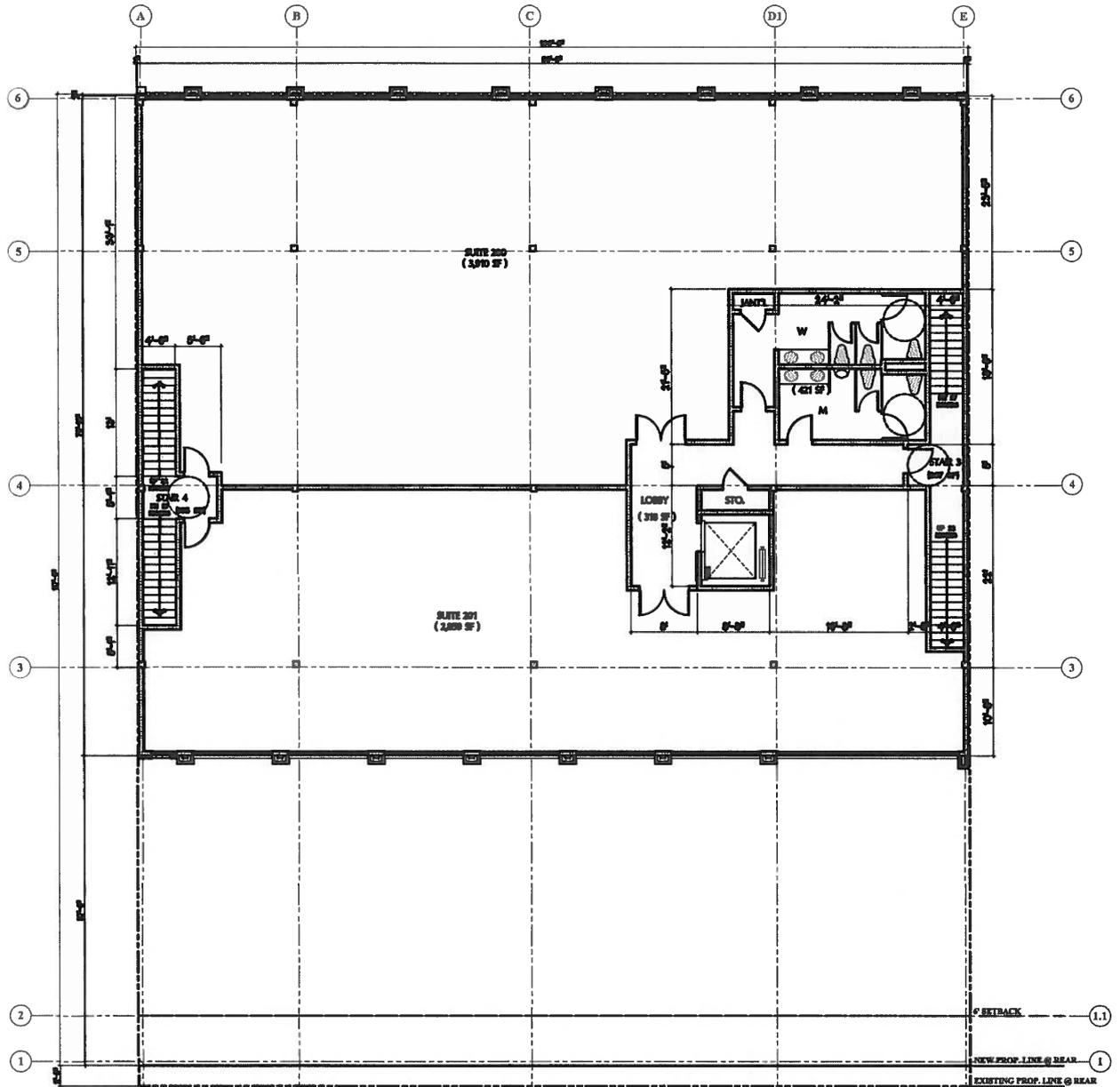
Standard (9' x 19')      18 Spaces

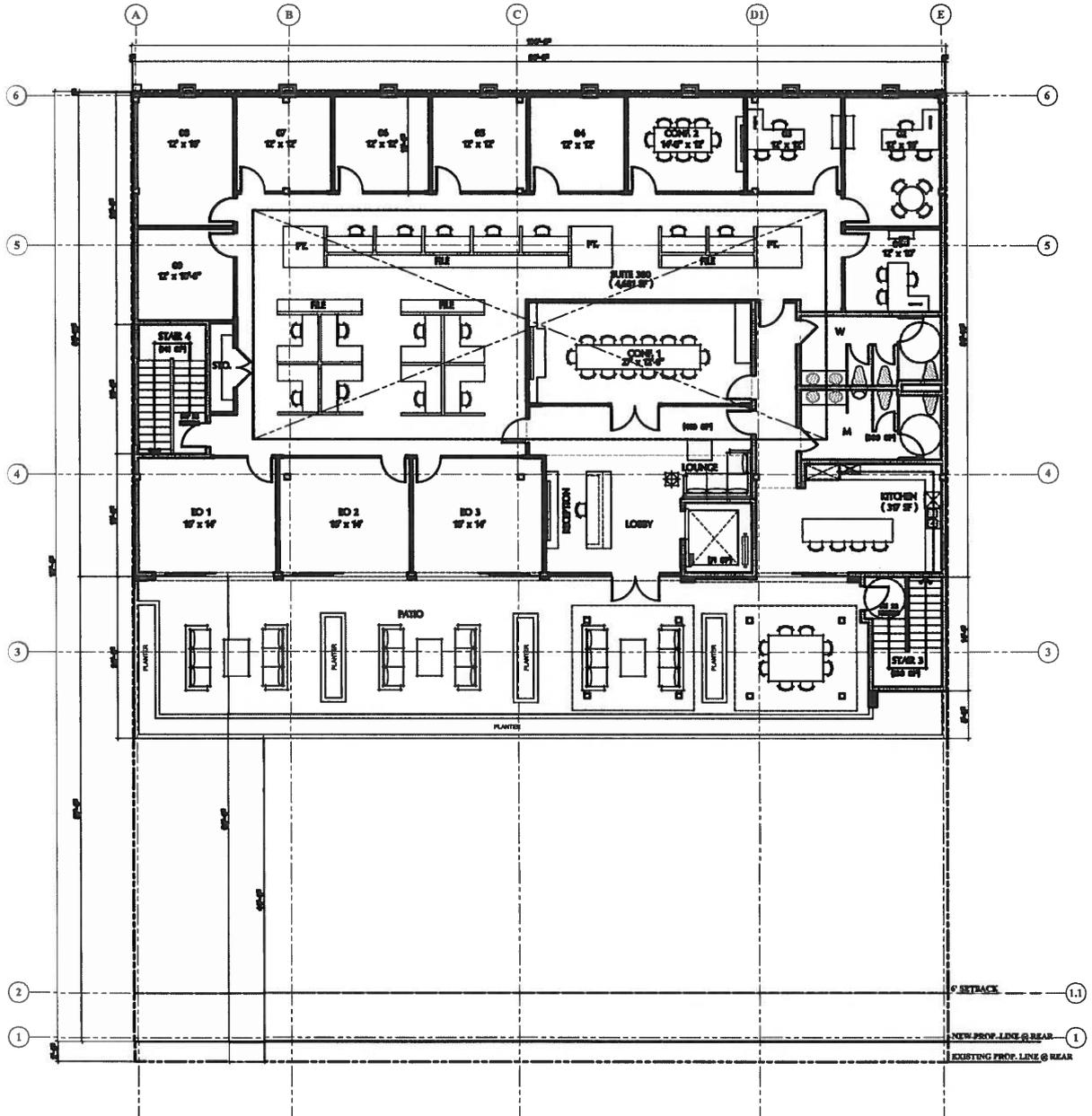


| BUILDING SF  |                 |                 |
|--------------|-----------------|-----------------|
| LEVEL 1      | GROSS           | NET             |
| SUITE 100    | 2,648 SF        | 2,648 SF        |
| SUITE 101    | 1,878 SF        | 1,878 SF        |
| SUITE 102    | 1,240 SF        | 1,240 SF        |
| SERVICE AREA |                 |                 |
| LOBBY        | 886 SF          | 886 SF          |
| ELEV.        | 71 SF           |                 |
| RESTROOM     | 401 SF          | 401 SF          |
| STAIR 1      | 134 SF          |                 |
| STAIR 3      | 88 SF           |                 |
| STAIR 4      | 90 SF           |                 |
| <b>TOTAL</b> | <b>7,436 SF</b> | <b>7,053 SF</b> |

Ground Floor Plan

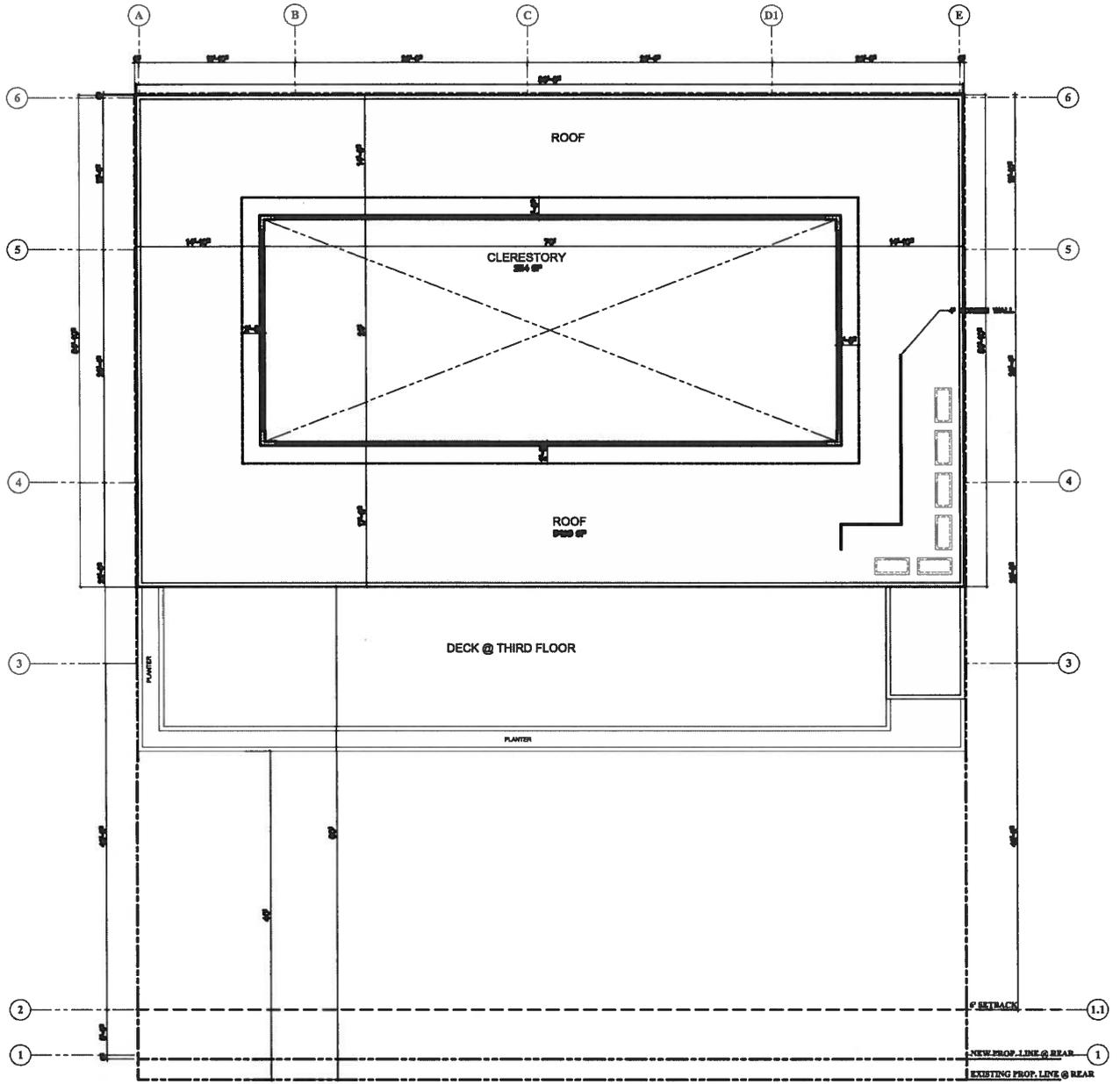
Figure 2d  
 City of Beverly Hills





Third Floor Plan

Figure 2f  
 City of Beverly Hills



**Table 1**  
**Project Characteristics**

|   |   |
|---|---|
| <b>Address</b>                          | 9212 Olympic Blvd   |
| <b>Assessor's Parcel Numbers (APNs)</b> | 4332-001-001 and 4332-001-002   |
| <b>Combined Lot Area</b>                | 12,000 sf   |
| <b>Building Footprint</b>               | 7,983 sf  |
| <b>Floor Area</b>                       | Parking B3: 11,750 sf<br>Parking B2: 11,750 sf<br>Parking B1: 11,750 sf<br>Level 1: 7,044 sf<br>Level 2: 7,516 sf<br>Level 3: 5,732 sf<br>Total: 20,292 sf <sup>1</sup> |
| <b>Land Uses</b>                        | Retail/Restaurant: 6,943 sf<br>Commercial office: 13,240 sf   |
| <b>Height</b>                           | 45 feet <sup>2</sup><br>3 stories above grade plus clerestory, with 3 underground levels of parking below   |
| <b>Parking</b>                          | 58 spaces, 35,250 sf  |

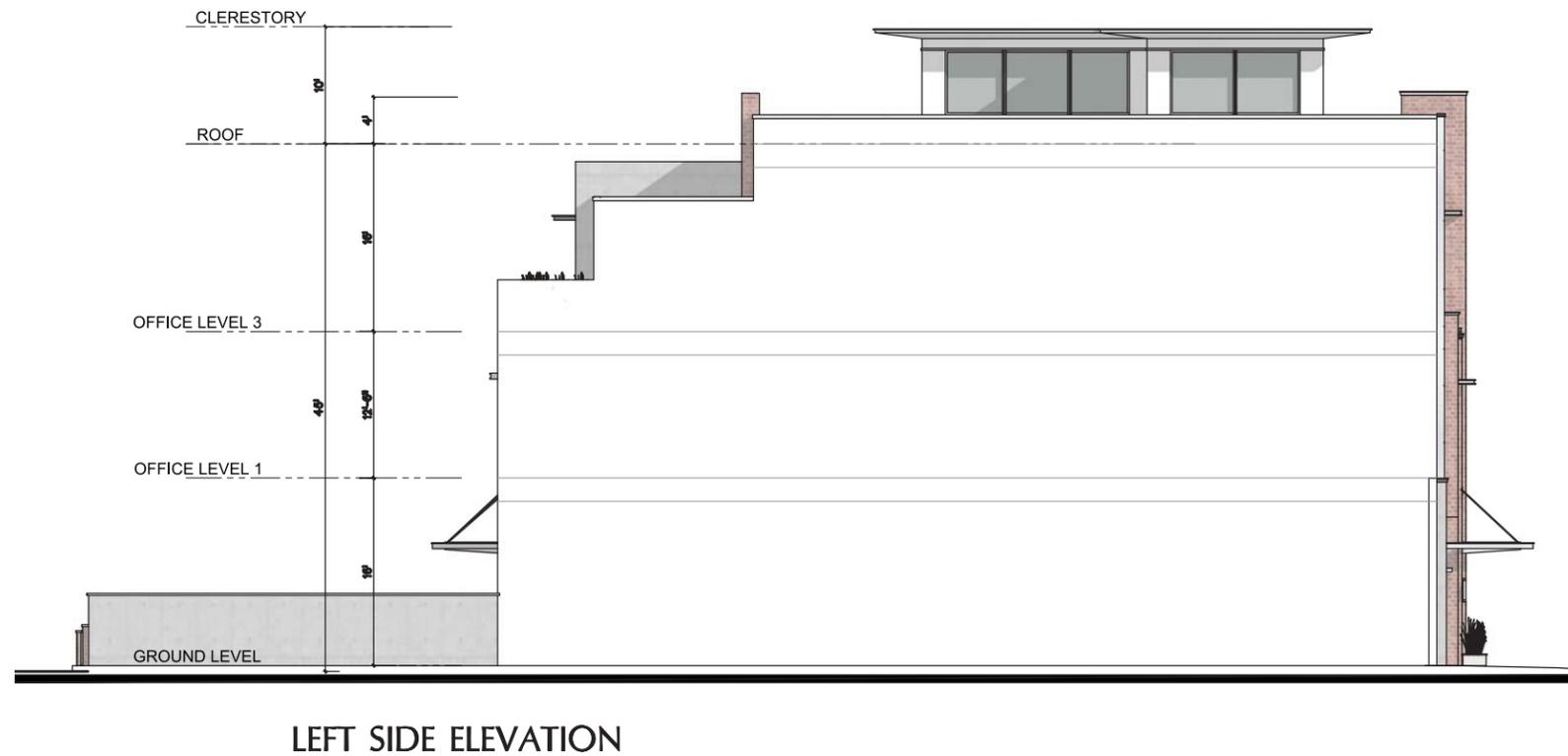
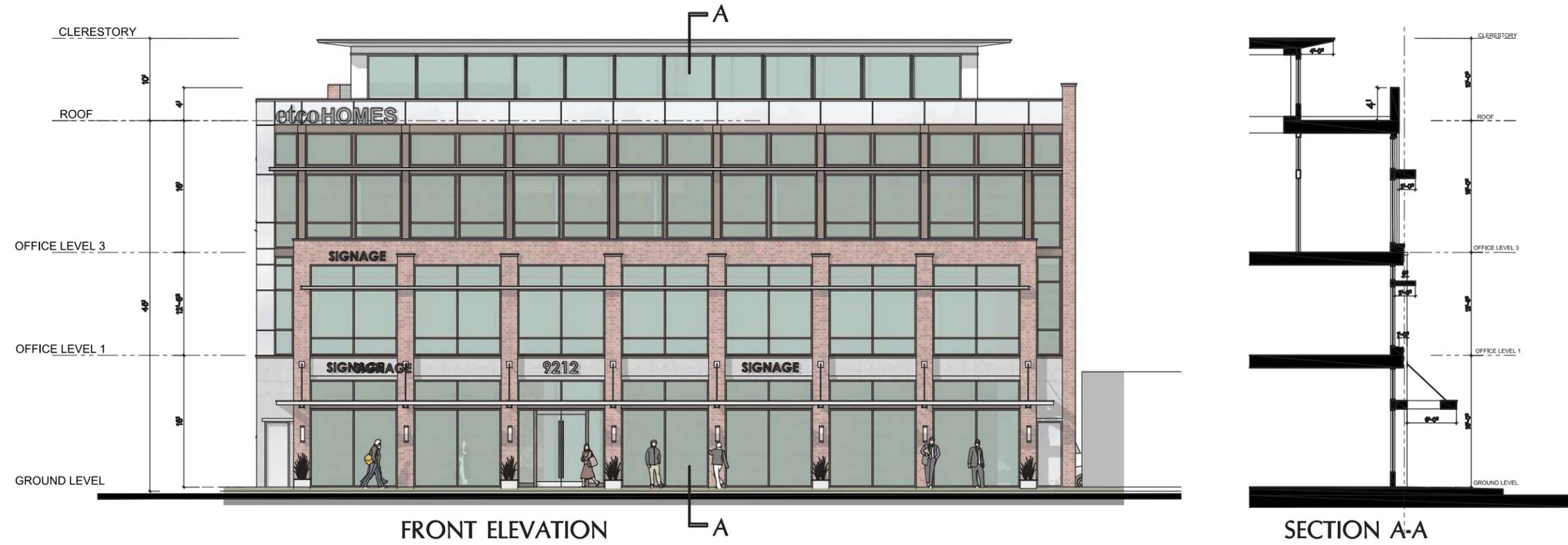
<sup>1</sup> The total floor area is calculated pursuant to Beverly Hills Municipal Code §10-3-100 and does not include parking areas, elevator shafts, stair shafts, and rooms housing building operating equipment or machinery rooms.

<sup>2</sup> The listed height does not include the clerestory, which would add 11feet 3 inches to the building's height.  
 sf = square feet

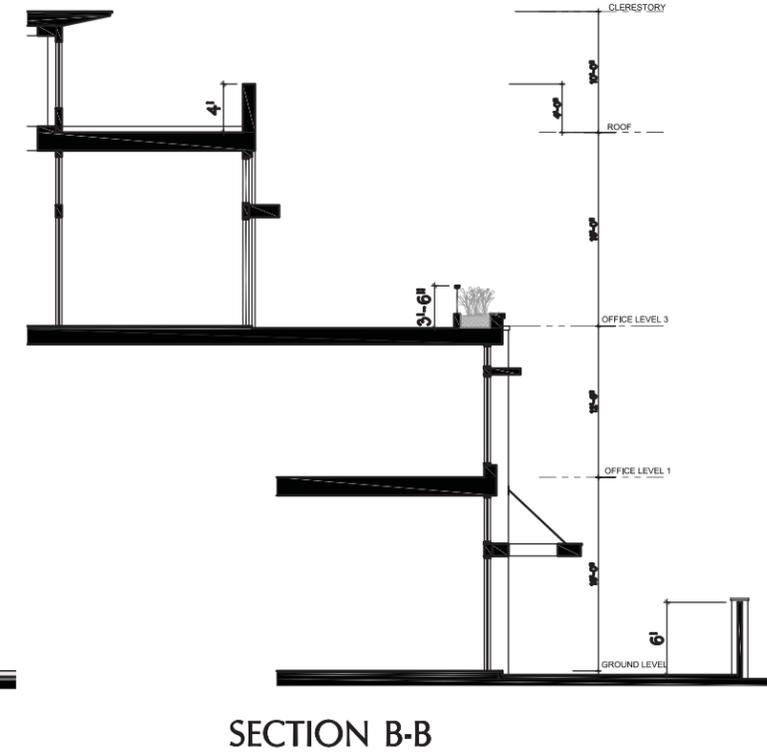
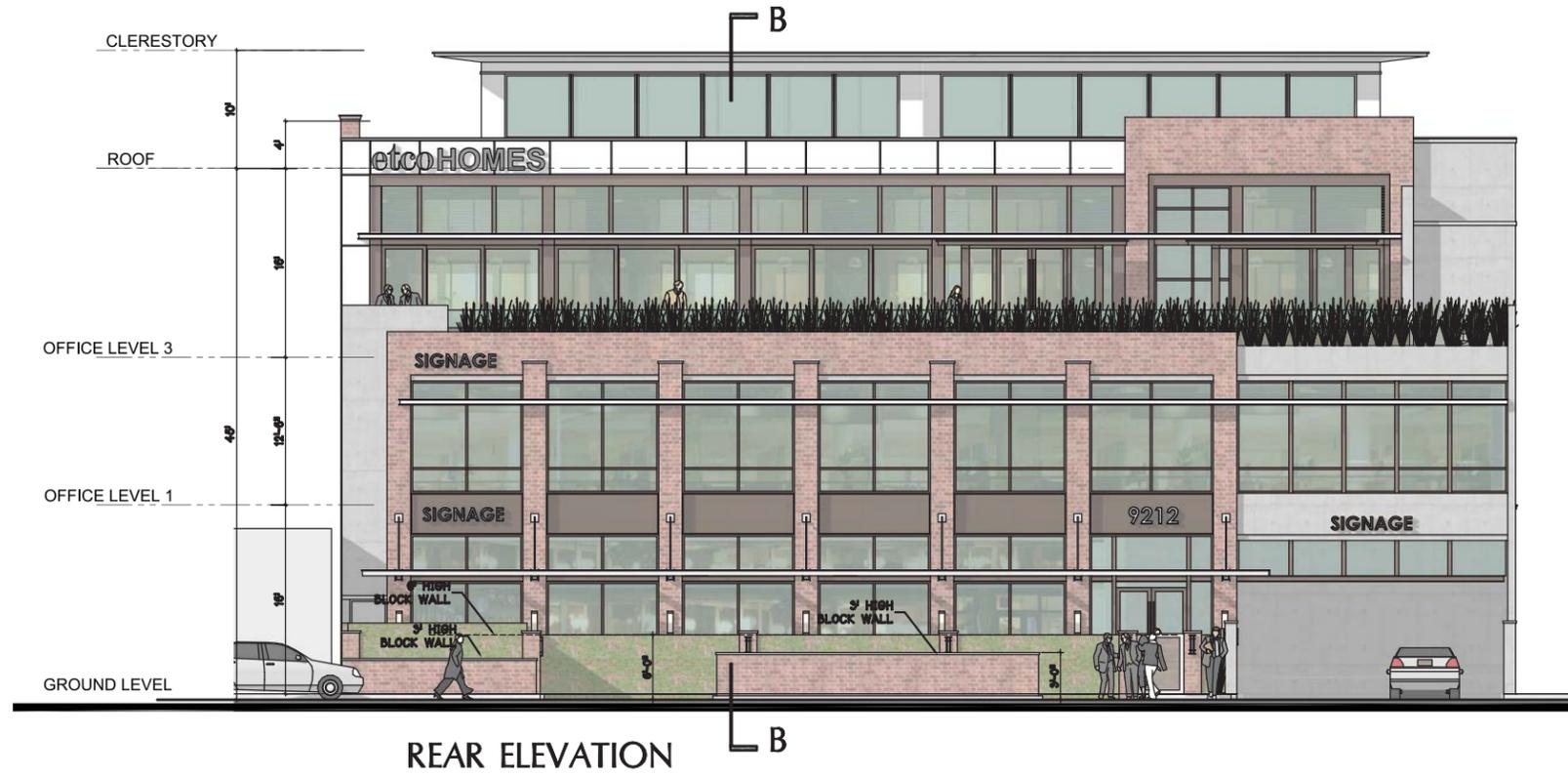
The proposed building footprint of 7,983 sf would occupy approximately 67% of the total combined lot area, which is 12,000 sf. The building would have a floor area of 20,292 sf, not including the parking areas, elevator shafts, and rooms housing operating equipment or machinery. The floor area would include a ground-floor retail/restaurant space of 6,983 sf and commercial office space on the second and third floors of 7,516 sf and 5,732 sf, respectively. Three levels of subterranean parking would have a total of 58 parking spaces; each parking level would be 11,750 sf with 18 spaces on level B1, 17 spaces on level B2, and 23 spaces on level B3.

The building would have a height of 45 feet, not including an 11'3" clerestory. The clerestory would occupy 1,960 sf, or 32.9% of the third story square footage. The exterior of the building would have a courtyard and loading area on the south side of the building, off of the back alley. Figures 3a and 3b show the proposed building elevations. The project would provide vehicular access to the subterranean parking area from the back alley on the south side of the building. Visitors would park in the subterranean spaces and access the retail/restaurant and commercial spaces through an elevator in the middle of the building. Two stairwells would also be present in the northwest and southwest corners of the building. Primary pedestrian access would be provided from Olympic Boulevard.





Front and Left Elevation



REAR ELEVATION

SECTION B-B



RIGHT SIDE ELEVATION

Rear and Right Elevation

### 3. EXISTING SITE CONDITIONS

The project site is a relatively flat, rectangular area of 12,000 sf (0.28 acres) located on the south side of Olympic Boulevard, between S. Palm Drive and S. Maple Drive in the City of Beverly Hills. The site is currently developed as a surface parking lot with vehicular access off of Olympic Boulevard. The lot provides parking facilities for a rental car company. The surrounding area is developed with multi-story commercial and multi-family residential development: a two-story commercial building immediately to the east, a single-story commercial building and surface parking lot immediately to the west, a two-story commercial building across Olympic Boulevard to the north, and a three-story multi-family residence across the alley to the south.

### 4. ANALYSIS

**Criterion (a)** *The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.*

Permitted Uses. According to the City of Beverly Hills General Plan Land Use Map, the project site is designated for low density general commercial use. The project site is zoned Commercial Transition Zone (C-3T-2). Pursuant to the City of Beverly Hills Municipal Code (BHMC) Section 10-3-1601, the C-3 zone permits commercial uses including, but not limited to, cafes, theaters, exercise clubs, dance academies, studios, offices, parking garages, and wholesale or retail shops. The proposed office space and ground-floor retail shops and restaurants are allowed uses on the project site, pursuant to the C-3 zoning. Uses permitted in the C-3 zone are all permitted in the C-3T-2 zone, per Section 10-3-1632 of the BHMC.

Floor Area Ratio. BHMC Section 10-3-1632 permits a floor area ratio (FAR) of 1.33 in the C-3T-2 zone. This is permitted to increase to 2.0 with a conditional use permit. As the proposed project would have a FAR of 1.69 (20,292 sf / 12,000 sf), the project would be acceptable with issuance of a conditional use permit.

Open Spaces and Setbacks. The southern border of the project site abuts a residential zone developed with multi-family housing. BHMC Article 19.5 requires non-residential development that is adjacent to residential development to maintain setbacks and include walls in order to create a transition between the uses. Because there is an alley that separates the project site from the adjacent residential zone, the setback requirement would be six feet and the wall requirement would be a three-foot-high solid masonry wall along the property line, abutting the alley. The wall can have a maximum 25-foot-wide opening, per the existing lot, to accommodate a driveway, which can be increased to a 30-foot opening with a minor accommodation. The proposed project would conform to the 6-foot setback and would have a three-foot-high masonry wall along the southern property line. The wall would have two 15-foot openings to provide access to the loading area and one 22-foot opening to provide access to the subterranean parking garage. The minor accommodation required for the opening requires review by the director of community development.



Height Requirements. BHMC Section 10-3-1632 limits buildings in the C-3T-2 zone to two stories or 35 feet, whichever is less; however, pursuant to the criteria for a conditional use permit as set forth in BHMC Section 10-3-38 and without a mandatory environmental impact report, the Planning Commission may approve a building that is three stories or 45 feet, provided that it complies with the following conditions:

- *An additional setback from the rear property line, provided the setback does not exceed thirty-three percent (33%) of the lot depth for any portion of the structure below two stories and does not exceed fifty percent (50%) for the third story.*
- *The design of the façade and structure facing residential uses shall be harmonious with the adjacent residential character.*
- *Landscaping or other parklike amenities shall be required within the rear setback in conjunction with the design for loading, parking, trash removal, and access to and from the site.*
- *Appropriate restriction shall be imposed on the structure, including hours of operation, additional parking, and parking restrictions in order to ensure adequate parking on-site and limit types of uses that would create noise, odor, or glare.*
- *The intensity of use shall not exceed either sixteen (16) vehicle trips per hour, or two hundred (200) vehicle trips per day for each one thousand (1,000) gross square feet of floor area.*

The proposed project would conform to the above conditions. Its consistency with each condition is discussed below.

Setbacks and Coverage. The proposed project would have a ground-floor rear setback of six (6) feet, which is 5.1% of the depth of the site, and a second floor rear setback of 37'6", which is 32% of the depth of the site. The third story of the project would have a setback of 57'6", which is 49% of the depth of the site. None of these setbacks exceed the maximums set by the BHMC.

The proposed project includes a ten-foot high clerestory above the third floor. This would increase the total height of the proposed project to 55 feet. However, per BHMC Section 10-3-100, an unoccupied clerestory is not considered as part of the height limit for a non-residential structure if the clerestory is less than fifteen feet in height, does not exceed 33% of the roof area, and does not exceed or intersect a line projecting from the perimeter of the roof upward at an angle of 45° from the horizontal. The proposed clerestory would be 10 feet in height and occupy 1,967 sf, which is 32.9% of the proposed 5,963 sf roof. The section view of the proposed project (see Figure 4) shows that the clerestory would not exceed or intersect a 45° angle from the perimeter of the roof.

Design and Landscaping. As shown in Figures 3a and 3b, the proposed project would feature a brick façade, large windows, and modern, straight lines. A gated enclosure for a transformer would be provided at the rear of the property, along the alley. Landscaping would be done in the rear setback to buffer the loading area, transformer enclosure, and outdoor patio area from the alleyway.

Parking. BHMC Section 10-3-2730 requires that commercial space provide one parking space for every 350 sf of floor area. The proposed project would have a floor area



of approximately 20,183 sf and be required to provide 58 parking spaces, per the BHMC requirement. The proposed project includes the required 58 parking spaces. A Traffic and Parking Study for the project, prepared by Coco Traffic Planners, Inc. (2016) (Appendix A to this report), concluded that the project would have a peak parking demand of 59 parking spaces, yet notes that mixed-use development has lower parking needs due to “shared parking” capability, where different land uses, such as retail, restaurant, and office, can share the same parking stall, at different times of the day. The traffic and parking study concludes that the proposed project would provide adequate parking and that no on-street overflow would be expected.

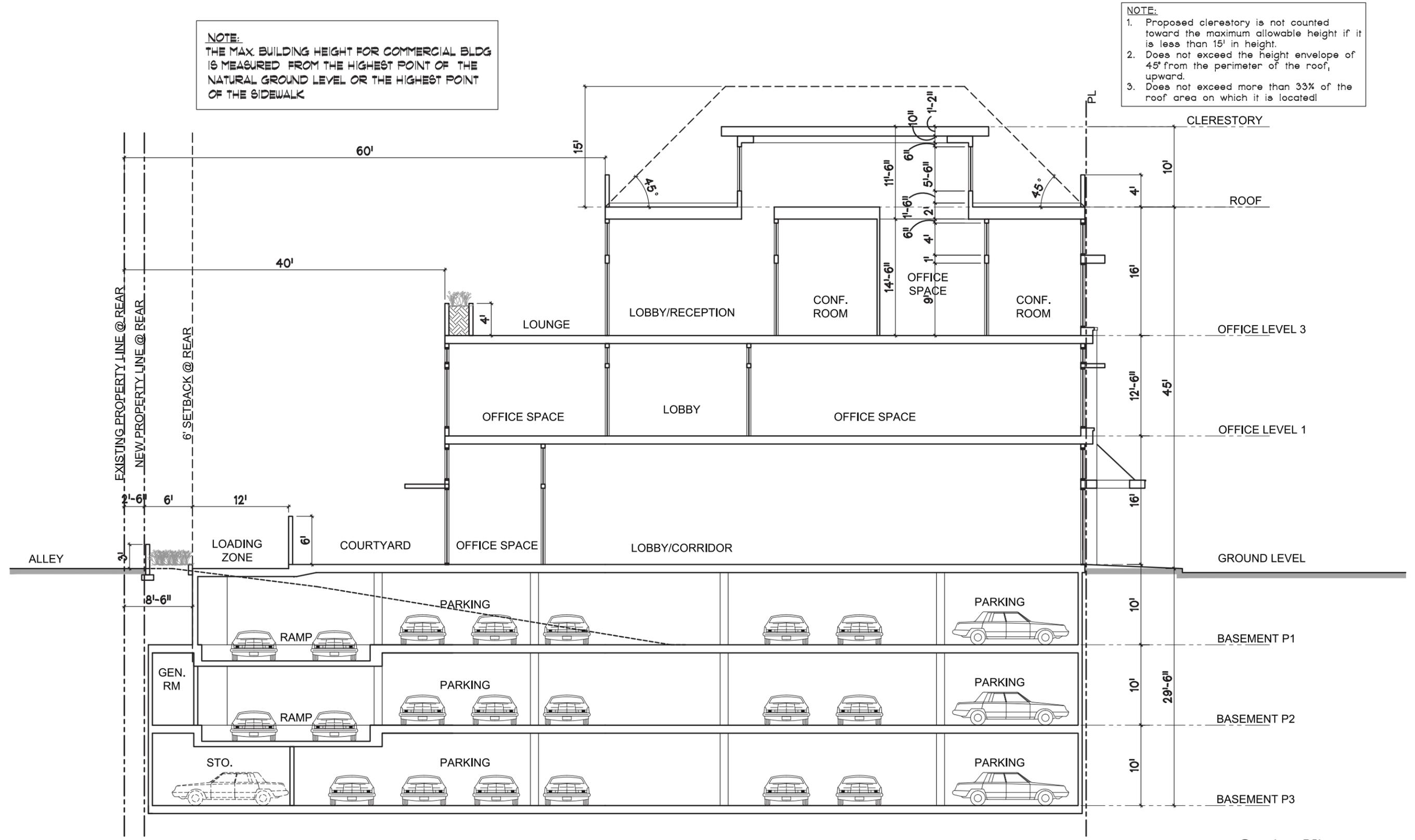
Additionally, the provided parking would be in a subterranean garage, which would decrease noise and glare associated with parking lots. Parking facilities are not listed on Figure 4-3 of the 1993 SCAQMD CEQA *Air Quality Handbook* as a use that requires analysis of odor impacts. Odor is normally associated with uses such as agriculture, wastewater treatment, industrial facilities, or landfills, none of which are proposed as part of the project.

*Intensity of Use.* Because the proposed project would have a floor area of approximately 20,292 sf, the project would be allowed a maximum of 4,058 vehicle trips per day (20,292 sf/1,000 sf \* 200 vehicle trips) per the intensity of use condition. The proposed project would add approximately 648 average daily trips (Coco Traffic Planners Inc., 2016), which is well below the maximum.

With the aforementioned considerations regarding additional setbacks, clerestory coverage, parking, and intensity of use and Planning Commission approval, the proposed project would be consistent with the height standards set forth for the C-3T-2 zone.

General Plan Consistency. The General Plan has several land-use policies that are relevant to the proposed project, including the following specifically applicable policies related to community character and quality and economic sustainability. Table 2 presents an evaluation of the project’s consistency with applicable Beverly Hills General Plan policies.





Section View

Source: Bucilla Group Architecture Inc, 2015.

**Table 2**  
**Consistency with Beverly Hills General Plan Policies**

|   |   |
|---|---|
| <p><b>LU 2.1 City Places: Neighborhoods, Districts, and Corridors.</b> <i>Maintain and enhance the character, distribution, built form, scale, and aesthetic qualities of the City's distinctive residential neighborhoods, business districts, corridors, and open spaces.</i></p>   | <p><u>Consistent:</u> Surrounding development consists of two- to three-story multi-family residential buildings and one- to three-story commercial buildings. The proposed three-story commercial building would be similar in scale to surrounding development and would be consistent with the character and quality of the area. The building would undergo architectural review to ensure the façade is compatible with the surrounding development. The building elevations, Figures 3a and 3b, show the architectural style of the proposed project. The project would feature a brick façade, modern, clean lines, and landscaping to ensure cohesion with the architectural style of the area.</p> |
| <p><b>LU 2.4 Architectural and Site Design.</b> <i>Require that new construction and renovation of existing buildings and properties exhibit a high level of excellence in site planning, architectural design, building materials, use of sustainable design and construction practices, landscaping, and amenities that contribute to the City's distinctive image and complement existing development.</i></p>   | <p><u>Consistent:</u> The proposed project would exhibit a facade consisting of glass and brick, as shown in Figures 3a and 3b. The project design would be required to undergo architectural review to ensure that the design is complements the existing development.</p>   |
| <p><b>LU 9.1 Uses for Diverse Customers.</b> <i>Accommodate retail, office, entertainment, dining, hotel, and visitor serving uses that support the needs of local residents, attract customers from the region, and provide a quality experience for national and international tourists.</i></p>  | <p><u>Consistent:</u> The proposed project would accommodate restaurant, retail, and office uses that support the needs of local residents and attract customers from the region.</p>   |
| <p><b>LU 11.2 Site Planning and Architectural Design.</b> <i>Require that commercial and office properties and buildings are planned and designed to exhibit a high level of site and architectural design quality and excellence.</i></p>  | <p><u>Consistent:</u> The proposed project would exhibit quality site and architectural design. The exterior of the building would consist of a glass storefront. The rear of the building would have planters, an outdoor patio, and a wall to ease the transition to the adjacent residential uses.</p>   |
| <p><b>LU 12.2 Building, Parking Structure, and Site Design.</b> <i>Require that buildings, parking structures, and properties in commercial and office districts be designed to assure compatibility with abutting residential neighborhoods, incorporating such elements as setbacks, transitional building heights and bulk, architectural treatment of all elevations, landscape buffers, enclosure of storage facilities, air conditioning, and other utilities, walls and fences, and non-glare external lighting.</i></p> | <p><u>Consistent:</u> The proposed building, parking structure, and site design would be compatible with abutting residential neighborhoods. The building height of three stories above grade, architectural treatment, and landscape buffers would complement the surrounding development. The southern elevation would feature a wall and planters to ease the transition from residential uses to commercial, as well as an outdoor patio.</p>   |
| <p><b>LU 12.3 Alleys Between Commercial and Residential Uses.</b> <i>Encourage that alleys be attractively designed as a transition between retail and office districts and residential neighborhoods, using features such as quality paving materials, landscaping, low voltage lighting and high-quality maintenance to assure that such alleys are attractive, and kept free of trash and debris.</i></p>  | <p><u>Consistent:</u> The project site has an alley on the south end separating commercial and residential uses. The project would enhance the transition between the commercial use and the adjacent residential area with landscaping on the project site along the alley frontage and a low planter box separating the loading zone. Between the loading zone and building, the project would have an outdoor courtyard area, separated by a block wall fence, to enhance the transition.</p>  |



As shown in Table 2, the proposed project would be generally consistent with applicable General Plan policies. The project would be consistent with applicable zoning designation and regulations and General Plan designation and policies.

**Criterion (b)** *The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.*

The project site is located on a 0.28-acre parcel within a developed urban neighborhood. As described in Section 3, Existing Site Conditions, it is immediately surrounded by urban uses on all sides.

**Criterion (c)** *The project site has no value as habitat for endangered, rare, or threatened species.*

The project site is paved with a surface parking lot and is located within a highly developed urban area that lacks habitat that would be suitable for sensitive animal or plant species. There is limited vegetation on the northern edge of the project site; however, no shrubs or trees are present. This does not provide habitat for sensitive species due to its small size and highly urban context.

**Criterion (d)** *Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.*

The following discussion provides an analysis of the project's potential effects with respect to traffic, noise, air quality, and water quality.

## A. TRAFFIC

The following analysis of potential traffic impacts is based on the Traffic and Parking Study prepared by Coco Traffic Planners, Inc. for the proposed project in January 2016. The traffic and parking study is included as Appendix A.

Trip Generation. Trip rates for existing and proposed land uses were based on Institute of Traffic Engineers (ITE) traffic generation factors from the 9<sup>th</sup> Edition of the *Traffic Generation Manual* (ITE, 2012). The trip rate "car storage/rental" was applied for the existing surface parking lot and the trip rates for "general office" and "specialty retail center (3)" were applied for the proposed commercial development. As shown in Table 3, the project is expected to generate a net total of 648 daily trips, including 39 trips during the AM peak hour and 129 trips during the PM peak hour. Because specialty retail centers are assumed to open after 10:00 AM, traffic generation during commuter AM peak hours are negligible.



**Table 3  
 Project Trip Generation**

| Land Use                 | Size   | Unit  | Average Daily Traffic |            | AM Peak Hour   |           | PM Peak Hour   |            |
|--------------------------|--------|-------|-----------------------|------------|----------------|-----------|----------------|------------|
|                          |        |       | Trip Ends Rate        | Trip Ends  | Trip Ends Rate | Trip Ends | Trip Ends Rate | Trip Ends  |
| <b>Existing Land Use</b> |        |       |                       |            |                |           |                |            |
| Car Storage/Rental       | 12.0   | KGSF* | 0.00                  | 0          | 0.00           | 0         | 0.00           | 0          |
| <b>Proposed Land Use</b> |        |       |                       |            |                |           |                |            |
| General Office           | 13.913 | KGSF  | 21.0                  | 292        | 2.80           | 39        | 6.39           | 90         |
| Specialty Retail Center  | 7.426  | KGSF  | 47.8<br>5             | 356        | 0.00           | 0         | 5.16           | 39         |
| <b>Net New Trips</b>     |        |       |                       | <b>648</b> |                | <b>39</b> |                | <b>129</b> |

Source: Traffic and Parking Study, Appendix A

\*KGSF=Trip Ends generated per size unit

Signalized Intersection Impacts. Coco Traffic Planners modeled impacts to traffic flow at intersections in the vicinity of the project site under existing conditions, future (2017) conditions, future conditions with related projects, and future conditions with related projects and the addition of traffic generated by the project. The Intersection Capacity Utilization (ICU) method was used to assign a level of service (LOS) to each. ICU is the ratio of traffic volume to the capacity. LOS is a qualitative measure used to describe the condition of traffic flow on the street system, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. The City of Beverly Hills has set traffic thresholds, beyond which a project's impact is considered significant and requires implementation of mitigation measures. The traffic impact is significant if a project increases the ICU by 0.02 or more at an intersection operating at LOS E or worse or if a project increases the ICU by 0.03 or more at an intersection operating at LOS D or better. Table 4 shows the ICU values and definitions for levels of service, and the allowable increase in ICU. Table 5 shows the project related impacts at signalized and unsignalized intersections.

**Table 4  
 Intersection Threshold Criteria**

| Level of Service | ICU        | Allowable Increase in ICU | Definition   |
|------------------|------------|---------------------------|--|
| A                | 0.00-0.60  | 0.03                      | Excellent. No vehicle waits longer than one red light and no approach phase is fully used.   |
| B                | 0.601-0.70 | 0.03                      | Very Good. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles. |
| C                | 0.701-0.80 | 0.03                      | Good. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.            |



**Table 4**  
**Intersection Threshold Criteria**

| Level of Service | ICU        | Allowable Increase in ICU | Definition  |
|------------------|------------|---------------------------|---|
| D                | 0.801-0.90 | 0.03                      | Fair. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.                            |
| E                | 0.901-1.00 | 0.02                      | Poor. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.  |
| F                | >1.00      | 0.02                      | Failure. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths. |

Source: Traffic and Parking Study, Appendix A

**Table 5**  
**Traffic Levels at Surrounding Intersections**

| Intersection (N/S@E/W)            | Time Period | Existing |     | 2017  |     | 2017 Cumulative |     | Cumulative + Project |     | Project Related Change in ICU |
|-----------------------------------|-------------|----------|-----|-------|-----|-----------------|-----|----------------------|-----|-------------------------------|
|                                   |             | ICU      | LOS | ICU   | LOS | ICU             | LOS | ICU                  | LOS |                               |
| Rexford Drive @ Olympic Boulevard | AM          | 0.769    | C   | 0.791 | C   | 0.792           | C   | 0.794                | C   | 0.002                         |
|                                   | PM          | 0.718    | C   | 0.738 | C   | 0.739           | C   | 0.743                | C   | 0.003                         |
| Maple Drive @ Olympic Boulevard   | AM          | 0.592    | A   | 0.606 | B   | 0.607           | B   | 0.607                | B   | 0.001                         |
|                                   | PM          | 0.597    | A   | 0.612 | B   | 0.613           | B   | 0.619                | B   | 0.006                         |
| Palm Drive @ Olympic Boulevard    | AM          | 0.629    | B   | 0.645 | B   | 0.645           | B   | 0.647                | B   | 0.001                         |
|                                   | PM          | 0.579    | A   | 0.594 | A   | 0.595           | A   | 0.606                | B   | 0.010                         |
| Doheny Drive @ Olympic Boulevard  | AM          | 0.859    | D   | 0.881 | D   | 0.881           | D   | 0.886                | D   | 0.004                         |
|                                   | PM          | 0.875    | D   | 0.897 | D   | 0.898           | D   | 0.908                | E   | 0.010                         |

Source: Traffic and Parking Study, Appendix A

As shown in Table 5, under existing conditions, only the intersection of Doheny Drive and Olympic Boulevard operates below LOS C. The intersection of Doheny Drive and Olympic Boulevard currently operates at LOS D during AM and PM peak hours. While the proposed project combined with cumulative future traffic conditions would reduce the LOS at the intersection to LOS E during the PM peak hour, the proposed project would generate a change in ICU of just 0.010, which is below the City's threshold of significance. All other intersections would continue to operate at LOS C or higher and



none would see a significant increase in ICU related to the project. Therefore, the proposed project would not significantly impact traffic at any of the studied intersections.

Two-Way Stop Intersections. The ICU analysis, shown in Table 5, assumes that all intersections are signalized. However, the intersection at S. Maple Drive and Olympic Boulevard and the intersection at Palm Drive and Olympic Boulevard are controlled by side-street stop signs, with traffic free-flowing on Olympic Boulevard. These intersections were further analyzed using the Highway Capacity Manual (HCM) 2000 Edition methodology for Two-Way Stop Controlled (TWSC) intersections. The results of this analysis concluded that while a minor increase in total delays would occur at both of the intersections, traffic conditions would remain good and no mitigation would be required. This analysis is included in the Coco Traffic Planners Inc., Traffic and Parking Study (Appendix A).

Parking Supply and Demand. The proposed project would provide 58 parking spaces in three levels of subterranean parking. These parking spaces are intended only to serve the new development. Parking requirements for commercial uses are included in BHMC Section 10-3-2730. As shown in Table 6, the proposed project would meet the parking requirements set forth by the BHMC. Furthermore, the Traffic and Parking Study completed by Coco Traffic Planners Inc. estimated that the project would have a peak parking demand of 59 but concluded that the 58 parking stalls would be adequate for the proposed project and that no on-street parking overflow is expected.

**Table 6  
 BHMC Parking Requirements**

| Use                                 | Area (sf) | Ratio | Sub-Total |
|-------------------------------------|-----------|-------|-----------|
| Commercial                          | 20,292    | 1:350 | 58        |
| Total Required by BHMC              |           |       | 58 spaces |
| Actual Provided by Proposed Project |           |       | 58 spaces |

*BHMC Section 10-3-2730 requires one space per 350 square feet of floor area for commercial uses not otherwise specified in that section.*

Site Access. The existing surface parking lot is accessed via a driveway off of Olympic Boulevard. The proposed project would remove this access point and provide access to the subterranean garage via a two-way driveway off of the alley to the south of the project site. Two stairwells (in the northwest and southwest corners) and a central elevator would provide access from the subterranean garage to the retail, restaurant, and office space above. Primary pedestrian access would be provided from the sidewalk on the Olympic Boulevard side of the project site, with additional pedestrian access provided from the alley.

The 60-foot loading zone would be accessed via the alley, with two 15-foot openings, one on each end. The loading zone would fit two trucks.

Construction Traffic. Construction traffic impacts on roadway facilities would be significant if the construction of a project creates a prolonged impact due to lane closure,



emergency vehicle access, traffic hazards to bicycles and/or pedestrians, damage to the roadbed, truck traffic on roadways not assigned as truck routes, and other similar impediments to circulation. Based on the following assumptions, it is not anticipated that project construction would cause significant traffic impacts:

- It is anticipated that the construction vehicles, haul trucks, and construction workers would access the site from Olympic Boulevard, which is an approved heavy haul route (Beverly Hills, March 2009).
- The proposed project would not involve road closures that would affect emergency vehicle access or create hazards to bicycles and pedestrians.
- The total number of construction trips would be staggered throughout the day, with many trips occurring during off-peak hours.

To reduce temporary disruptions on the adjacent roadway network due to construction activities, the project would be expected to comply with the standard City of Beverly Hills condition of approval requiring preparation and approval of a Construction Management Plan prior to the initiation of construction activities. This plan would address the following items:

- Maintain existing access for land uses in proximity of the project site during project construction.
- Schedule deliveries and hauling of construction materials to non-peak travel periods, including night hours and weekends.
- Coordinate deliveries and hauling to reduce the potential of trucks waiting to load or unload for extended periods of time.
- Minimize obstruction of through traffic lanes on Olympic Boulevard.
- Meet the requirements of the Community Development and Public Works/Transportation Departments with respect to construction scheduling and coordination with other construction near the project site, heavy hauling and material delivery routing, types of trucks, use limitations per hour, hours of operations, traffic plan submission for different stages, pedestrian and vehicular access, street use permit process, daily street cleanliness and maintenance and safety after work, and parking management for construction workers.

Additionally, the maximum number of construction parking spaces would be identified, and the applicant would be required to accommodate parking either at the project site or at a nearby site from which workers would be transported to the site. With the provision of such parking, it is anticipated that for workers traveling to the project site there would be sufficient on-site access. Therefore, no additional management plans for construction workers are necessary.

Finally, it should be noted that construction traffic impacts are temporary by their nature, and would have no effect on traffic and circulation beyond the construction period.

Conclusion. The assessment of traffic impacts, parking supply and demand, site access, and construction impacts determined that there would be no significant impacts.



## B. NOISE

Noise Characteristics and Measurement. Noise level, or volume, is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 hertz).

One of the most frequently used noise metrics that considers duration as well as sound power level is the equivalent noise level ( $L_{eq}$ ). The  $L_{eq}$  is defined as the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual varying levels over a period of time (essentially,  $L_{eq}$  is the average sound level).

Noise Standards. The City of Beverly Hills' General Plan incorporates comprehensive goals, policies, and implementation actions related to noise and acceptable noise levels. These policies address unnecessary, excessive, and annoying noise levels and sources, such as vehicles, construction, special sources (e.g., radios, musical instruments, animals) and stationary sources (e.g., heating and cooling systems, mechanical rooms).

For traffic related noise, impacts would be significant if project-generated traffic results in the exposure of sensitive receptors to a perceptible increase in roadway noise. Roughly a doubling of traffic volume would be necessary to generate a perceptible increase in roadway noise levels of 3 dBA or more.

Impacts relating to on-site activities would be significant when project-related activities create noise exceeding the standards as identified by the applicable noise zone for the project site. The project site is zoned for commercial use, but adjacent properties to the south are zoned for multi-family residential use. The nearest sensitive receptors to the project site are multi-family residences located approximately 30 feet to the south of the project site (across the alley).

Existing Ambient Noise Levels. The primary source of noise in the vicinity of the project site is motor vehicle traffic, including automobiles, trucks, buses, and motorcycles. Roadways that contribute to ambient noise near the project site include Olympic Boulevard, S. Maple Drive, and the alley behind the project site. A secondary source of noise is motor vehicle activity on-site, at the existing rental car company parking lot. Due to the logarithmic nature of sound, elimination of this relatively minor noise source on-site would not result in a noticeable reduction in the ambient noise level, which depends primarily on motor vehicle traffic on roadways.

To determine existing ambient noise levels on the project site, three 15-minute weekday noise measurements were taken on the project site during PM peak traffic hours between 4:00 p.m. and 5:00 p.m. on October 16, 2015, using an ANSI Type II integrating sound level meter. The first noise measurement was located on Olympic Boulevard. The second noise measurement was located in the alleyway behind the project site. The third measurement was located at the intersection of Olympic Boulevard and S. Maple Drive.



Table 7 lists the measured noise levels. As shown in Table 7, noise levels were measured at 70.0 dBA  $L_{eq}$  along Olympic Boulevard, 64.9 dBA  $L_{eq}$  along the alleyway, and 64.2 at S. Maple Drive. During the noise measurements, motor vehicles were the primary noise source.

**Table 7  
 On-Site Noise Measurement Results**

| Measurement Number | Measurement Location | Noise Sources   | Sample Time | $L_{eq}$ (dBA) |
|--------------------|----------------------|---|-------------|----------------|
| 1                  | Olympic Boulevard    | Street Traffic  | 4:00 p.m.   | 70.0           |
| 2                  | Alleyway             | Residential Traffic w/ tree trimming, leaf blower, and fire truck | 4:22 p.m.   | 64.9           |
| 3                  | S. Maple Drive       | Street Traffic w/ industrial truck                                | 4:45 p.m.   | 64.2           |

*Source: Field visit on October 16, 2015, using ANSI Type II Integrating sound level meter. Refer to Appendix B for noise monitoring data sheets.*

Construction Noise. The project would result in temporary noise level increases during site preparation, excavation, paving, and building construction. The grading phase of project construction tends to create the highest noise levels because of the operation of heavy equipment. As shown in Table 8, noise levels associated with heavy equipment typically range from about 76 to 95 dBA at a reference distance of 50 feet from the source and from 74 to 93 dBA at a distance of 30 feet (representing the nearest sensitive receptors). The next closest sensitive receptor is located 75 feet from the project site. Noise levels at this distance would range from 77 dBA to 86 dBA, as shown in Table 8.

**Table 8  
 Typical Noise Levels at Construction Sites**

| Equipment      | Typical Level (dBA) |         |         |
|----------------|---------------------|---------|---------|
|                | 50 Feet             | 30 Feet | 75 Feet |
| Air Compressor | 81                  | 85      | 78      |
| Backhoe        | 80                  | 84      | 77      |
| Concrete Mixer | 85                  | 89      | 82      |
| Jackhammer     | 88                  | 92      | 85      |
| Paver          | 89                  | 93      | 86      |
| Saw            | 76                  | 74      | 73      |
| Scraper        | 89                  | 93      | 86      |
| Truck          | 88                  | 92      | 85      |

*Source: Hanson, Towers, and Meister, May 2006.  
 Note: Pile drivers are not permitted onsite pursuant to the City of Beverly Hills Building and Safety Department (Ryan Gohlich, personal communication, April 2012).*



Pursuant to the City’s noise ordinance (BHMC Sections 5-1-202 and 5-1-205), a significant impact would occur if construction activities occurring on the project site would result in an increase of 5 dBA above the ambient level outside the hours permitted by the City’s noise ordinance (i.e., between the hours of 6:00 PM and 8:00 AM on weekdays, or at any time on Saturday, Sunday, or a public holiday). Further, construction work within 500 feet of a residential zone is prohibited on Saturdays. Because construction would be temporary and would only occur during the hours permitted by the City’s noise ordinance, impacts due to construction noise would be less than significant.

Construction Vibration. Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas most ambient noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise; e.g., the rattling of windows from truck pass-bys. This phenomenon is caused by the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases and vibration rapidly diminishes in amplitude with distance from the source. The ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB) in the U.S.

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

Significant impacts occur when vibration or groundborne noise levels exceed the Federal Railroad Administration (FRA) maximum acceptable level threshold of 65 VdB for buildings where low ambient vibration is essential for interior operations (such as hospitals and recording studios), 72 VdB for residences and buildings where people normally sleep, including hotels, and 75 VdB for institutional land uses with primary daytime use (such as churches and schools).

Construction activities that would occur on the project site have the potential to generate groundborne vibration. Table 9 identifies various velocity levels for the types of construction equipment that are likely to operate at the project site during construction.

**Table 9  
 Vibration Source Levels for Construction Equipment**

| Equipment       | Approximate VdB |         |         |
|-----------------|-----------------|---------|---------|
|                 | 25 Feet         | 30 Feet | 75 Feet |
| Large Bulldozer | 87              | 85      | 73      |
| Loaded Trucks   | 86              | 83      | 71      |



**Table 9**  
**Vibration Source Levels for Construction Equipment**

| Equipment       | Approximate VdB |         |         |
|-----------------|-----------------|---------|---------|
|                 | 25 Feet         | 30 Feet | 75 Feet |
| Small Bulldozer | 58              | 55      | 43      |
| Jackhammers     | 79              | 76      | 65      |

*Source: Federal Railroad Administration, 2012.*

*Note: Pile drivers are not permitted on-site pursuant to the City of Beverly Hills Building and Safety Department (Ryan Gohlich, personal communication, April 2012).*

Based on information presented in Table 9, vibration levels could be approximately 85 VdB at the existing residences located 30 feet south of the project site. As noted above, impacts would be significant if vibration levels exceeded 72 VdB during recognized sleep hours (as established by the Federal Railway Administration for places where people normally sleep). Though vibration levels may exceed 72 VdB at nearby sensitive receptors, construction activities would be limited to daytime hours between 8:00 AM and 6:00 PM Monday through Friday, per BHMC Section 5-1-206. Therefore, vibration levels would not affect residential uses that are sensitive to vibration levels when sleep is disturbed. In addition, the project would not exceed vibration levels that could potentially damage nearby buildings.

Construction activity would be temporary and the use of heavy equipment would be primarily limited to the excavation, site preparation, and exterior construction phases. As construction of the outer shell of the building progresses, the building itself would contain much of the construction activity, and the likelihood of utilizing bulldozers and jackhammers decreases. Trucks would still be anticipated to bring construction materials to the site, which may periodically generate vibrations that would be felt by nearby receptors; however, the vibrations would not be likely to persist for long periods. Because vibration would be a temporary impact during construction and would not occur during normal sleep hours, impacts would be less than significant.

Operational Noise. Existing uses near the project site may periodically be subject to noises associated with operation of the proposed project, including exterior noise that is typical of commercial development and parking garages: conversations; trash hauling; delivery traffic, loading and unloading; tire and engine noise from the movement of vehicles on driveways; noise associated with rooftop ventilation and heating systems; and beeping from the locking and unlocking of motor vehicles. For example, conversations taking place on the third floor outdoor patio or in the ground floor outdoor courtyard may be heard at adjacent residences. However, this activity would not substantially contribute to average ambient noise levels and would be comparable to similar activity at the nearby residences.

In addition, the proposed project would generate traffic noise from vehicles traveling to and from the project site. As shown in Table 3, the proposed project would generate a net gain of approximately 648 average daily trips, 39 AM peak hour trips, and 129 PM peak hour trips. Vehicular access to the proposed project would be provided from the two-way alley to the south of the project site. The Traffic and Parking Study prepared for the proposed project estimates that 57% of trips would occur on Palm Drive, 43% of trips



would occur on Maple Drive, and 82% of trips would occur on Olympic Boulevard. Table 10 shows existing traffic volumes and the expected increase in trips on local roadways. Palm Drive during the PM peak hour would experience the largest percentage increase in traffic, with a 51% increase over existing trips. Roughly a doubling of traffic volume would be necessary to generate a perceptible increase in roadway noise levels of 3 dBA or more. Therefore, the minimal amount of traffic generated by the proposed project relative to existing traffic volumes on local roadways would not result in a perceptible increase in roadway noise.

**Table 10  
 Vehicle Trip Increase by Roadway**

| Roadway  | Existing AM/PM Peak Hour Trips [a] | Percentage of Project Trips [b] | Net New Project Trips AM:(39*b) PM: (129*b) [c] | Percentage Increase (c/a*100) [d] |
|--|------------------------------------|---------------------------------|---|-----------------------------------|
| Palm Drive (south of Olympic Boulevard)                | 112 / 144                          | 57%                             | 23 / 74   | 20.5% / 51.4%                     |
| Maple Drive (south of Olympic Boulevard)               | 75 / 121                           | 43%                             | 17 / 55   | 22.7% / 45.5%                     |
| Olympic Boulevard (between Palm Drive and Maple Drive) | 3,578 / 3,755                      | 82%                             | 32 / 106  | 0.9% / 2.8%                       |

Source: *Traffic and Parking Study, Appendix A*

**Conclusion.** The proposed project is not expected to result in a significant long-term increase in traffic noise levels, and temporary construction noise would be less than significant, based on compliance with the City’s time restrictions on construction activities, contained in the City’s Municipal Code. The proposed commercial uses of the proposed project would not be expected to have a significant impact on daily noise at the project site. Therefore, noise-related impacts resulting from implementation of the proposed project would be less than significant.

### C. AIR QUALITY

A significant adverse air quality impact may occur when a project individually or cumulatively interferes with progress toward the attainment of the ozone standard by releasing emissions that equal or exceed the established long term quantitative thresholds for pollutants, or causes an exceedance of a state or federal ambient air quality standard for any criteria pollutant. Because the project site is located within the South Coast Air Basin and falls under the jurisdiction of the South Coast Air Quality Management District (SCAQMD), this air quality analysis conforms to the methodologies recommended in SCAQMD’s CEQA Air Quality Handbook (1993). The following significance thresholds have been recommended by the SCAQMD for project operations within the South Coast Air Basin:

- 55 pounds per day of ROG;
- 55 pounds per day of NO<sub>x</sub>;
- 550 pounds per day of CO;
- 150 pounds per day of PM<sub>10</sub>; and



- *55 pounds per day of PM<sub>2.5</sub>.*

Construction-related air quality impacts are considered significant if emissions associated with construction activity would exceed adopted SCAQMD thresholds. Temporary construction emission thresholds have been recommended by the SCAQMD on a daily basis as follows:

- *75 pounds per day of ROG;*
- *100 pounds per day of NO<sub>x</sub>;*
- *550 pounds per day of CO;*
- *150 pounds per day of PM<sub>10</sub>; and*
- *55 pounds per day of PM<sub>2.5</sub>.*

In addition to the regional air quality thresholds shown above, SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the SCAQMD's CEQA Air Quality Handbook. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into account factors such as ambient concentrations in each source receptor area (SRA), project size, and distance to the sensitive receptor. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation, and are not applicable to mobile sources such as cars on a roadway (SCAQMD, Final Localized Significance Threshold Methodology, June 2003). LSTs have been developed for NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>. Since the majority of emissions from the proposed office and retail/restaurant uses would be generated by vehicle trips on roadways, LSTs for operational emissions would not apply to the proposed project. Construction LSTs for the 0.28-acre project site were derived based on the SCAQMD's LSTs for one-acre project sites in SRA 2 for Northwest Coastal LA County.

Operational Emissions. Long-term operational emissions associated with the proposed project are those associated with vehicle trips (mobile emissions) and the use of natural gas, consumer products, and architectural coatings (area source emissions) upon buildout of the project. Pollutant emissions associated with the proposed project (shown in Table 11) were quantified using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, based on the proposed use and the number of associated vehicle trips generated by the project as discussed above. This analysis takes into account the removal of land uses currently existing on the project site. Emissions generated from the operation of a surface parking lot are primarily from mobile sources.



**Table 11  
 Estimated Operational Emissions**

|   | Emissions (lbs/day) |                 |             |                  |                   |
|---|---------------------|-----------------|-------------|------------------|-------------------|
|   | ROG                 | NO <sub>x</sub> | CO          | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Emissions from Proposed 3-Story Commercial Building with Subterranean Parking | 3.4                 | 5.1             | 20.1        | 3.6              | 1.0               |
| Emissions from Existing Surface Parking Lot                                   | (0.2)               | (<0.01)         | (<0.01)     | (0)              | (0)               |
| <b>Net New Emissions</b>  | <b>3.2</b>          | <b>5.1</b>      | <b>20.1</b> | <b>3.6</b>       | <b>1.0</b>        |
| <i>SCAQMD Thresholds</i>  | <i>55</i>           | <i>55</i>       | <i>550</i>  | <i>150</i>       | <i>50</i>         |
| <b>Exceed Thresholds?</b>   | <b>No</b>           | <b>No</b>       | <b>No</b>   | <b>No</b>        | <b>No</b>         |

Source: CalEEMod v. 2013.2.2

( ) denotes reduction

Note: Please see Appendix B for complete modeling results. For a conservative estimate of project emissions, construction and operational emissions were modeled and reported for the maximum day during the winter, since emission estimates are typically higher in the winter months compared to the summer months. Winter emission estimates are then compared to the SCAQMD thresholds measured in pounds-per-day. The annual emissions listed in the tables in Appendix B show the average annual emissions in terms of metric tons per year. These estimates are used for analysis of greenhouse gas emissions impacts, since the greenhouse gas emission thresholds are based on metric tons per year.

As shown in Table 11, the emissions generated by the proposed project would not exceed the SCAQMD’s daily operational thresholds and would not significantly affect regional air quality. Therefore, the impact is less than significant for the proposed project.

Construction Emissions. Development of the proposed project would involve site grading, excavation, renovation, and other construction-related activities that have the potential to generate substantial air pollutant emissions. Temporary construction emissions from these activities were estimated using CalEEMod, based on the gross amount of proposed new commercial and retail/restaurant space and the new parking. Table 12 shows the maximum daily construction emissions.

**Table 12  
 Estimated Construction Emissions**

|  | Emissions (lbs/day) |                 |            |                  |                   |
|--|---------------------|-----------------|------------|------------------|-------------------|
|  | ROG                 | NO <sub>x</sub> | CO         | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Maximum Daily Emissions                              | 40.1                | 19.0            | 16.1       | 2.3              | 1.4               |
| <i>SCAQMD Threshold</i>                              | <i>75</i>           | <i>100</i>      | <i>550</i> | <i>150</i>       | <i>55</i>         |
| <b>Exceed SCAQMD Threshold?</b>                      | <b>No</b>           | <b>No</b>       | <b>No</b>  | <b>No</b>        | <b>No</b>         |
| <i>Localized Significance Thresholds<sup>1</sup></i> | <i>N/A</i>          | <i>103</i>      | <i>562</i> | <i>4</i>         | <i>3</i>          |
| <b>Exceed LST?</b>                                   | <b>No</b>           | <b>No</b>       | <b>No</b>  | <b>No</b>        | <b>No</b>         |



Source: CalEEMod v. 2013.2.2

<sup>1</sup> Allowable emissions (lbs/day) as a function of receptor distance (25 meters) from site boundary, as derived from a regression analysis on the LSTs for one-acre sites in Source Receptor Area 2: Northwest Coastal LA County. Source: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>

Note: Please see Appendix C for complete modeling results. For a conservative estimate of project emissions, construction and operational emissions were modeled and reported for the maximum day during the winter, since emission estimates are typically higher in the winter months compared to the summer months. Winter emission estimates are then compared to the SCAQMD thresholds measured in pounds-per-day.

As indicated in Table 12, emissions from construction activities would not exceed SCAQMD daily significance thresholds and would not result in any significant air quality impacts. Moreover, SCAQMD Rule 403 requires the following measures to reduce fugitive dust; these are required to be implemented at all construction sites located within the South Coast Air Basin. Compliance with the SCAQMD Rule 403 measures would further reduce construction emissions.

1. **Minimization of Disturbance.** Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment.** Construction contractors should treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **Soil Stabilization.** Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.
4. **No Grading During High Winds.** Construction contractors should stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured over a one-hour period).
5. **Street Sweeping.** Construction contractors should sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

**Conclusion.** The proposed project would not generate significant air quality impacts. Additionally, as discussed in the Traffic section, this project would not result in significant increases in traffic at intersections. Thus, the project would not require analysis for CO hotspots, based on the recommendations contained in Caltrans' Transportation Project CO Protocol Manual.



## D. GREENHOUSE GAS EMISSIONS

Climate Change and Greenhouse Gases. Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHGs). GHGs contribute to the "greenhouse effect," which is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it warms the planet by approximately 60° Fahrenheit. Emissions from human activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature.

GHGs occur naturally and from human activities. Human activities that produce GHGs are the burning of fossil fuels (coal, oil and natural gas for heating and electricity, gasoline and diesel for transportation); methane from landfill wastes and raising livestock, deforestation activities; and some agricultural practices. Greenhouse gases produced by human activities include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). Since 1750, it is estimated that the concentrations of carbon dioxide, methane, and nitrous oxide in the atmosphere have increased over by 36%, 148%, and 18% respectively, primarily due to human activity. Emissions of GHGs affect the atmosphere directly by changing its chemical composition while changes to the land surface indirectly affect the atmosphere by changing the way in which the Earth absorbs gases from the atmosphere. Potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CEC, March 2009).

The adopted CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The 2008 SCAQMD threshold considers emissions of over 10,000 metric tons carbon dioxide equivalent (CO<sub>2</sub>e) per year to be significant. However, the SCAQMD's threshold applies only to stationary sources and is expressly intended to apply only when the SCAQMD is the CEQA lead agency. Although not yet adopted, the SCAQMD has a recommended tiered GHG significance threshold (SCAQMD, 2010). Under Tier 2, proposed projects would be less than significant if the project is consistent with an approved GHG reduction plan. Tier 3 includes screening level quantitative thresholds. As the City of Beverly Hills does not have an adopted GHG reduction plan or Climate Action Plan, the proposed project was compared to Tier 3 quantitative thresholds. SCAQMD has a recommended Tier 3 screening level quantitative threshold for all land use types of 3,000 metric tons CO<sub>2</sub>e /year.



**Proposed Project GHG Emissions.** GHG emissions associated with the proposed project were estimated using CalEEMod. The analysis focuses on CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> as these are the GHG emissions that onsite development would generate in the largest quantities. Emissions of fluorinated gases, such as HFCs, PFCs, and SF<sub>6</sub> would not be significant since fluorinated gases are primarily associated with industrial processes. Complete CalEEMod results and assumptions can be viewed in Appendix B.

**Construction Emissions.** Based on the CalEEMod results, construction activity for the project would generate an estimated 174 metric tons CO<sub>2</sub>e(as shown in Table 13) during construction. Amortized over a 30-year period (the assumed life of the project), construction of the proposed project would generate an estimated 5.8 metric tons CO<sub>2</sub>e per year. Emissions from construction are amortized for the purpose of comparison with annual operational emissions over the estimated 30-year life of the project.

**Table 13**  
**Estimated Construction Emissions**  
**of Greenhouse Gases**

|                         | <b>Construction Emissions<br/>(CO<sub>2</sub>e)</b> |
|-------------------------|---|
| Total Emissions         | 174 metric tons                                     |
| Amortized over 30 years | 5.8 metric tons per year                            |

Source: CalEEMod, 2013.2.2. See Appendix C for GHG emission worksheets and assumptions.

**Operational Indirect, Stationary Direct, and Mobile Emissions.** Long-term emissions relate to area sources, energy use, solid waste, water use, and transportation. Each of these sources is discussed below.

**Area Source Emissions.** Area emissions include consumer product use, the reapplication of architectural coatings, and landscape maintenance equipment. As shown in Table 14, area emissions are estimated at less than one metric ton CO<sub>2</sub>e per year.

**Energy Use.** Operation of the proposed project would consume both electricity and natural gas. Project operation would consume an estimated 536,935 kilowatt-hours [kWh] of electricity and 156,776 kBTU of natural gas per year (refer to Appendix C). The generation of electricity used by the project would occur at offsite power plants, much of which would be generated by the combustion of fossil fuels that yields CO<sub>2</sub>, and to a smaller extent N<sub>2</sub>O and CH<sub>4</sub>. As discussed above, annual electricity and natural gas emissions was calculated using CalEEMod, which has developed emission factors, based on the mix of fossil-fueled generation plants, hydroelectric power generation, nuclear power generation, and alternative energy sources associated with the regional grid. Electricity consumption associated with the project would generate approximately 154 metric tons CO<sub>2</sub>e per year. Natural gas use would generate approximately 8 metric tons CO<sub>2</sub>e per year. Thus, overall energy use from the proposed project would generate an estimated 162 metric tons CO<sub>2</sub>e per year.



*Solid Waste.* The CalEEMod output for greenhouse gas emissions from solid waste relies on current commercial waste disposal rates provided by CalRecycle. The project is assumed to have a waste diversion rate of 78 percent, which is standard in the City of Beverly Hills. Solid waste associated with the project would generate an estimated 2 metric tons of CO<sub>2</sub>e per year.

*Water Use.* Based on the amount of electricity generated in order to supply and convey water for the proposed project, the project would generate an estimated 20 metric tons of CO<sub>2</sub>e per year.

*Transportation.* Mobile source GHG emissions were estimated using the average daily trips for the proposed project (see the Traffic section above) and based on the total vehicle miles traveled (VMT) estimated in CalEEMod. The proposed project would generate about 1,346,177 annual VMT. The project would emit an estimated 566 metric tons of CO<sub>2</sub>e per year from CO<sub>2</sub> and CH<sub>4</sub>. CalEEMod does not calculate N<sub>2</sub>O emissions related to mobile sources. As such, N<sub>2</sub>O emissions were calculated based on the proposed project's VMT using calculation methods provided by the California Climate Action Registry General Reporting Protocol (January 2009). The proposed project would emit an estimated 29 metric tons of CO<sub>2</sub>e per year from N<sub>2</sub>O. Thus, the total mobile emissions would be 595 metric tons of CO<sub>2</sub>e per year.

*Combined Construction, Stationary and Mobile Source Emissions.* Table 14 combines the construction, operational, and mobile GHG emissions associated with development of the proposed project, and subtracts operational and mobile emissions associated with existing development on the project site.

For the proposed project, the combined annual gross emissions are estimated at 785 metric tons CO<sub>2</sub>e per year. As there would be an offset of emissions from the elimination of the existing surface parking use, the net emissions of the proposed project would be an estimated 782 metric tons CO<sub>2</sub>e per year. Thus, GHG emissions associated with the proposed project would not exceed the 3,000 metric tons CO<sub>2</sub>e per year threshold of significance, and impacts on climate change from GHG emissions would be less than significant.

**Table 14**  
**Combined Annual Emissions of Greenhouse Gases**

| Emission Source                           | Annual Emissions<br>(Metric Tons CO <sub>2</sub> e) |
|---|---|
| <b>Proposed Project</b>                   |   |
| Project Construction                      | 5.8   |
| Project Operational                       |   |
| Area                                      | <0.1  |
| Energy                                    | 162   |
| Solid Waste                               | 2   |
| Water                                     | 20  |
| Project Mobile                            | 566   |
| Project Mobile N <sub>2</sub> O Emissions | 29  |
| <b>Project Subtotal</b>                   | <b>785</b>  |



**Table 14  
 Combined Annual Emissions of Greenhouse Gases**

| Emission Source   | Annual Emissions<br>(Metric Tons CO <sub>2</sub> e) |
|---|---|
| <b>Existing Uses</b>  |   |
| Existing Operational Area   | <0.1  |
| Energy  | 3   |
| Solid Waste   | 0   |
| Water   | 0   |
| Existing Mobile   | 0   |
| <b>Existing Conditions Subtotal</b>                                   | <b>3</b>  |
| <b>Total Emissions from Proposed Project<br/>(Project - Existing)</b> | <b>782 metric tons CO<sub>2</sub>e</b>              |

Source: Tables 2.1 and 2.2 in CalEEMod annual worksheets, see Appendix C for calculations and for GHG emission factor assumptions.

( ) denotes subtraction

Conclusion. The proposed project is not expected to generate GHG emissions that would result in a significant impact.

## E. WATER QUALITY

Urban runoff can have a variety of deleterious effects. Oil and grease contain a number of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Heavy metals such as lead, cadmium, and copper are the most common metals found in urban stormwater runoff. These metals can be toxic to aquatic organisms, and have the potential to contaminate drinking water supplies. Nutrients from fertilizers, including nitrogen and phosphorous, can result in excessive or accelerated growth of vegetation or algae, resulting in oxygen depletion and additional impaired uses of water.

Currently, the project site is almost entirely covered with impervious surfaces, although a small amount of grass is located along Olympic Boulevard. Stormwater runoff currently enters storm drains on Olympic Boulevard and flows to existing City drainage facilities. Neither the permeability nor the hydrology of the site would substantially change with project implementation, as the amount of impervious surfaces with the proposed project would be comparable to or reduced compared to existing conditions.

Local Stormwater Pollution Prevention Plans (LSWPPPs) minimize impacts on water quality by requiring Best Management Practices (BMPs) to be utilized to control pollutant discharge. This applies to all development projects that are at least one acre in size (BHMC 9-4-508). Because the project is only 0.28 acres, neither a LSWPPP or a National Pollution Discharge Elimination System (NPDES) MS4 permit is required.

Conclusion. Due to the small size of the proposed project, the project would not adversely affect underground aquifers, drainage patterns, or surface water quality. Impacts related to water quality would be less than significant.



**Criterion (e)** *The site can be adequately served by all required utilities and public services.*

The project would be located in an existing highly urban area served by existing public utilities and services. A substantial increase in demand for services or utilities would not be anticipated with implementation of the proposed project. The City of Beverly Hills provides water, sewer, and solid waste collection services to the existing commercial and residential development and would continue to provide these services to the proposed project. Other services, including gas and electricity, would also continue to be provided to the proposed project by existing service providers. Thus, the project meets this criterion for exemption.

**Historic Resources.** State CEQA Guidelines Section 15300.2 states that a categorical exemption “shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.” The project site is developed as a surface parking lot and there are no structures present. The project site is not listed as a historic resource in the City’s 1985-1986 Beverly Hills Historic Resources Survey. The project site is not known to be associated with events that have made a significant contribution to California’s history and cultural heritage nor with the lives of persons who have historic importance. The project site does not appear to be eligible for listing on the National Register of Historic Places or the California Register of Historical Resources, or for designation as a City landmark. In the Beverly Hills Historic Resources Survey 1985-1986, the nearest property with historic importance is the Beverly Vista Elementary School, located approximately 0.5 mile northeast of the project site, which appears eligible for listing as a historic resource. The Beverly Vista Elementary School was designed by the architectural firm of Gable and Wyant in 1926 (Beverly Hills, 1986). Because the proposed commercial building would be located over a block away, on a different street, and surrounded by other buildings, it would not adversely affect the visual context of this eligible historic resource or any other historic resources. The proposed project would not result in a substantial adverse change in the significance of a historic resource.

## 5. SUMMARY

Based on this analysis, the proposed 9212 Olympic Boulevard Project meets all criteria for a Class 32 Categorical Exemption pursuant to Section 15332 of the *State CEQA Guidelines*.



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# **Appendix A**

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*Traffic and Parking Study*

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**9212 OLYMPIC BOULEVARD  
COMMERCIAL DEVELOPMENT  
TRAFFIC & PARKING STUDY  
BEVERLYHILLS - CALIFORNIA**

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Prepared for:

**EHI 9222, LLC  
C/O ETCO HOMES, Inc.  
Beverly Hills, California**

Prepared on:

**January 19, 2016**



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***COCO TRAFFIC PLANNERS, INC.***

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9212 OLYMPIC BOULEVARD  
COMMERCIAL DEVELOPMENT  
TRAFFIC & PARKING STUDY  
BEVERLY HILLS - CALIFORNIA

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**9212 OLYMPIC BOULEVARD COMMERCIAL DEVELOPMENT  
TRAFFIC AND PARKING STUDY  
BEVERLY HILLS - CALIFORNIA**

**EXECUTIVE SUMMARY**

A commercial development consisting of a 21,339 square feet (sf) of mixed-use, office and retail space, has been proposed at 9212 Olympic Boulevard in the City of Beverly Hills. The site consists of one lot, with about 12,000 square feet of land, and is located on the south side of the street, between Maple Drive and Palm Drive. An analysis was conducted to evaluate the potential traffic and parking impacts associated with the proposed project. It was found that the proposed development will have a negligible traffic impact upon the surrounding street system, thus requiring no mitigation measures. Area motorists will not be able to detect any change in traffic operations due to the traffic generated by the proposed project.

The proposed 9212 Olympic Boulevard mixed-use project will be supported by a 58 stall underground parking garage located beneath the building. The parking garage will have access from the alley parallel to, and to the south of Olympic Boulevard. The parking analysis conducted showed that the proposed supply is in line with both the expected project's peak parking demand, and the City of Beverly Hills Parking Code requirements. No on-street parking overflow will result from the development of this residential project. A loading zone with alley access measures 12 feet by 60 feet, and will accommodate simultaneously two trucks, which is in line with the City requirements. The location of the loading zone, and the limited quantity of truck trips generated by the proposed commercial building will not determine any circulation problems in the alley.

The proposed parking entrance in the alley will have no significant impact upon current street traffic operations due to the limited number of vehicle trips generated by the site. Traffic operations in the alley, as well as on the surrounding street system, will maintain the good levels of service currently observed, even after the addition of the traffic associated with the subject development.

\* \* \* \* \*



# COCO TRAFFIC PLANNERS, INC.

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January 19, 2016

Sam Kashani, Project Manager  
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Beverly Hills, California 90212

**Subject: 9212 OLYMPIC BOULEVARD COMMERCIAL DEVELOPMENT  
TRAFFIC AND PARKING STUDY, BEVERLY HILLS - CALIFORNIA**

Dear Mr. Kashani,

As authorized, we have conducted a comprehensive traffic impact analysis of your proposed commercial project located at 9212 Olympic Boulevard, in the City of Beverly Hills, California. The scope of work was discussed with, and agreed upon by Mr. Bijan Vaziri, Traffic Engineer with the City of Beverly Hills. This report analyzes the traffic and transportation impacts, associated with your proposed development, upon the surrounding street system.

For the purpose of this study the City found a concern with the project's impact upon four intersections. They include the intersections of Olympic Boulevard with: **1) Rexford Drive, 2) Maple Drive, 3) Palm Drive, and 4) Doheny Drive.** Traffic conditions at the key locations were analyzed under various scenarios, during the weekday commuter morning and evening peak hours, based upon the traffic study guidelines established by the City of Beverly hills. The findings and conclusions of our analysis are presented in this report with the necessary supporting data.

## **PROJECT DESCRIPTION**

The site consists of about 12,000 gross square feet (gsf) of land located on the south side of Olympic Boulevard, between Maple, and Palm Drive, in the City of Beverly hills, California. The site is zoned C-3T-2, and currently consists of a parking lot for rental cars. The site currently has one driveway on Olympic Boulevard. Adjacent parcels also are zoned for commercial uses and mostly are developed. Figure 1 shows the location of the subject site on a regional basis.

Figure 2 shows the site plan and its relationship to the adjacent street system. The proposed project consists of developing a three-story commercial building, with 21,339 gsf of mixed use commercial space, which translates into 20,292 sf of net space.



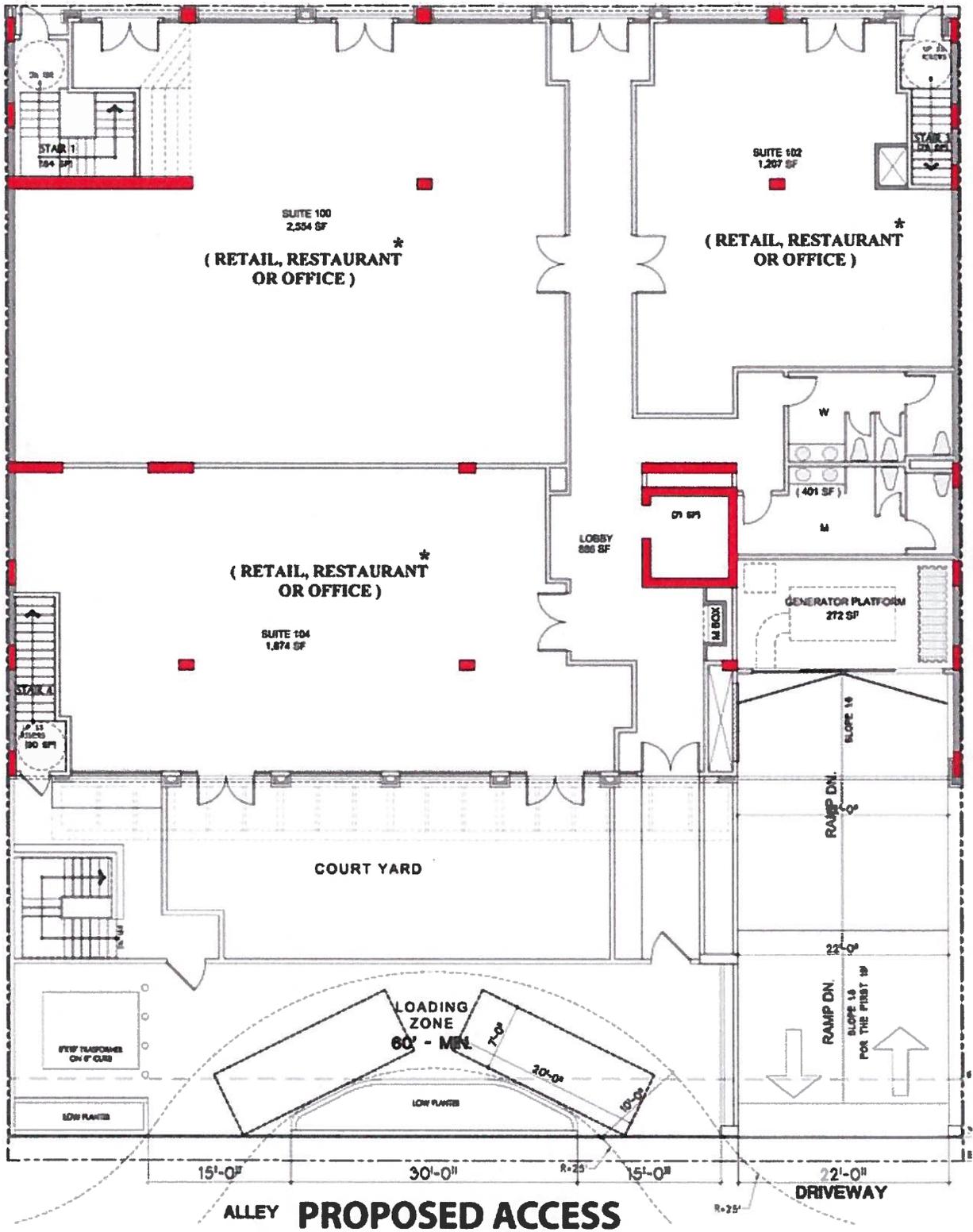


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# SITELOCATION MAP

# Olympic Boulevard

SIDEWALK



ALLEY **PROPOSED ACCESS**



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INCORPORATED

**BUCILLA  
GROUP  
ARCHITECTURE**

The project will be supported by a 58-stall three floors subterranean parking structure. A truck loading zone is provided at the ground level, and accommodates two trucks simultaneously. Access to the parking facility will be provided by a 22 foot driveway in the alley south of Olympic Boulevard. The existing driveway on Olympic Boulevard will be eliminated.

The year 2017 was assumed in our analysis as the first year of full operation of the project. It is estimated that by the end of 2017 the development will be completed and fully occupied. The purpose of this traffic study is to estimate the quantity of traffic that the proposed project is expected to add to the street system, and evaluate its impacts. Site plans and other pertinent information concerning the proposed development were obtained from Mr. Matt Hanson, of ETCO Homes.

## **DATA SOURCES**

Field investigations were made by our personnel to ascertain existing intersection geometry and street characteristics in the vicinity of the site, and the proposed location and operation of the project's access points.

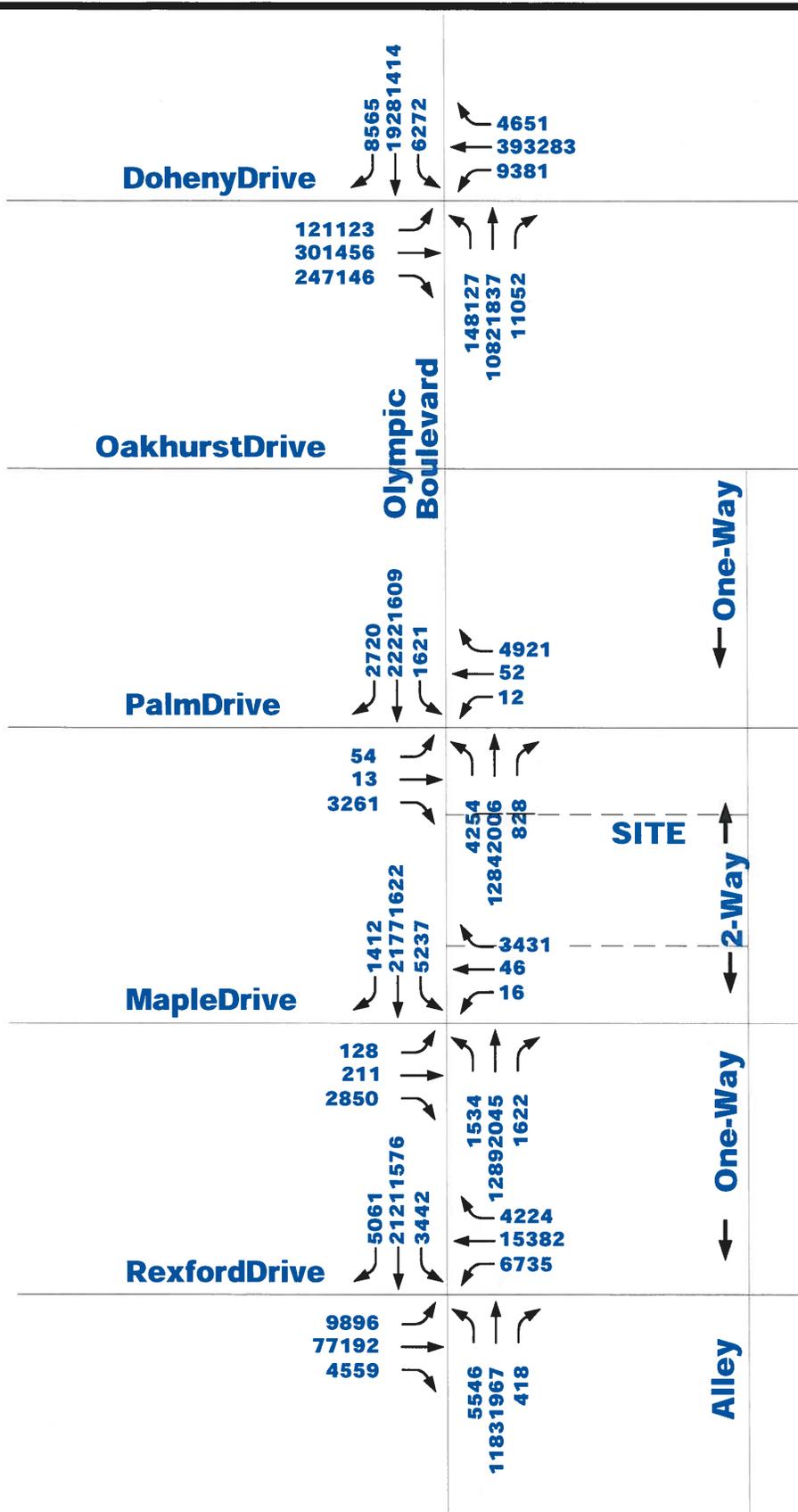
Peak period manual traffic counts were performed at our direction at the key intersections. The counts were conducted on Tuesday, July 21, 2015 during the morning (AM) and the evening (PM) peak periods, which were found to fall between the 7:00 to 9:00 AM and the 4:00 to 6:00 PM peak periods. The peak hours used in our analysis consist of the peak four consecutive 15-minute counts within the peak periods.

The results of all the traffic counts used in our analysis are summarized in Appendix A. The AM and PM peak volumes counted have been used for calculation purposes and represent the critical times associated with this part of the City of Beverly hills. The existing volumes (2015) used in the analysis are shown in Figure 3 both for the AM and the PM traffic conditions.

## **AREA LOCAL ROADWAY SYSTEM DESCRIPTION**

- **Rexford Drive** is a north-south local collector street providing one lane in each direction of travel, generally by a yellow centerline. The intersection of Rexford Drive and Olympic Boulevard is controlled by a traffic signal and provides left turn pocket lanes. Most other intersections within the project's vicinity are controlled by all-way, or side street stop signs. Rexford Drive serves low to mid density residential developments. Parking is prohibited on the west side of the roadway. Parking is allowed on the east side with a 2-hour limit between 8:00 AM and 6:00 PM posted, except by permit. No speed limit was observed along the roadway.





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**EXISTING(2015)  
 AMPMPEAKHOUR  
 TRAFFICVOLUMES**

- **Maple Drive** is a north-south local collector street providing one lane in each direction of travel, with no painted centerline. The intersection of Maple Drive and Olympic Boulevard is controlled by a Side-street Stop signs, with traffic free flowing on Olympic Boulevard. Most other intersections within the project's vicinity are controlled by all-way, or side street stop signs. Maple Drive serves low to mid density residential developments. In the vicinity of Olympic Boulevard parking is metered with 2-hour limit between 8:00 AM and 6:00. Away from that parking on Maple Drive is allowed on both sides of the street, regulated at most locations with 2-hour limit between 8:00 AM and 6:00, except by permit. No speed limit was observed along the roadway.
- **Palm Drive** is a north-south local collector street providing one lane in each direction of travel, with no painted centerline. The intersection of Palm Drive and Olympic Boulevard is controlled by a Side-street Stop signs, with traffic free flowing on Olympic Boulevard. Most other intersections within the project's vicinity are controlled by all-way, or side street stop signs. Palm Drive serves low to mid density residential developments, except in the vicinity of Olympic Boulevard, where commercial uses are found. In the commercial area parking is metered with 10-hour limit between 8:00 AM and 6:00. Away from that parking on Palm Drive is allowed on both sides of the street, regulated at most locations with 2-hour limit between 8:00 AM and 6:00, except by permit. In addition, no overnight parking is allowed between 2:30 and 5:00 AM, except by permit. No speed limit was observed along the roadway.
- **Doheny Drive** is a north-south secondary highway providing one lane in each direction of travel separated by a double yellow centerline lane. All major intersections with Doheny Drive are signalized and provide left turn pocket lanes. The street serves low and medium density residential developments, with commercial uses in the vicinity of Olympic Boulevard. Red Curbs exist in the commercial area, as the roadway flares up to provide three lanes in each direction, with one left, one through, and one through-right lanes in the south bound direction, while the northbound direction is striped with one left, one through, and one right only lanes. Parking is allowed on both sides of the street, with 2-hour limit between 8:00 AM and 6:00 away from Olympic Boulevard, and no overnight parking between 2:30 and 5:00 AM, except by permit, posted. In the vicinity of the commercial area No Stopping signs are prohibiting parking between 7:00 and 9:00 Am, and 4:00 to 6:00 PM. No speed limit was observed along the roadway.
- **Olympic Boulevard** is an east-west arterial roadway designated as Major Highway. It provides a total of six travel lanes, during peak periods, separated



by a two-way left turn lane. The street serves retail and commercial developments. Parking signs exist on both sides of the street, prohibiting parking between 7:00 and 9:00 AM, and 3:00 and 7:00 PM on the south side of the street, while on the north side the prohibition extends to 10 AM during the morning peak. During off peak hours the roadway provides two travel lanes in each direction, plus a two-way left turn median lane. All major intersections with Olympic Boulevard are controlled by traffic signals and provide separate left turn pocket lanes. Left turn lanes also are provided at non-signalized intersections. 35 mph speed limit signs are posted on Olympic Boulevard.

## **SITE TRAFFIC GENERATION**

Studies by the Institute of Transportation Engineers (ITE), Caltrans, ourselves and others have identified generalized factors which relate traffic characteristics with quantity and type of development. These traffic generation factors are useful in estimating the total future characteristics of a project yet to be constructed and occupied. Judgment is required on the part of the analyst to select the appropriate factors which best match the type of developments contemplated.

The quantity of floor area, number of employees, density of development, availability of public transportation, and regional location of the project all affect the traffic generation rate. While there are many different parameters upon which to estimate traffic (acreage, floor area square footage, employment, etc.), we determined that the best factors for the proposed development relate to the square footage of the different land uses included in the development.

In order to evaluate the quantity of traffic generated by the site, ITE traffic generation factors from the 9th Edition of the Traffic Generation Manual were applied to the proposed project's land use, for the daily and the morning and evening peak periods. As mentioned earlier, the AM and PM peak hours relate to a one-hour period within the 7:00 to 9:00 AM and the 4:00 to 6:00 PM peak periods respectively.

Table 1 shows in detail the generation factors used for analysis purposes along with the related volumes associated with the subject development during weekdays. The proposed office building is expected to generate about 650 vehicle trips per day (325 inbound and 325 outbound). Similarly, during the AM commuter peak hour, the project will generate a total of 39 vehicle trips (34 inbound and 5 outbound). The PM commuter peak hour traffic generation was estimated at 129 vehicle trips (33 inbound and 96 outbound). It should be noted that the retail section of the proposed development will not generate traffic during the morning commuter peak period because this type of land uses starts operations after 9:00 AM thus, after the commuter peak period. A negligible number of trips is expected during weekends, and was not included in our analysis.



TABLE 1

PROJECT TRAFFIC GENERATION  
9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| LAND USE | SIZE | UNIT | LAND USE CODE | AVERAGE DAILY TRAFFIC |        | AM PEAK HOUR |     |               |     | PM PEAK HOUR |     |               |     |
|----------|------|------|---------------|-----------------------|--------|--------------|-----|---------------|-----|--------------|-----|---------------|-----|
|          |      |      |               | Trip Ends (TE)        |        | TE Rate (1)  |     | Trip Ends (2) |     | TE Rate (1)  |     | Trip Ends (2) |     |
|          |      |      |               | Rate (1)              | TE (2) | In           | Out | In            | Out | In           | Out | In            | Out |

Proposed Project

|                                     |        |      |     |       |     |                        |      |    |   |                         |      |    |    |
|-------------------------------------|--------|------|-----|-------|-----|------------------------|------|----|---|-------------------------|------|----|----|
| General Office                      | 13.913 | KGSF | 710 | 21.00 | 292 | 2.44                   | 0.36 | 34 | 5 | 1.09                    | 5.30 | 16 | 74 |
| Specialty Retail Center (3)         | 7.426  | KGSF | 814 | 47.85 | 356 | 0.00                   | 0.00 | 0  | 0 | 2.27                    | 2.89 | 17 | 22 |
| Proposed Project Traffic Generation |        |      |     |       | 648 | <i>(AM Total = 39)</i> |      | 34 | 5 | <i>(PM Total = 129)</i> |      | 33 | 96 |

Existing Project

|                                  |        |      |     |      |   |                       |      |   |   |                       |      |   |   |
|----------------------------------|--------|------|-----|------|---|-----------------------|------|---|---|-----------------------|------|---|---|
| Car Storage/Rental (4)           | 12.000 | KGSF | 710 | 0.00 | 0 | 0.00                  | 0.00 | 0 | 0 | 0.00                  | 0.00 | 0 | 0 |
| Existing Site Traffic Generation |        |      |     |      | 0 | <i>(AM Total = 0)</i> |      | 0 | 0 | <i>(PM Total = 0)</i> |      | 0 | 0 |

|   |  |  |  |  |     |                        |  |    |   |                         |  |    |    |
|---|--|--|--|--|-----|------------------------|--|----|---|-------------------------|--|----|----|
| Proposed Project Net Traffic Generation |  |  |  |  | 648 | <i>(AM Total = 39)</i> |  | 34 | 5 | <i>(PM Total = 129)</i> |  | 33 | 96 |
|---|--|--|--|--|-----|------------------------|--|----|---|-------------------------|--|----|----|

- 1) TE Rate is the average number of Trip Ends generated per "SIZE" Unit (i.e. KGSF) per ITE Trip Generation Manual - 9th Edition.
- 2) Trip End is a one-way vehicle movement entering or leaving the traffic generator.
- 3) Specialty Retail Centers operate after 10:00 AM, so AM traffic generation during commuter AM peak hours are negligible.
- 4) Existing site traffic generation assumed as zero to evaluate traffic impact under a "worst case" scenario.

## **FUTURE RELATED PROJECTS TRAFFIC GENERATION**

The traffic impact of a project yet to be built requires the evaluation of the traffic volumes which will occur at the time when the project is constructed and fully operational. Future volumes, will include the traffic generated by those other area projects which currently are being proposed or built in the vicinity of the site. Our research of City files indicated that several such projects have been proposed in the vicinity of the subject site. However, based upon the list of related projects provided to us by the City of Beverly Hills, most of those projects contained in the list fall beyond the one half mile radius discussed with the City of Beverly Hills. Table 2 lists the developments that were considered in our analysis, which are located within half a mile from the proposed project. Their locations are shown in Figure 4. In order to also take into account the area proposed projects located beyond the one half mile radius, it was agreed with the city that our analysis should apply an “ambient growth” greater than the average 1.0 percent per year normally used in the City of Beverly Hills. As indicated later in this report, our analysis assumed a 1.5 percent per year traffic growth.

Table 3 shows in detail the generation factors used for analysis purposes as well as the related volumes. As shown in Table 3, at full development the related projects are expected to generate about 900 vehicle trips per day (450 inbound and 450 outbound), with an AM peak of 60 trips (33 inbound and 27 outbound), and a PM peak of 74 trips (35 inbound and 39 outbound). These volumes were used in our analysis.

## **TRAFFIC DISTRIBUTION**

Once the total quantity of traffic generated by a project is known, estimates are made of the directional distribution of this traffic. This will allow for an assignment of the vehicle trips to the roadway system to analyze the impacts. On a regional level, it was estimated that about 15 percent of the total site traffic volumes will be oriented to and from the north; 30 percent to and from the east; 25 percent to and from the south; and 30 percent to and from the west. The site traffic distribution used in the analysis is shown in Figure 5. The values shown are expressed in terms of percentage of total traffic generated.

Based upon the regional traffic distribution, the traffic volumes are then assigned locally to the study intersections for the AM and PM peak periods. The expected site traffic volumes were distributed to the adjacent street system based upon the manual traffic counts conducted, observations of peak hour traffic movements, the characteristics of the nearby street system, and the distribution of the population in the site environs. The assignment was based upon the assumption that traffic will follow the shortest route available. No attempt was made to reassign the traffic to alternate

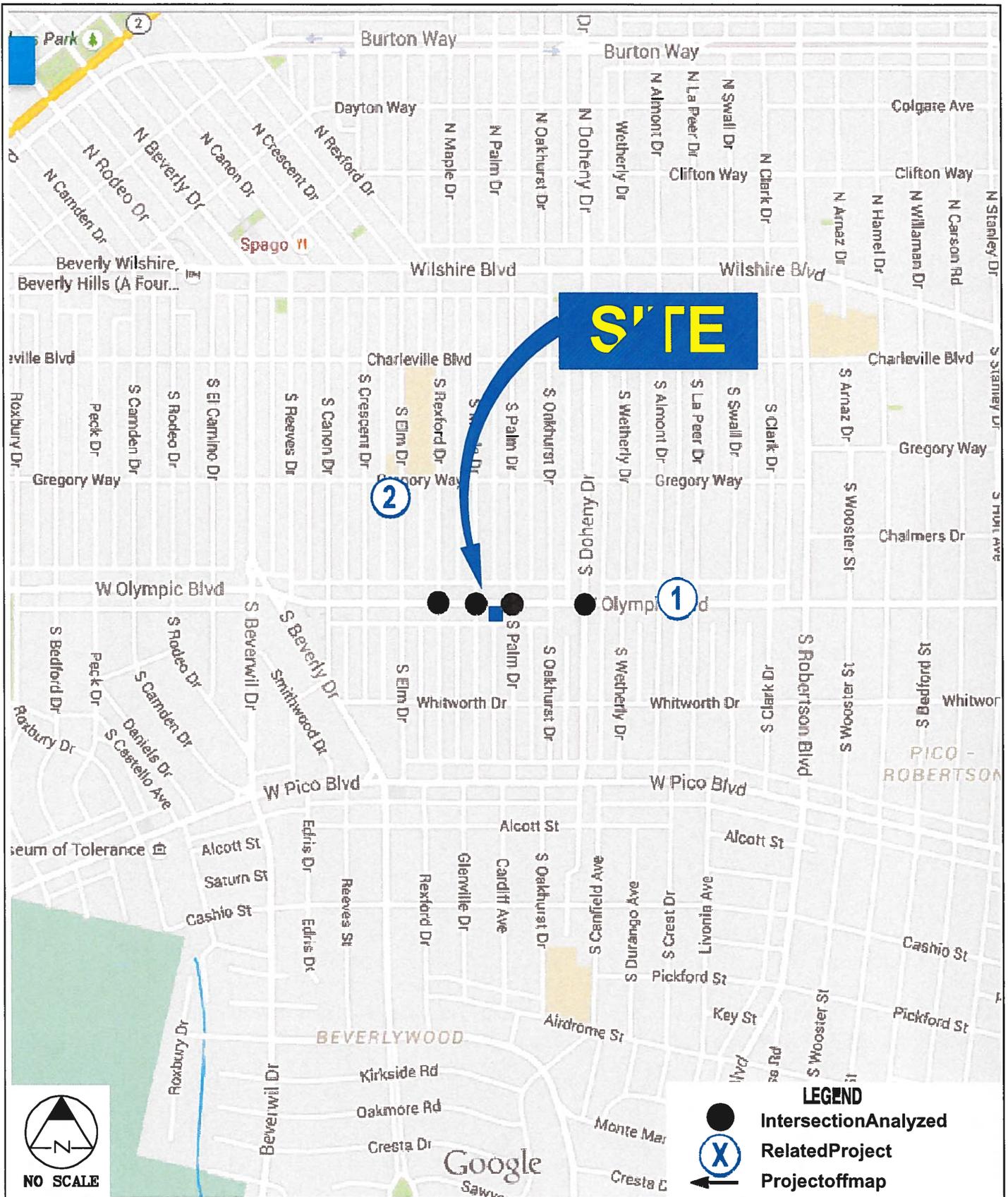


TABLE 2

RELATED PROJECTS LIST  
 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| Map # | Proposed Land Use | Size<br>Unit <sup>(1)</sup> | City<br>Case # | Location               | Status            |
|-------|-------------------|-----------------------------|----------------|------------------------|-------------------|
| 1     | New Cars Sales    | 19.8 KGSF                   | NA             | 8955 Olympic Boulevard | Under development |
| 2     | Condominium       | 30 DU                       | NA             | 305-339 S. Elm Drive   | Developed         |

1) DU = Dwelling Unit; KGSF = Thousand Gross Square Feet;



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**RELATED PROJECTS  
 LOCATION MAP**

TABLE 3

RELATED PROJECTS - TRAFFIC GENERATION  
 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| MAP #  | LAND USE       | SIZE | UNIT | LAND USE CODE | AVERAGE DAILY TRAFFIC |                   | AM PEAK HOUR |           |               |                   | PM PEAK HOUR |           |               |    |
|--|----------------|------|------|---------------|-----------------------|-------------------|--------------|-----------|---------------|-------------------|--------------|-----------|---------------|----|
|  |                |      |      |               | (1)                   | (2)               | TE Rate (1)  |           | Trip Ends (2) |                   | TE Rate (1)  |           | Trip Ends (2) |    |
|  |                |      |      |               | TE Rate               | Trip Ends         | In           | Out       | In            | Out               | Out          | In        | Out           |    |
| 1  | New Cars Sales | 19.8 | KGSF | 841           | 33.34                 | 660               | 1.502        | 0.528     | 30            | 10                | 1.010        | 1.580     | 20            | 31 |
| Related Project #1 Net Traffic Generation        |                |      |      |               | 660                   | <i>Total = 40</i> |              | 30        | 10            | <i>Total = 51</i> |              | 20        | 31            |    |
| 2  | Condominiums   | 30   | DU   | 230           | 7.52                  | 226               | 0.110        | 0.550     | 3             | 17                | 0.500        | 0.250     | 15            | 8  |
| Related Project #2 Net Traffic Generation        |                |      |      |               | 226                   | <i>Total = 20</i> |              | 3         | 17            | <i>Total = 23</i> |              | 15        | 8             |    |
| <b>RELATED PROJECTS TOTAL TRAFFIC GENERATION</b> |                |      |      |               | <b>886</b>            | <i>Total = 60</i> |              | <b>33</b> | <b>27</b>     | <i>Total = 74</i> |              | <b>35</b> | <b>39</b>     |    |

Note: DU = Dwelling Unit; KGSF = Thousand Gross Square Feet, KGLA = Thousand Gross Floor Area.

1) TE Rate is the average number of Trip Ends generated per "SIZE" Unit (i.e. DU) per ITE Trip Generation Manual - 9th Edition.

2) Trip End is a one-way vehicle movement entering or leaving the traffic generator.



routes. This would have reflected common motorists behavior trying to avoid congested intersections. The methodology used therefore, presents a worst case scenario.

Figure 6 shows the estimated traffic assignment for the proposed project's inbound and outbound vehicles, expressed as percentages of the total traffic generated. In addition, Figure 6 shows the traffic assignment at the project's driveways level. Figure 7 shows the proposed project's estimated morning and evening traffic volumes at the key intersections, along with the resulting traffic volumes again for the morning and evening conditions, at the driveways level.

## **ANALYSIS OF TRAFFIC CONDITIONS**

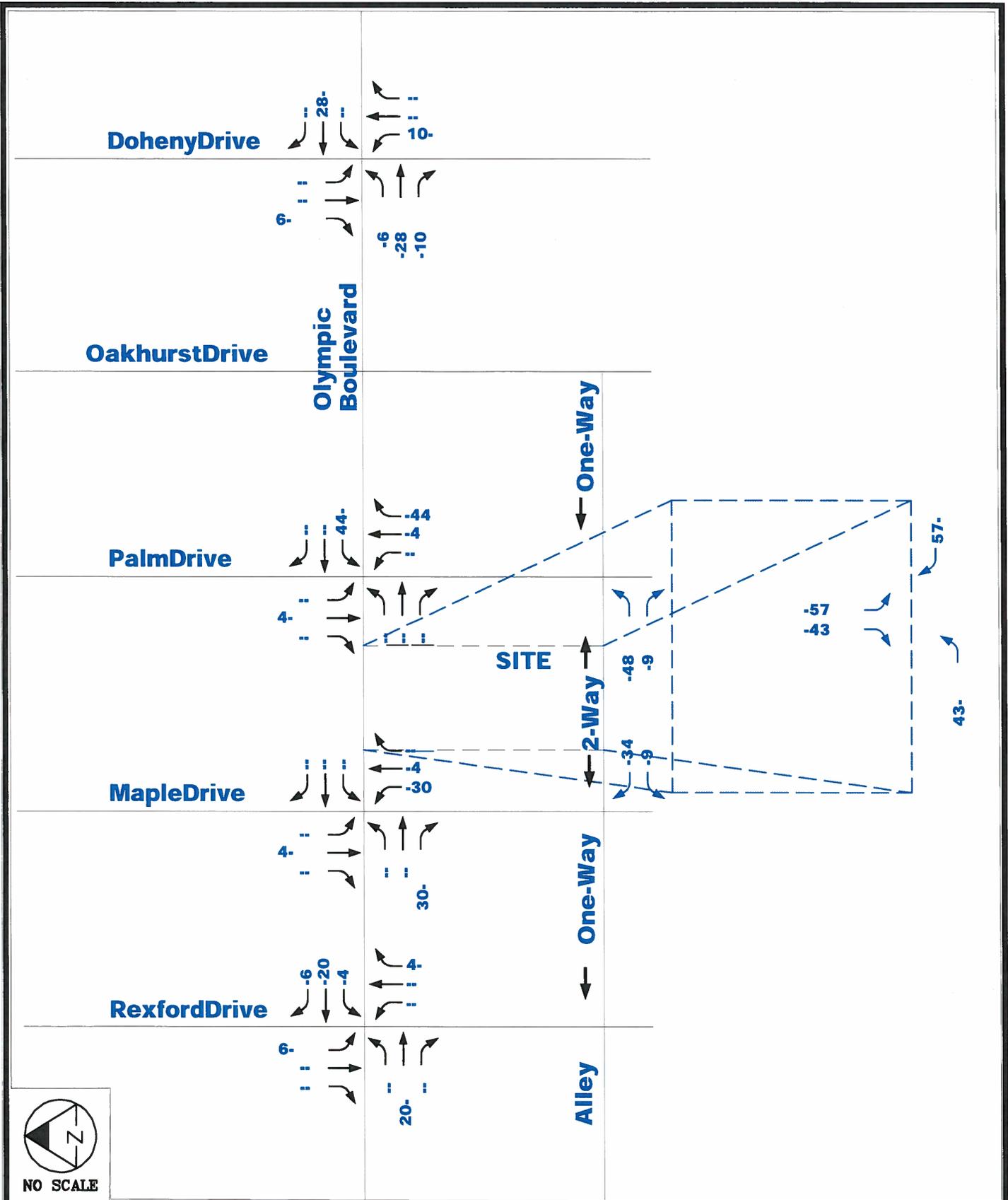
### **Signalized Intersections**

In order to analyze the operating characteristics at the key signalized locations, the Intersection Capacity Utilization (ICU) method was used. The basic ICU methodology consists of calculating the volume/capacity ratios for each of the critical turning movements which would determine traffic signal timing, add an allowance for yellow clearance times, and determine the total percentage of available capacity which is utilized by the approach volumes. A capacity of 1,600 vehicles per lane per hour of green time (vphG) was used for all movements, dual left turns were evaluated as having a capacity of 2,880 vphG.

The ICU value is related to Level of Service (LOS). LOS A through C represent good operating conditions with minimal delays. The ICU's associated with these levels are 0.000 to 0.600 for LOS A, 0.601 to 0.700 for LOS B, and 0.701 to 0.800 for LOS C respectively. LOS C is used by the City of Culver City as an urban design value. Some queues may occur with ICU's between 0.801 and 0.900, and LOS D which is taken as tolerable for short periods of time. LOS E represents congested traffic conditions with short stop-and-go type of operations characteristic of service volumes approaching capacity, represented by an ICU of between 0.901 and 1.000. LOS F represents forced flow conditions, extended stop-and-go type of operations, and service volumes beyond capacity. This condition is characterized by ICU's greater than 1.000.

The City of Beverly hills has established thresholds of traffic, beyond which a project's impact is "significant" thus requiring implementation of mitigation measures. These thresholds relate to the increase in the ICU index a project determines during peak hours. Specifically, the traffic impact is significant if: a) a project increases the ICU by 1.2 or more at an intersection operating at LOS E or worse; or b) a project increases the ICU by 0.03 or more at an intersection operating at LOS D or better. The ICU technique was applied to all the study intersections for the following conditions of increasing traffic:



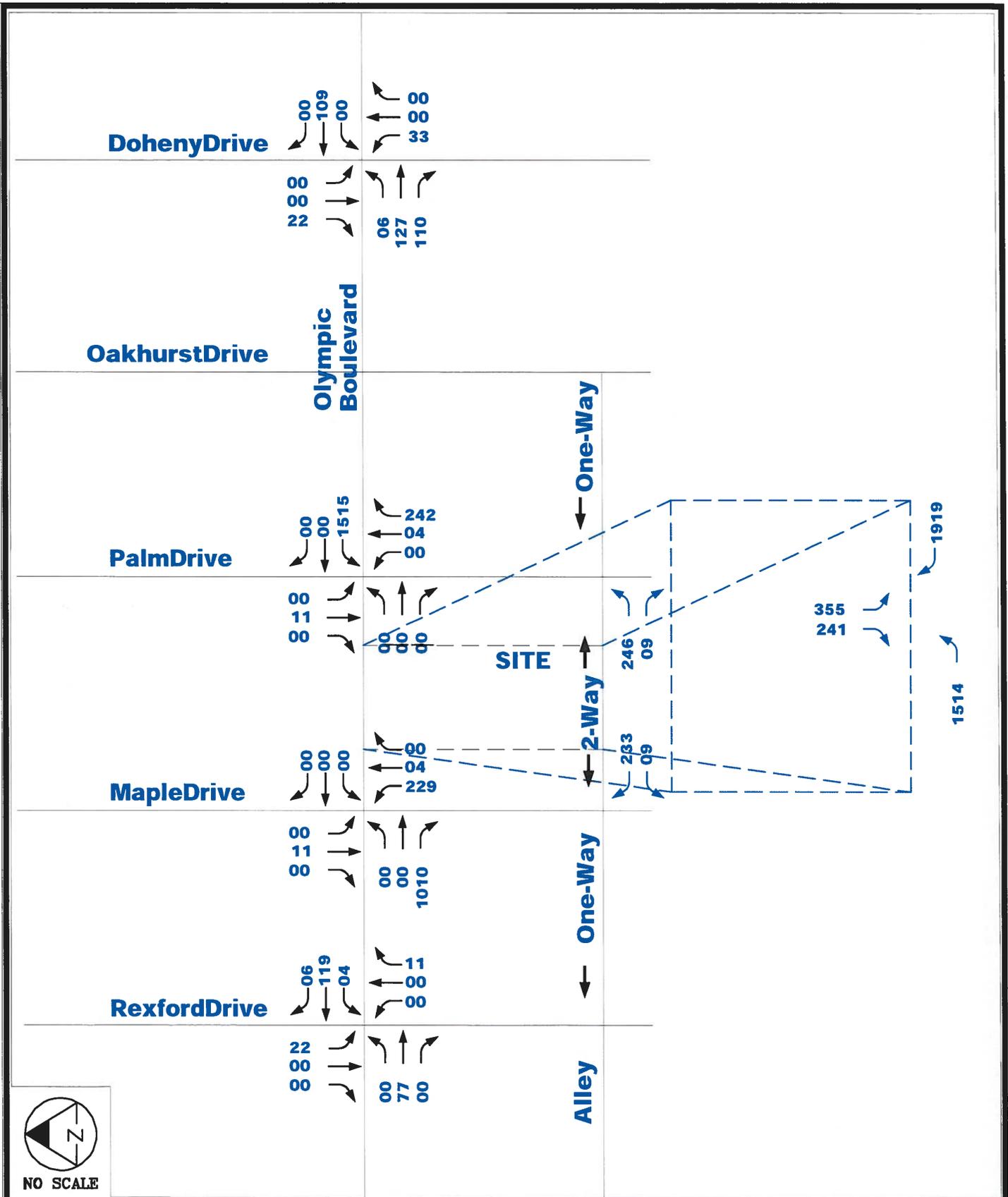


NO SCALE



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**PROPOSED PROJECT  
 TRAFFIC ASSIGNMENT**




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**PROPOSED PROJECT TRAFFIC VOLUMES**

1. Existing (2015) traffic volumes.
2. Future (2017) traffic volumes (expanded existing traffic).
3. Condition 2 plus related projects' traffic volumes (2017 Background).
4. Condition 3 plus proposed project's traffic volumes.
5. Condition 4 with mitigation measures (where applicable).

As indicated, Conditions 1 and 2 relate to the traffic volumes occurring during the year 2015 and 2017 respectively. The year 2017 was assumed as the first year of full operation of the proposed development. The volumes were obtained by expanding 2015 traffic volumes to the year 2017 with a 1.5 percent traffic growth rate per year. The annual growth is due to the combined effect of the increasing vehicle availability, intensification of use of existing developments and other factors. In the evaluation of the 2017 traffic, it will account for possible future developments not known at the present time, and those projects located beyond a half a mile radius from the proposed project location.

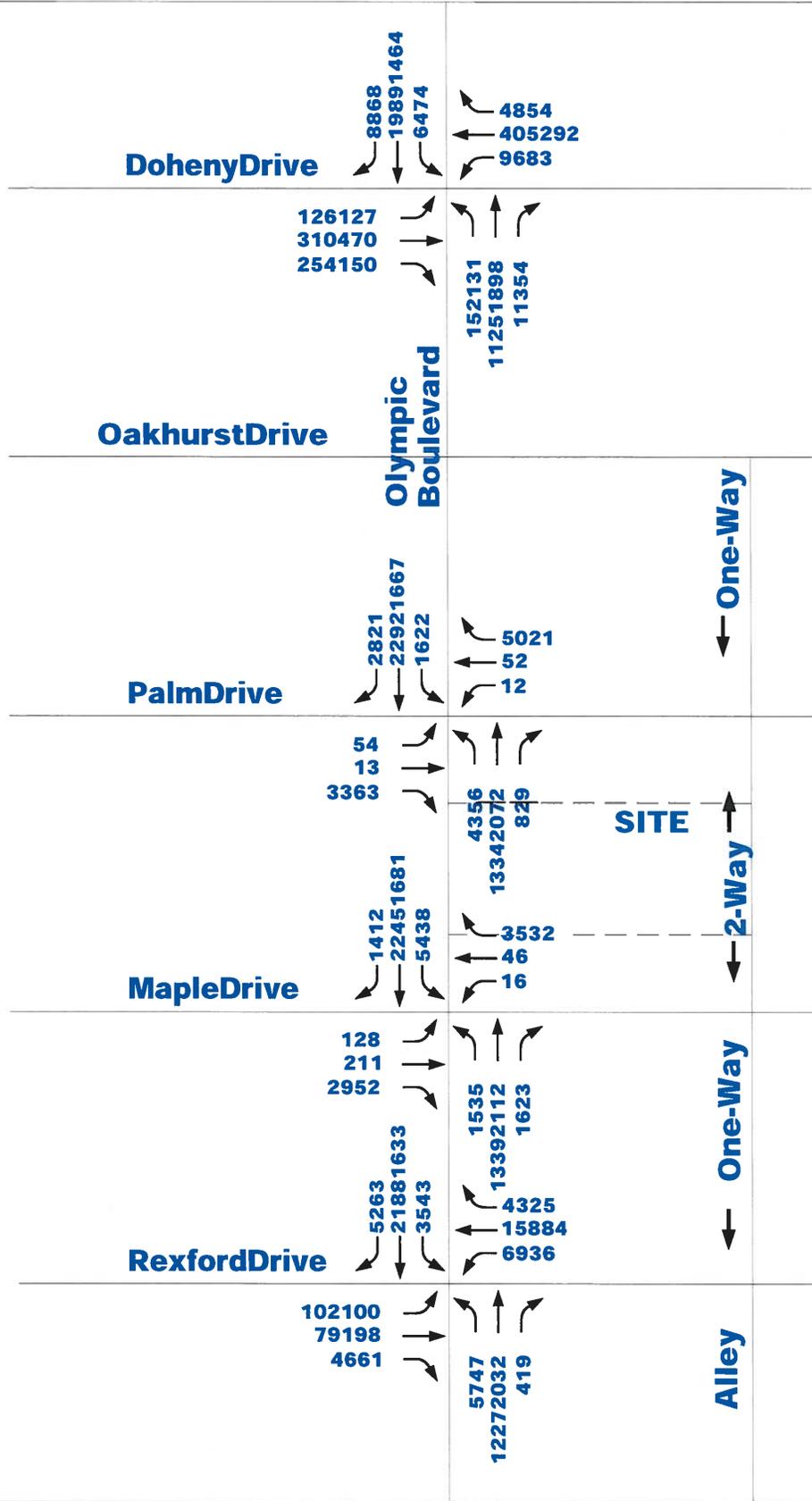
The 2017 background traffic volumes are shown in Figure 8 for the morning and the evening peak hours. It should be noted that the peak hours for the intersections analyzed, and for the traffic generators evaluated in this analysis (site and related projects) will not necessarily occur during the same single hour. In order to be conservative they have been assumed to occur simultaneously.

The results of the ICU calculations were summarized in Table 4. Appendix B shows the details of the ICU calculations for the analyzed intersection and for all the above mentioned traffic conditions for the AM and the PM peak periods. It should be noted that the ICU method was applied to all the key intersections (four), including those that are not signalized (two). While this methodology cannot be applied to non-signalized intersections, the results are useful in terms that are relative to the proposed project impact. In addition, the results show how those locations would operate if they were signalized. The analysis of non-signalized intersections is reported later in this chapter.

As reported in Table 4, under existing conditions the intersections operate at between LOS A and LOS C, during both the AM or the PM peak hours, except the intersection of Doheny Drive and Olympic Boulevard, which operates at LOS D during both the morning and the evening peak hours. With proportionally increased ICU's, traffic operations during the year 2017 show patterns similar to the existing conditions. Traffic conditions remain good, with traffic operations between LOS A and D during both peak hours, and virtually no change in LOS.

The addition of the related projects' traffic causes no significant impact at any locations during the AM, or the PM peak hours. The impact is identified on the right side of the





NO SCALE



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**2017 (BACKGROUND)  
 AM PM PEAK HOUR  
 TRAFFIC VOLUMES**

TABLE 4

ICU AND LOS  
SUMMARY

9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| INTERSECTION                      | TIME PERIOD | Existing (2015) Traffic Volumes | Future (2017) Expanded Volumes | Future 2017 With Related Projects Traffic Volumes | Future 2017 With Proposed Project Traffic Volumes | Total (2017) Traffic w/Mitigtn Measures | Intersection Capacity Utilization Method<br>Traffic Impact Analysis:<br>Change In Icu Index |                            |                            |
|-----------------------------------|-------------|---------------------------------|--------------------------------|---|---|---|---|----------------------------|----------------------------|
| North/South @ East/West           | AM PM       | ICU LOS                         | ICU LOS                        | ICU LOS   | ICU LOS   | ICU LOS                                 | Rel Projects Impact   | Site Traffic W/O Mitig.    | Impact W/Mitig.            |
| Rexford Drive @ Olympic Boulevard | AM          | 0.769<br>C                      | 0.791<br>C                     | 0.792<br>C  | 0.794<br>C  | 0.794<br>C                              | 0.002 *<br>Not Significant  | 0.002 *<br>Not Significant | 0.002 *<br>Not Significant |
|                                   | PM          | 0.718<br>C                      | 0.738<br>C                     | 0.739<br>C  | 0.743<br>C  | 0.743<br>C                              | 0.001 *<br>Not Significant  | 0.003<br>Not Significant   | 0.003<br>Not Significant   |
| Maple Drive @ Olympic Boulevard   | AM          | 0.592<br>A                      | 0.606<br>B                     | 0.607<br>B  | 0.607<br>B  | 0.607<br>B                              | 0.001<br>Not Significant  | 0.001<br>Not Significant   | 0.001<br>Not Significant   |
|                                   | PM          | 0.597<br>A                      | 0.612<br>B                     | 0.613<br>B  | 0.619<br>B  | 0.619<br>B                              | 0.001 *<br>Not Significant  | 0.006 *<br>Not Significant | 0.006 *<br>Not Significant |
| Palm Drive @ Olympic Boulevard    | AM          | 0.629<br>B                      | 0.645<br>B                     | 0.645<br>B  | 0.647<br>B  | 0.647<br>B                              | 0.001<br>Not Significant  | 0.001<br>Not Significant   | 0.001<br>Not Significant   |
|                                   | PM          | 0.579<br>A                      | 0.594<br>A                     | 0.595<br>A  | 0.606<br>B  | 0.606<br>B                              | 0.001 *<br>Not Significant  | 0.010<br>Not Significant   | 0.010<br>Not Significant   |
| Doheny Drive @ Olympic Boulevard  | AM          | 0.859<br>D                      | 0.881<br>D                     | 0.881<br>D  | 0.886<br>D  | 0.886<br>D                              | 0.001<br>Not Significant  | 0.004<br>Not Significant   | 0.004<br>Not Significant   |
|                                   | PM          | 0.875<br>D                      | 0.897<br>D                     | 0.898<br>D  | 0.908<br>E  | 0.908<br>E                              | 0.001<br>Not Significant  | 0.010<br>Not Significant   | 0.010<br>Not Significant   |

\* = Intersection with peak impact

|               |       |       |       |
|---------------|-------|-------|-------|
| Max AM Impact | 0.002 | 0.002 | 0.002 |
| Max PM Impact | 0.001 | 0.006 | 0.006 |

Tables, under the heading “Intersection Capacity Utilization Method - Change in ICU Index”. This section of the Table calculates the relative traffic impact of the related projects, as well as that of the proposed development. No change in LOS will be experienced at the study intersections.

The addition of the proposed development project’s traffic determines a relatively low traffic impacts at all locations, and causes no “significant” impact at any of the intersections analyzed. Overall, the subject development will have a negligible impact upon area traffic operations. The site traffic will cause no change in LOS at any of the analyzed intersections, except at the intersection of Doheny Drive and Olympic Boulevard, which will operate at LOS E, during the evening peak hour, from LOS D. The project’s maximum traffic impact will be experienced at the intersection of Rexford/Olympic, with an ICU increase of 0.002 at LOS C during the AM peak hour. The project’s maximum traffic impact during the PM peak hour will be 0.006, experienced at the intersection of Maple/Olympic at LOS B. Consequently, no mitigation measures were provided, as none was needed.

### **Two-Way Stop Control Intersection**

As indicated above, the ICU analysis conducted assumes that all the key intersections are signalized. However, the intersections of Olympic Boulevard with Maple Drive, and Olympic Boulevard with Palm Drive are controlled by side street STOP signs, with traffic free-flowing on Olympic Boulevard, and stopping on Maple and Palm Drives respectively. Still, the ICU analysis conducted allows us to determine the proposed project’s relative impact upon that intersection, and to verify the need for more detailed analysis. The subject intersections therefore, were analyzed through the use of a methodology, reported in the Special Report 209 of the Highway Capacity Manual (HCM) 2000 Edition, for Two-Way Stop-Controlled (TWSC) intersections.

The methodology consists of evaluating the “Average Total Delay” (ATD) of the intersection’s critical movements. The ATD is related to the number of approach lanes, the vehicle volumes and other factors. The ATD is identified with the level of service, according to the following criteria: LOS A for delays of between zero and ten seconds; LOS B for delays between ten and 15 seconds; LOS C for delays between 15 and 25 seconds; these levels of service represent good operating conditions with minimal or acceptable delays. LOS D for delays between 25 and 35 seconds; LOS E for delays between 35 and 50 seconds; LOS F for delays of more than 50 seconds. The TWSC methodology was applied to the two intersections reported above for the following conditions of increasing traffic:

1. Existing (2015) traffic volumes.



2. Future (2017) traffic volumes (expanded existing traffic).
3. Condition 2 with related projects traffic volumes.
4. Condition 3 plus proposed project's traffic volumes.

The results of the volume/capacity calculations were summarized in Table 5 for the intersection of Maple/Olympic, and in Table 6 for Palm/Olympic. As indicated in Table 5, under existing (2015), and future (without project) traffic conditions, the intersection of Maple/Olympic will operate at LOS A and an average total delay of less than 0.2 seconds, and about 0.3 seconds per vehicle, respectively for the morning and the evening peak hours. The major street left turn movements into Maple Drive were estimated to operate at LOS A during both the morning and the evening peak hours. These are good traffic conditions.

The north and southbound left turn movements out of Maple Drive operate at LOS D during the evening peak hour, with delays of 26.1 and 25.1 seconds per vehicle, respectively for north and southbound movements. A minor increase in total delays will be experienced during the year 2017, due to the traffic expansion factor, with no change in LOS. Minor increases in delays also will be experienced as a result of the Related Project's traffic.

As anticipated by the ICU calculations, the addition of the site project traffic causes minor impacts at the subject intersection. A change in LOS will be experienced at that location where the northbound left turn movement will operate at LOS E, with an average delay of 36.4 seconds during the PM peak hour. Overall the total per vehicle delay will be 0.6 seconds during the evening peak hour at LOS A, with no change during the morning peak. No change in LOS will be experienced by any of the major street left turning movements.

As indicated in Table 6, under existing (2015) traffic conditions, the intersection of Palm/Olympic operates at LOS A and an average total delay of less than 0.2 seconds per vehicle for the morning and the evening peak hours. The major street left turn movements into Palm Drive were estimated to operate at LOS A during both the morning and the evening peak hours. The north and southbound left turn movements out of Palm Drive operate at LOS C during both peak hours, with maximum delays of 24.5 and 22.9 seconds per vehicle during the evening peak, respectively for north and southbound movements. These are good traffic conditions.

A minor increase in total delays will be experienced during the year 2017, which will cause a change in LOS at the northbound left turning movements, from LOS C to D during the evening peak hour. Minor increases in delays also will be experienced as a result of the Related Project's traffic, with no change in LOS. As anticipated by the ICU calculations, the addition of the site project traffic causes minor impacts at the subject



TABLE 5

INTERSECTION CAPACITY ANALYSIS SUMMARY  
 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| MOVEMENT  | DELAY AND LEVEL OF SERVICE             |      |             |       |                     |                    |  |      |             |       |                     |                    |
|---|--|------|-------------|-------|---------------------|--------------------|--|------|-------------|-------|---------------------|--------------------|
|   | Morning (AM) Peak Hour Traffic Volumes |      |             |       |                     |                    | Evening (PM) Peak Hour Traffic Volumes |      |             |       |                     |                    |
|   | Individual Movement                    |      |             |       | Cumulative Approach | Intersection Total | Individual Movement                    |      |             |       | Cumulative Approach | Intersection Total |
|   | Exclusive Lane                         |      | Shared Lane |       |                     |                    | Exclusive Lane                         |      | Shared Lane |       |                     |                    |
| atd*  | LOS                                    | atd* | LOS         | Da ** | Di ***              | atd*               | LOS                                    | atd* | LOS         | Da ** | Di ***              |                    |
| Maple Drive / Olympic Boulevard - Existing (2015) Traffic Volumes                               |  |      |             |       |                     |                    |  |      |             |       |                     |                    |
| Nb Left   | 21.0                                   | C    |             |       |                     |                    | 26.1                                   | D    |             |       |                     |                    |
| Nb Thru   | 15.2                                   | C    | 6.5         | A     | 7.2                 | 0.2                | 16.7                                   | C    | 9.1         | A     | 11.7                | 0.3                |
| Nb Right  | 5.8                                    | A    |             |       |                     |                    | 8.0                                    | A    |             |       |                     |                    |
| Sb Left   | 22.4                                   | C    |             |       |                     |                    | 25.1                                   | D    |             |       |                     |                    |
| Sb Thru   | 15.1                                   | C    | 8.4         | A     | 12.7                |                    | 17.1                                   | C    | 8.3         | A     | 10.6                |                    |
| Sb Right  | 8.4                                    | A    |             |       |                     |                    | 6.9                                    | A    |             |       |                     |                    |
| Eb Left   | 3.4                                    | A    |             |       |                     |                    | 3.1                                    | A    |             |       |                     |                    |
| Wb Left   | 2.9                                    | A    |             |       |                     | 3.4                | A                                      |      |             |       |                     |                    |
| Maple Drive / Olympic Boulevard - Future (2017) Background Traffic Volumes                      |  |      |             |       |                     |                    |  |      |             |       |                     |                    |
| Nb Left   | 22.3                                   | C    |             |       |                     | 0.2                | 27.9                                   | D    |             |       |                     | 0.3                |
| Nb Thru   | 15.9                                   | C    | 6.6         | A     | 7.3                 |                    | 17.5                                   | C    | 9.4         | A     | 12.2                |                    |
| Nb Right  | 5.9                                    | A    |             |       |                     |                    | 8.2                                    | A    |             |       |                     |                    |
| Sb Left   | 23.9                                   | C    |             |       |                     |                    | 26.9                                   | D    |             |       |                     |                    |
| Sb Thru   | 15.7                                   | C    | 8.6         | A     | 13.3                |                    | 18.0                                   | C    | 8.5         | A     | 11.0                |                    |
| Sb Right  | 8.7                                    | A    |             |       |                     |                    | 7.1                                    | A    |             |       |                     |                    |
| Eb Left   | 3.4                                    | A    |             |       |                     | 3.1                | A                                      |      |             |       |                     |                    |
| Wb Left   | 3.0                                    | A    |             |       |                     | 3.4                | A                                      |      |             |       |                     |                    |
| Maple Drive / Olympic Boulevard - Background (2017) Traffic Volumes w/Related Projects' Traffic |  |      |             |       |                     |                    |  |      |             |       |                     |                    |
| Nb Left   | 22.5                                   | C    |             |       |                     | 0.2                | 28.1                                   | D    |             |       |                     | 0.3                |
| Nb Thru   | 16.0                                   | C    | 6.6         | A     | 7.3                 |                    | 17.6                                   | C    | 9.4         | A     | 12.2                |                    |
| Nb Right  | 5.9                                    | A    |             |       |                     |                    | 8.2                                    | A    |             |       |                     |                    |
| Sb Left   | 24.1                                   | C    |             |       |                     |                    | 27.1                                   | D    |             |       |                     |                    |
| Sb Thru   | 15.9                                   | C    | 8.6         | A     | 13.3                |                    | 18.1                                   | C    | 8.5         | A     | 11.1                |                    |
| Sb Right  | 8.7                                    | A    |             |       |                     |                    | 7.1                                    | A    |             |       |                     |                    |
| Eb Left   | 3.4                                    | A    |             |       |                     | 3.1                | A                                      |      |             |       |                     |                    |
| Wb Left   | 3.0                                    | A    |             |       |                     | 3.4                | A                                      |      |             |       |                     |                    |
| Maple Drive / Olympic Boulevard - Background (2017) Traffic Volumes w/ Site Traffic             |  |      |             |       |                     |                    |  |      |             |       |                     |                    |
| Nb Left   | 22.8                                   | C    |             |       |                     | 0.2                | 36.4                                   | E    |             |       |                     | 0.6                |
| Nb Thru   | 15.9                                   | C    | 6.6         | A     | 8.1                 |                    | 18.0                                   | C    | 10.2        | B     | 22.3                |                    |
| Nb Right  | 5.9                                    | A    |             |       |                     |                    | 8.2                                    | A    |             |       |                     |                    |
| Sb Left   | 23.9                                   | C    |             |       |                     |                    | 27.5                                   | D    |             |       |                     |                    |
| Sb Thru   | 15.9                                   | C    | 8.8         | A     | 13.3                |                    | 18.2                                   | C    | 8.7         | A     | 11.2                |                    |
| Sb Right  | 8.7                                    | A    |             |       |                     |                    | 7.1                                    | A    |             |       |                     |                    |
| Eb Left   | 3.4                                    | A    |             |       |                     | 3.1                | A                                      |      |             |       |                     |                    |
| Wb Left   | 3.0                                    | A    |             |       |                     | 3.4                | A                                      |      |             |       |                     |                    |

atd\* = Average Total Delay (sec/veh); Da = Approach Average Total Delay (sec/veh);  
 Di = Average Total Delay for the Intersection (sec).

TABLE 6

INTERSECTION CAPACITY ANALYSIS SUMMARY  
 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills

| MOVEMENT   | DELAY AND LEVEL OF SERVICE             |     |             |     |                     |                    |  |      |             |     |                     |                    |  |     |
|--|--|-----|-------------|-----|---------------------|--------------------|--|------|-------------|-----|---------------------|--------------------|--|-----|
|  | Morning (AM) Peak Hour Traffic Volumes |     |             |     |                     |                    | Evening (PM) Peak Hour Traffic Volumes |      |             |     |                     |                    |  |     |
|  | Individual Movement                    |     |             |     | Cumulative Approach | Intersection Total | Individual Movement                    |      |             |     | Cumulative Approach | Intersection Total |  |     |
|  | Exclusive Lane                         |     | Shared Lane |     |                     |                    | Exclusive Lane                         |      | Shared Lane |     |                     |                    |  |     |
|  | atd*                                   | LOS | atd*        | LOS | Da **               | Di ***             | atd*                                   | LOS  | atd*        | LOS | Da **               | Di ***             |  |     |
| Palm Drive / Olympic Boulevard - Existing (2015) Traffic Volumes                               |  |     |             |     |                     |                    |  |      |             |     |                     |                    |  |     |
| Nb Left  | 21.2                                   | C   |             |     |                     |                    | 24.5                                   | C    |             |     |                     |                    |  |     |
| Nb Thru  | 15.3                                   | C   | 6.5         | A   | 7.0                 | 0.2                | 16.2                                   | C    | 8.1         | A   | 9.7                 | 0.2                |  |     |
| Nb Right   | 5.9                                    | A   |             |     |                     |                    | 7.7                                    | A    |             |     |                     |                    |  |     |
| Sb Left  | 22.3                                   | C   |             |     |                     |                    | 22.9                                   | C    |             |     |                     |                    |  |     |
| Sb Thru  | 15.0                                   | B   | 8.2         | A   | 10.6                |                    | 16.3                                   | C    | 6.7         | A   | 8.3                 |                    |  |     |
| Sb Right   | 8.6                                    | A   |             |     |                     |                    | 7.0                                    | A    |             |     |                     |                    |  |     |
| Eb Left  | 3.5                                    | A   |             |     |                     |                    | 3.1                                    | A    |             |     |                     |                    |  |     |
| Wb Left  | 2.8                                    | A   |             |     |                     |                    | 3.3                                    | A    |             |     |                     |                    |  |     |
| Palm Drive / Olympic Boulevard - Future (2017) Background Traffic Volumes                      |  |     |             |     |                     |                    |  |      |             |     |                     |                    |  |     |
| Nb Left  | 22.5                                   | C   |             |     |                     |                    | 0.2                                    | 26.2 | D           |     |                     |                    |  | 0.2 |
| Nb Thru  | 15.9                                   | C   | 6.6         | A   | 7.3                 | 17.0               |  | C    | 8.3         | A   | 10.0                |                    |  |     |
| Nb Right   | 6.1                                    | A   |             |     |                     | 7.9                |  | A    |             |     |                     |                    |  |     |
| Sb Left  | 23.6                                   | C   |             |     |                     | 24.4               |  | C    |             |     |                     |                    |  |     |
| Sb Thru  | 15.7                                   | C   | 8.5         | A   | 11.0                | 17.0               |  | C    | 6.8         | A   | 8.6                 |                    |  |     |
| Sb Right   | 8.9                                    | A   |             |     |                     | 7.2                |  | A    |             |     |                     |                    |  |     |
| Eb Left  | 3.6                                    | A   |             |     |                     | 3.2                |  | A    |             |     |                     |                    |  |     |
| Wb Left  | 2.9                                    | A   |             |     |                     | 3.3                |  | A    |             |     |                     |                    |  |     |
| Palm Drive / Olympic Boulevard - Background (2017) Traffic Volumes w/Related Projects' Traffic |  |     |             |     |                     |                    |  |      |             |     |                     |                    |  |     |
| Nb Left  | 22.7                                   | C   |             |     |                     | 0.2                | 26.4                                   | D    |             |     |                     | 0.2                |  |     |
| Nb Thru  | 16.0                                   | C   | 6.7         | A   | 7.3                 |                    | 17.1                                   | C    | 8.3         | A   | 10.0                |                    |  |     |
| Nb Right   | 6.1                                    | A   |             |     |                     |                    | 7.9                                    | A    |             |     |                     |                    |  |     |
| Sb Left  | 23.9                                   | C   |             |     |                     |                    | 24.6                                   | C    |             |     |                     |                    |  |     |
| Sb Thru  | 15.7                                   | C   | 8.5         | A   | 11.0                |                    | 17.2                                   | C    | 6.9         | A   | 8.6                 |                    |  |     |
| Sb Right   | 8.9                                    | A   |             |     |                     |                    | 7.2                                    | A    |             |     |                     |                    |  |     |
| Eb Left  | 3.6                                    | A   |             |     |                     |                    | 3.2                                    | A    |             |     |                     |                    |  |     |
| Wb Left  | 2.9                                    | A   |             |     |                     |                    | 3.3                                    | A    |             |     |                     |                    |  |     |
| Palm Drive / Olympic Boulevard - Background (2017) Traffic Volumes w/ Site Traffic             |  |     |             |     |                     |                    |  |      |             |     |                     |                    |  |     |
| Nb Left  | 23.5                                   | C   |             |     |                     | 0.2                | 27.5                                   | D    |             |     |                     | 0.3                |  |     |
| Nb Thru  | 16.5                                   | C   | 6.7         | A   | 7.3                 |                    | 18.0                                   | C    | 8.6         | A   | 10.0                |                    |  |     |
| Nb Right   | 6.1                                    | A   |             |     |                     |                    | 8.7                                    | A    |             |     |                     |                    |  |     |
| Sb Left  | 24.6                                   | C   |             |     |                     |                    | 29.0                                   | D    |             |     |                     |                    |  |     |
| Sb Thru  | 16.3                                   | C   | 8.7         | A   | 11.2                |                    | 17.8                                   | C    | 7.1         | A   | 9.0                 |                    |  |     |
| Sb Right   | 8.9                                    | A   |             |     |                     |                    | 7.2                                    | A    |             |     |                     |                    |  |     |
| Eb Left  | 3.6                                    | A   |             |     |                     |                    | 3.2                                    | A    |             |     |                     |                    |  |     |
| Wb Left  | 2.9                                    | A   |             |     |                     |                    | 3.4                                    | A    |             |     |                     |                    |  |     |

atd\* = Average Total Delay (sec/veh); Da = Approach Average Total Delay (sec/veh);  
 Di = Average Total Delay for the Intersection (sec).

intersection, which will operate at LOS A. The only change in LOS will be experienced by the southbound left turning movements, from LOS C to D, and delays from 24.6 to 29.0 seconds per vehicle, during the evening peak hour. This good traffic conditions do not require any mitigation measures consequently, none was proposed.

As indicated above, Appendix B shows the details of the ICU and HCM calculations for the analyzed intersections and for all the above mentioned traffic conditions both for AM and PM peak periods. Figure 9 shows the total future traffic volumes which will occur during the year 2017, thus including the proposed project traffic. Figure 10 shows the analyzed intersections' current lane configuration, along with the existing traffic signal phasing, as used in the analysis.

### **SITE ACCESS AND CIRCULATION**

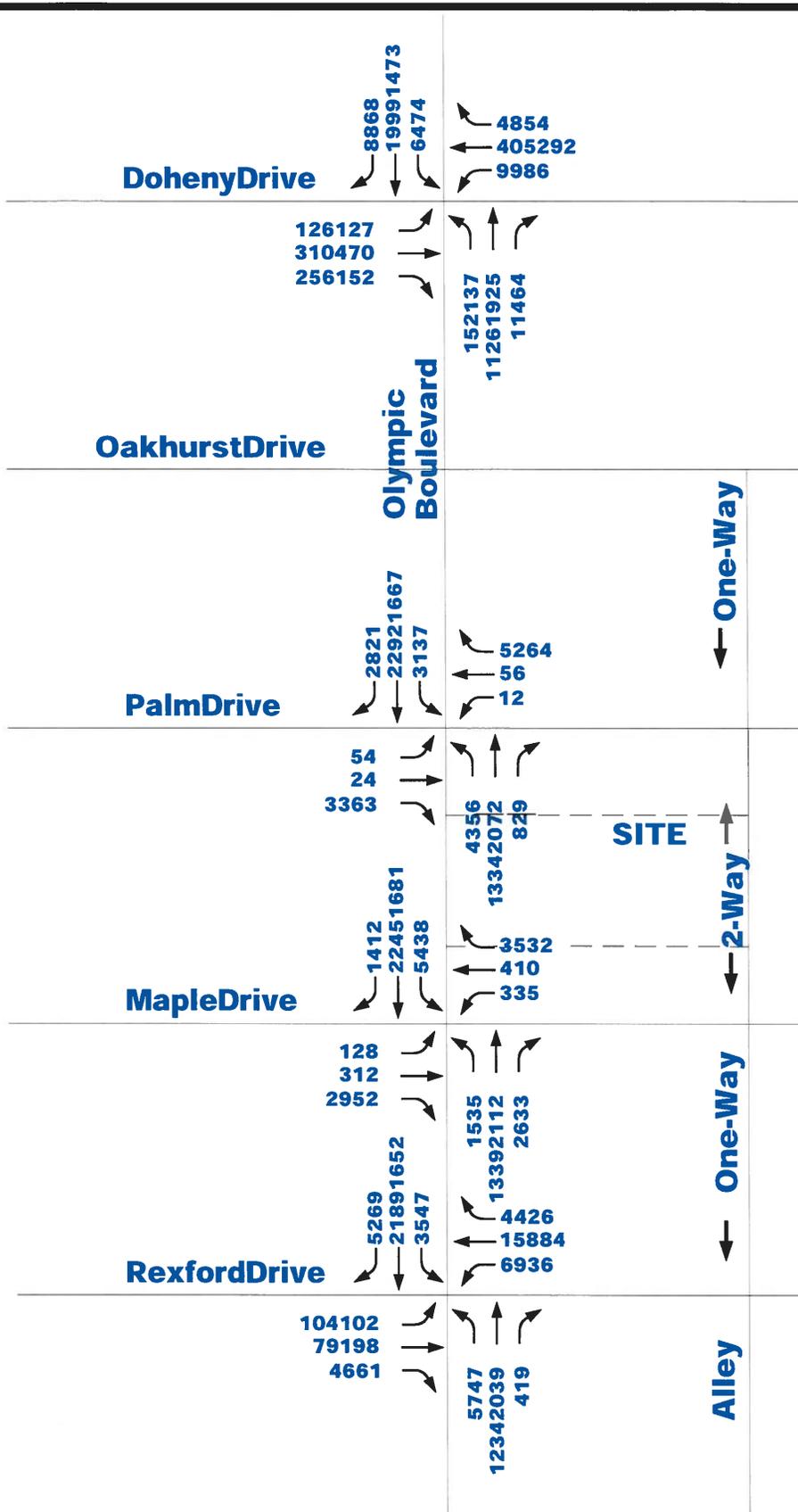
As shown in Figure 2, the proposed office building will be accessible via a 2-way driveway off the alley to the south of Olympic Boulevard. The driveway will be 22 feet wide, and will provide access to the project's subterranean parking garage. In order to maintain a safe sight distance for all exiting vehicles, it is recommended that landscaping in the vicinity of the project's driveway be kept below three feet in height. No obstacles which may block view of oncoming traffic should be located in those areas.

In order to improve project related vehicles' sight distance, it is recommended that parabolic mirrors be installed at the project's access point, facing east and westbound alley vehicles respectively. This will provide an advanced warning to site exiting vehicles about oncoming alley pedestrian and vehicular traffic thus, allowing ingress and egress movement to be performed in a safer fashion. Alternatively, a flashing warning light, triggered by vehicles leaving the garage, could be installed at the parking entrance, and provide similar results. At the present time, the type of access control to the parking area has not been finalized. It is expected that a swinging gate will be utilized, possibly about 40 feet from the property line. The gate will be remote control activated for the building's tenants.

The driveway provides proper ingress and egress interface with alley traffic flows. From the property line, the proposed 22 foot driveway, will have an 18 foot transition with a 12.5 percent slope. The driveway then will slope down with a 16.7 percent grade for about 45 feet, to the garage level. That slope also exists for the two ramps connecting the upper garage level with the second level below, and the bottom level respectively.

The parking garage has proper circulation. Passenger car access to all parking areas is satisfactory, and the parking garage has proper circulation. Turning radii are adequate both for ingress and egress movements. The location of the handicapped



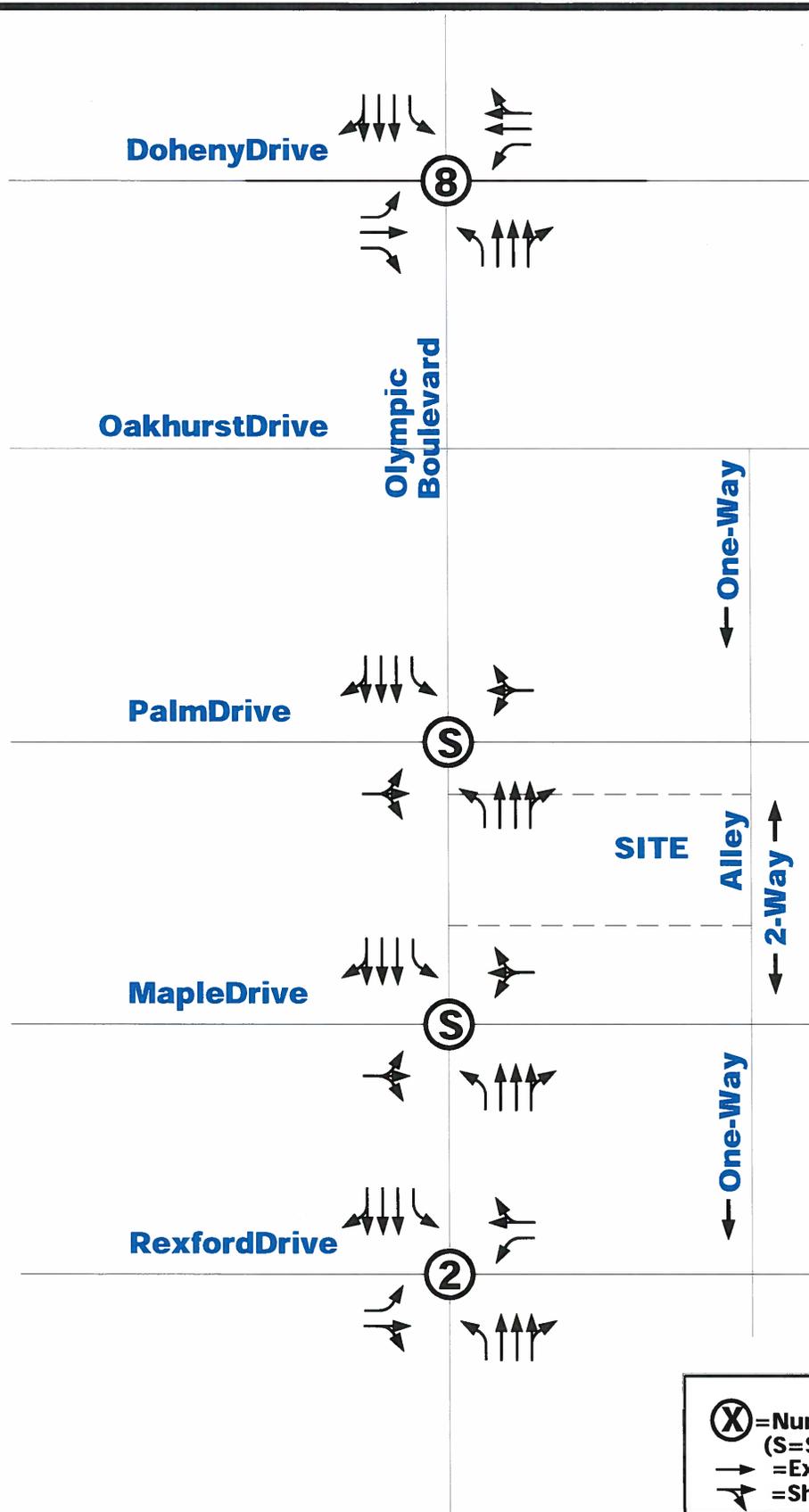


NO SCALE



**COCO TRAFFIC PLANNERS, INC.**  
 TRAFFIC AND TRANSPORTATION ENGINEERING AND CONSULTING  
 10835 SANTA MONICA BLVD., STE 202, LOS ANGELES CA 90025

**TOTAL FUTURE (2017)  
 PEAK HOUR TRAFFIC  
 VOLUMES**



NO SCALE

**LEGEND**

- (X) = Number of Signal Phases
- (S) = Stop Sign
- = Exclusive Traffic Lane
- ↔ = Shared Traffic Lane



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 TRAFFIC AND TRANSPORTATION ENGINEERING AND CONSULTING  
 10835 SANTA MONICA BLVD., STE 202, LOS ANGELES CA 90025

**EXISTING (2015) KEY INTERSECTIONS LANE CONFIGURATION**

parking stalls is satisfactory. Current plans show that sufficient isle widths, and parking stall configurations exist to accommodate the garage's internal circulation. The turning movements that vehicles will have to negotiate to access and egress the individual parking stalls were tested on the project's preliminary plans, in order to verify the viability of those movements with a minimal number of maneuvers. The subject condition was verified by utilizing a procedure reported in the Geometric Design of Highways and Streets manual, published by AASHTO.

The procedure consists of superimposing vehicle templates showing a given vehicle with the path it would "sweep" while negotiating a maximum turn. We found that the total number of maneuvers needed to ingress and egress the critical parking stalls is satisfactory, and it appears that all inbound and outbound movements will be negotiated with "three point" turns. Consequently, we established that the internal design of the parking garage is acceptable and has proper circulation.

As reported in Figure 2, a loading zone is provided at the ground level adjacent to the garage driveway, and measures about 12 by 60 feet. This area will accommodate two trucks, which is in line with the City requirements. The loading zone is parallel to the above mentioned alley, and has one 15-foot driveway at each end of the 60 feet loading zone. It is recommended that trucks approach the site from eastbound Olympic Boulevard, turn right (southbound) into Palm Drive, and continue in a clockwise direction into the 2-way alley. This will allow trucks to turn straight into the loading area, and circulate out of it through the next 15-foot driveway. Consequently, all trucks' ingress and egress maneuvers will occur on site.

The limited quantity of truck traffic generated by the proposed commercial building will not create circulation problems in the alley since trucks will be able to access and egress the loading area very quickly thus, reducing the potential for traffic delays due to trucks operations. We do not anticipate that truck maneuvers will have a significant impact upon the street system flow of traffic.

Standard UPS/FedEx deliveries to the site will occur throughout the day. In order to reduce potential impacts upon the adjacent residential developments, major deliveries to all project's land uses will be scheduled between 10:00 AM and 4:00 PM daily, except Sundays. In addition, in order to avoid potential conflicts among tenants, moving in or out of the building should be scheduled in advance with the property manager. To the extent possible, these movements will occur on Saturdays, and Sundays. Should special circumstances develop, they may be allowed on weekdays, between 10:00 PM and 4:00 PM.



## **PARKING SUPPLY**

In order to verify the adequacy of the proposed parking supply to support the intended land uses, we conducted an analysis of the project's parking demand based upon data provided by the ITE Parking Generation Manual, 3rd Edition. The results of the analysis show the parking generation factors and the resulting number of parking stalls needed to satisfy the project's parking demand.

The ITE factors used in our analysis relate to the peak number of stalls occupied, which will evaluate the project's parking needs under a worse case scenario. The parking demand was evaluated for the "General Office" (land use #710), while the parking needs of the retail area were evaluated with using the factors required by the City of Beverly Hills. This was done because the ITE factors are not reliable for very small retail space. The results of the analysis are shown in Table 7. As indicated in that table, the ITE factors used for General Office related to the parking generation factor associated with the 85th percentile of the peak parking demand, a more conservative scenario. Under this scenario the proposed project will have a peak parking demand for 59 stalls.

Table 7 also reports the subject project's parking demand based upon the City of Beverly Hills Parking Code. The actual parking supply, also is reported for comparison purposes. As indicated in Table 7, the City Code requires the project to provide a total of 58 parking stalls, which translates into a rate of 2.86 stalls per 1,000 sf. Consequently, the project's 58 stall parking supply is in line with that required by the City Code. In addition, Table 7 shows that the proposed supply will be about two percent lower than the project's peak parking demand.

It should be noted that the parking needs of a mixed-use development are lower than the simple sum of the individual land uses parking needs. This is due to the "shared parking" capability, where different land uses can share the same parking stall, at different times of the day. Consequently, the proposed 58 stall parking facility will provide adequate parking for the proposed mixed-use development. No on-street parking overflow is expected as a result of the development of the proposed project.

\* \* \* \* \*



**TABLE 7**

**PROJECT PARKING GENERATION  
9212 Olympic Boulevard Commercial Development Traffic Impact Analysis - Beverly Hills**

| LAND USE                                     | SIZE          | UNIT        | LAND USE CODE | MAXIMUM # OF STALLS OCCUPIED |               | CITY OF BEVERLY HILLS PARKING CODE |               | ACTUAL PARKING SUPPLY |               |  |
|--|---------------|-------------|---------------|------------------------------|---------------|------------------------------------|---------------|-----------------------|---------------|--|
|  |               |             |               | (1)<br>Pkg Rate              | (2)<br>Stalls | (1)<br>Pkg Rate                    | (2)<br>Stalls | (1)<br>Pkg Rate       | (2)<br>Stalls |  |
| <b>Site Proposed Development</b>             |               |             |               |                              |               |                                    |               |                       |               |  |
| <b>General Office</b>                        | <b>13.248</b> | <b>KGSF</b> | 710           | 2.97                         | 39            | 2.86                               | 38            | 2.86                  | 38            |  |
| <b>Shopping Center (3)</b>                   | <b>7.044</b>  | <b>KGLA</b> | 820           | 2.86                         | 20            | 2.86                               | 20            | 2.86                  | 20            |  |
| <b>Total</b>                                 |               |             |               |                              | <b>59</b>     |                                    | <b>58</b>     |                       | <b>58</b>     |  |
| <b>Proposed Project's Peak Parking Needs</b> |               |             |               | <b>(101.7%) 59</b>           |               | <b>(+100.0%) 58</b>                |               | <b>(+100.0%) 58</b>   |               |  |

Note: Parking generation factors per ITE Parking Generation - 3rd Edition.

- 1) Pkg Rate is the average number of parking stalls occupied per "SIZE" Unit (i.e. KGFA).
- 2) Stalls is the maximum number of occupied parking spaces associated with the generator.
- 3) Per City Code as ITE values are not applicable for small size retail centers.

## **SUMMARY AND CONCLUSIONS**

A mixed-use office and retail building totaling 21,339 square feet of gross floor area has been proposed for development at 9212 Olympic Boulevard, in the City of Beverly Hills, California. The subject parcel of land entails a total of about 12,000 square feet, and is bordered by Olympic Boulevard on its north side, an east-west alley on its south side, and two other properties on its east and west sides respectively. The site currently is used as a parking storage for a car rental business. It lies within a commercial area therefore, the proposed land use is consistent with the site's zoning.

The mixed-use project will be supported by a three level subterranean parking garage, located beneath the building, which will provide a total of 58 parking stalls. In addition, a two truck loading zone is provided in the back of the building. The proposed project's parking garage will be accessible via a 22-foot 2-way driveway in the alley. The project's proposed supply of 58 parking stalls is in line with the City Code parking requirements. No on-street parking overflow is expected as a result of the development of the proposed project.

A traffic analysis was conducted to evaluate the traffic impacts associated with the proposed project, at four vicinity intersections. The analysis was conducted for the morning, and the evening peak hours, under five traffic conditions: **1.** Existing (2015) traffic volumes; **2.** Existing traffic volumes with traffic expansion to the year 2017; **3.** Future (2017) traffic with related projects' traffic volumes (background volumes); **4.** Background volumes plus site project's traffic volumes (total future); and **5.** Total Future (2017) traffic volumes with mitigation measures, (where applicable).



It was found that traffic operations on the area street system in general are very good, and will not be adversely affected by the minor increase in traffic volumes associated with the proposed project. The intersections analyzed will operate at good levels of service, and will not require any mitigation measures consequently, none was proposed.

\* \* \* \* \*

Please call me if you have any questions with regard to our study. It has been a pleasure to serve you on this most interesting project.

Very truly yours,  
**COCO TRAFFIC PLANNERS, INC.**



Dr. Antonio S. Coco, P.E.  
President

ASC/bl  
**#2K15035TS**





# APPENDICES



# APPENDIX A

## PEAK HOUR MANUAL TRAFFIC COUNTS CALCULATION SHEETS



# ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

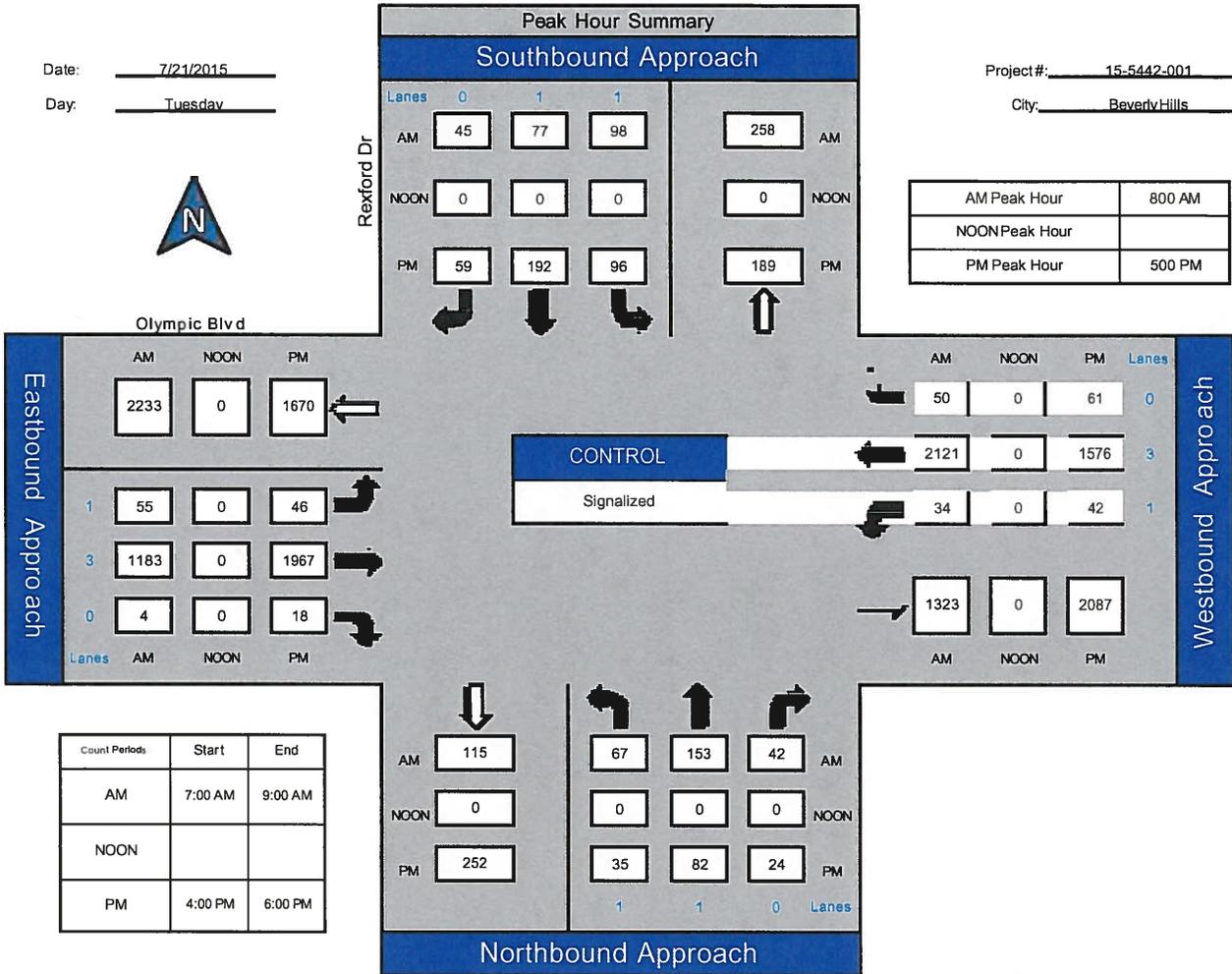
## Rexford Dr and Olympic Blvd - Beverly Hills

Date: 7/21/2015

Day: Tuesday

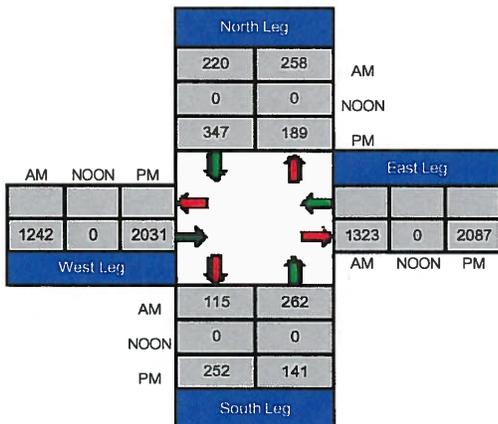
Project #: 15-5442-001

City: Beverly Hills

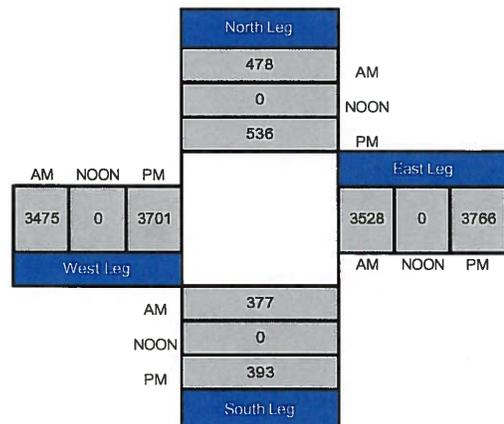


| Count Periods | Start   | End     |
|---------------|---------|---------|
| AM            | 7:00 AM | 9:00 AM |
| NOON          |         |         |
| PM            | 4:00 PM | 6:00 PM |

### Total Ins & Outs



### Total Volume Per Leg



# ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

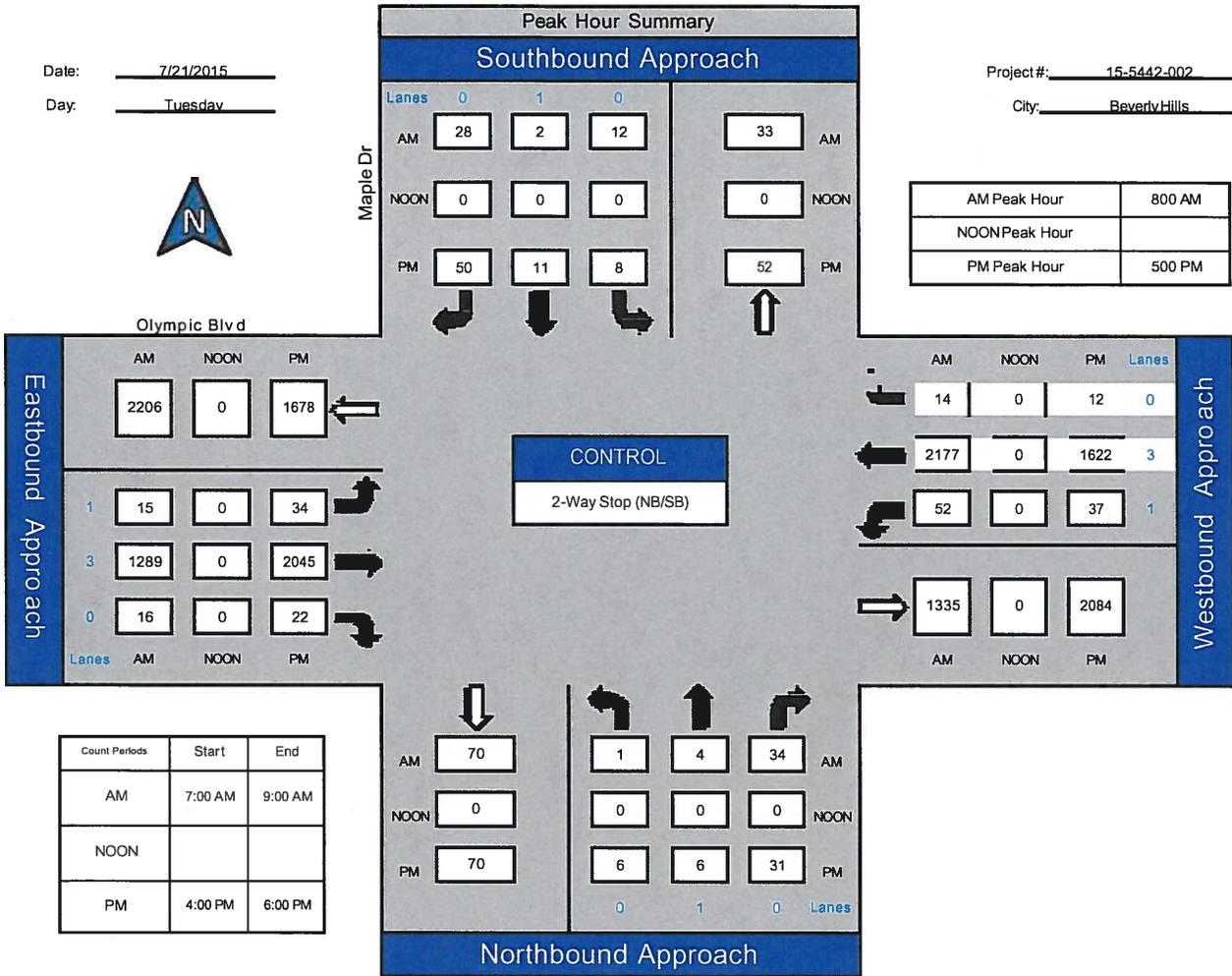
## Maple Dr and Olympic Blvd., Beverly Hills

Date: 7/21/2015

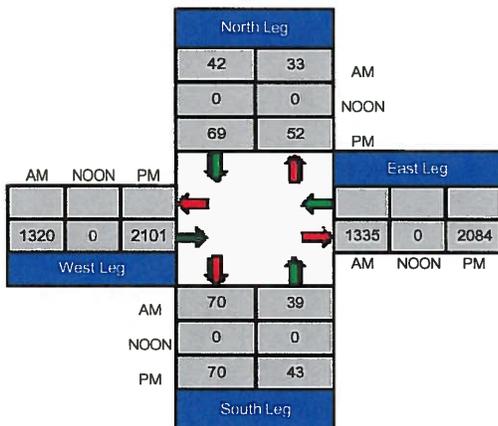
Day: Tuesday

Project #: 15-5442-002

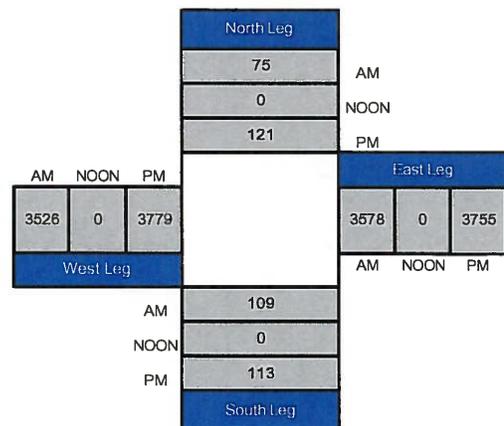
City: Beverly Hills



Total Ins & Outs



Total Volume Per Leg



# ITM Peak Hour Summary

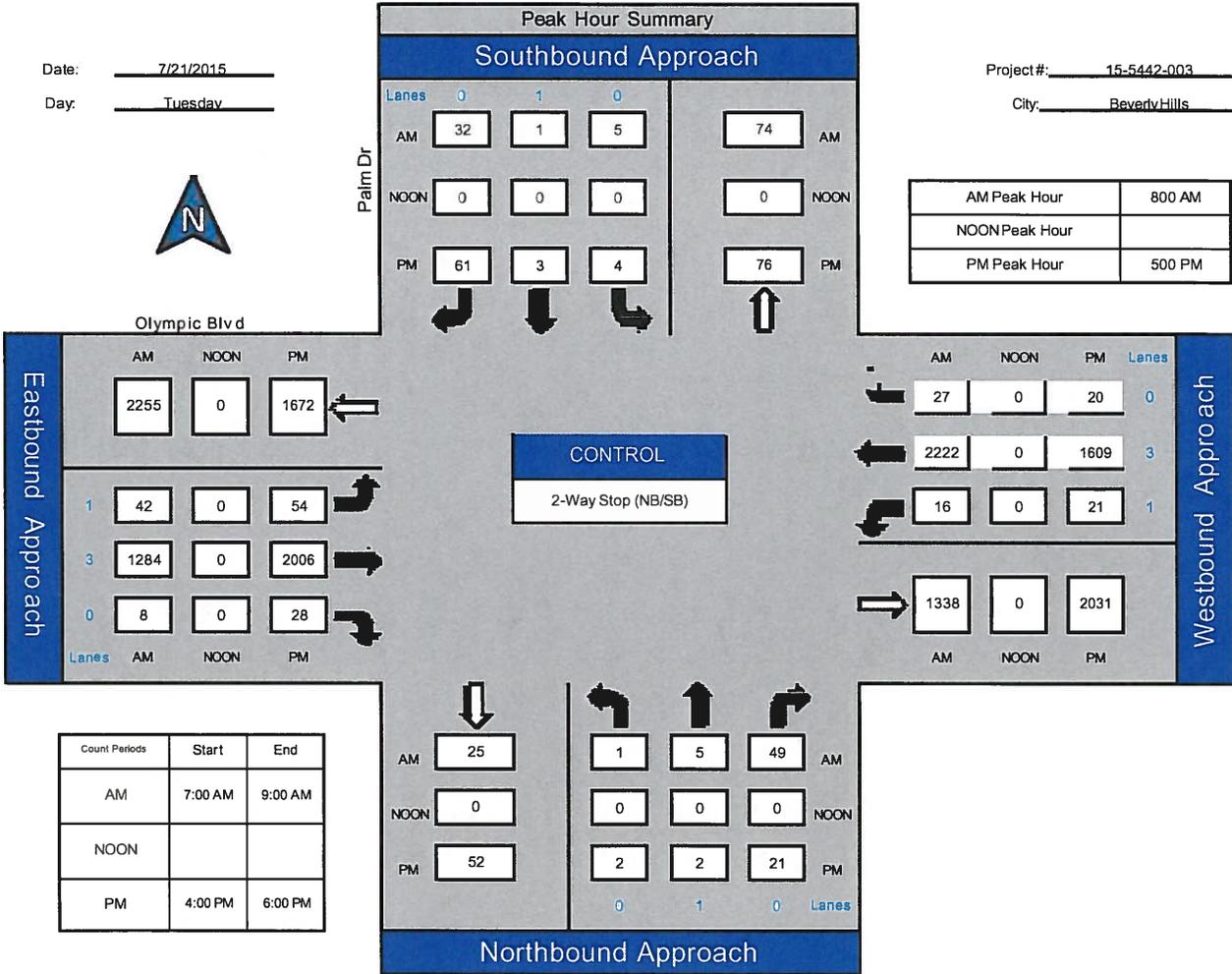


Prepared by:  
National Data & Surveying Services

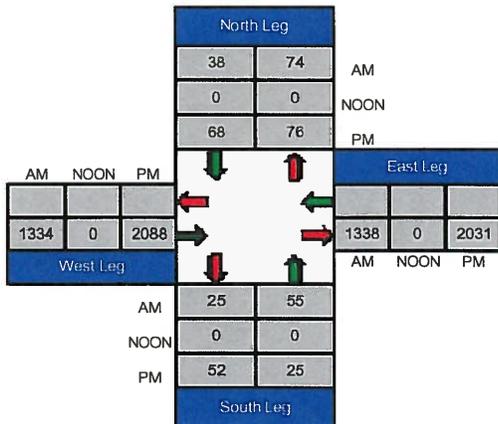
## Palm Dr and Olympic Blvd - Beverly Hills

Date: 7/21/2015  
Day: Tuesday

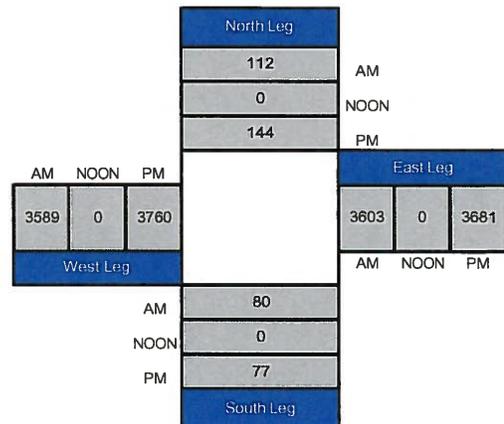
Project #: 15-5442-003  
City: Beverly Hills



### Total Ins & Outs



### Total Volume Per Leg



# ITM Peak Hour Summary

Prepared by:



National Data & Surveying Services

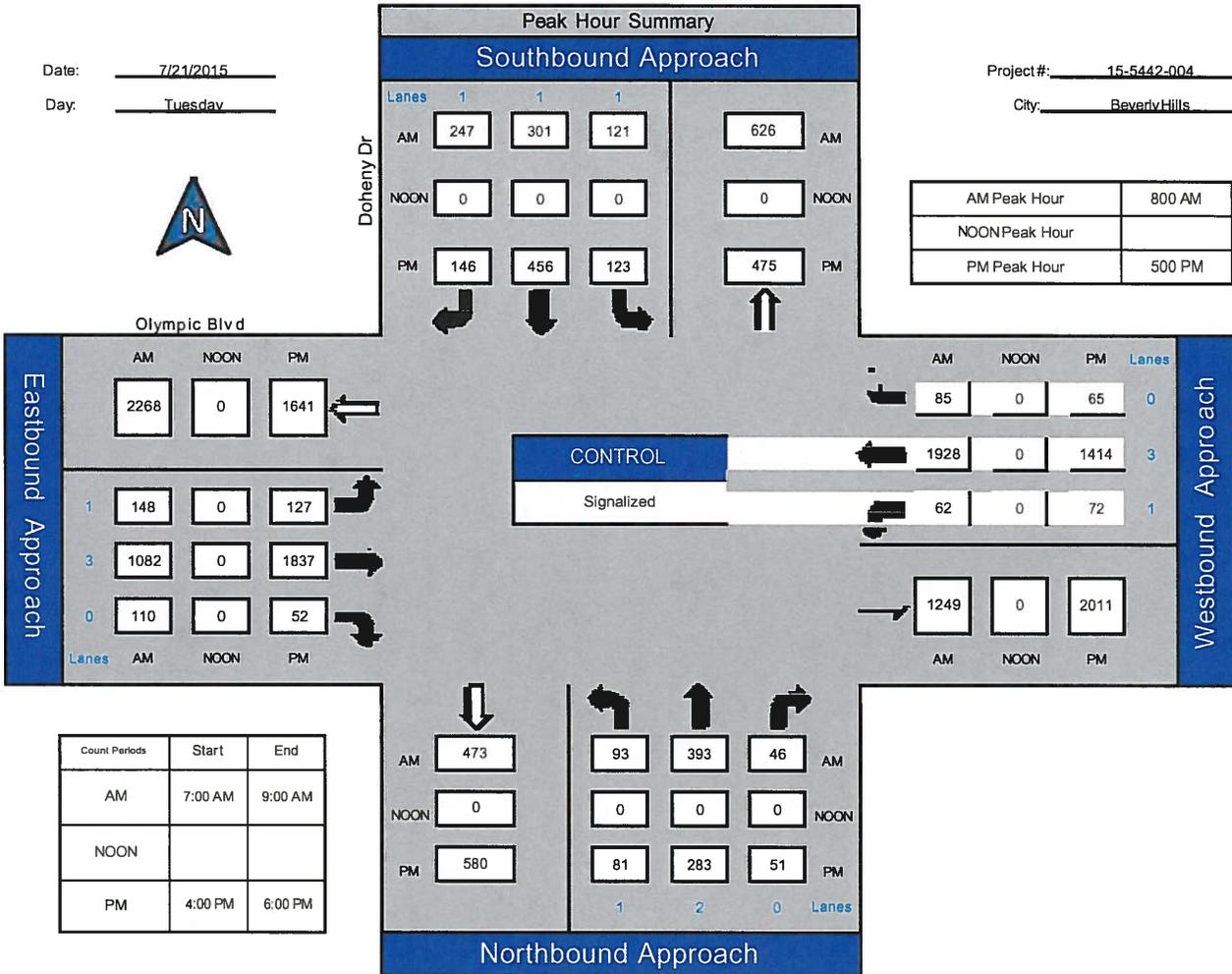
## Doheny Dr and Olympic Blvd - Beverly Hills

Date: 7/21/2015

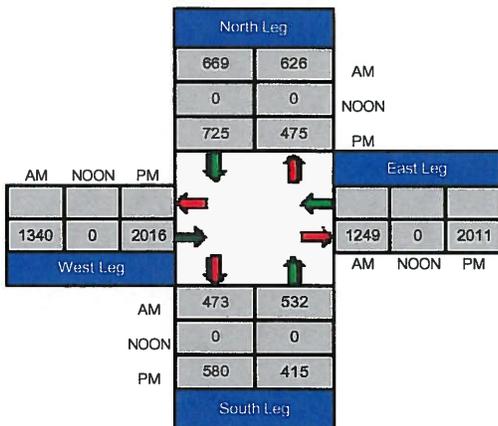
Day: Tuesday

Project #: 15-5442-004

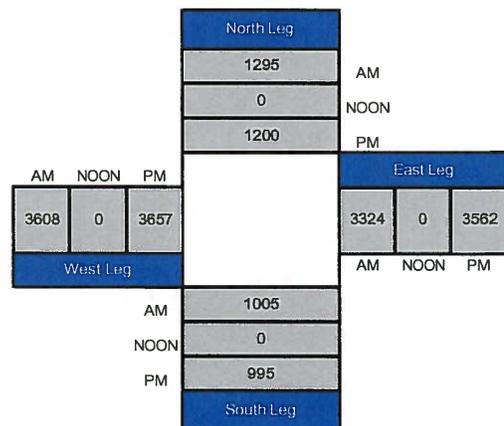
City: Beverly Hills



Total Ins & Outs



Total Volume Per Leg



## APPENDIX B

# INTERSECTION CAPACITY UTILIZATION AND TWO-WAY-STOP CONTROL CALCULATION SHEETS



INTERSECTION CAPACITY UTILIZATION

Rexford Drive @ Olympic Boulevard - Beverly Hills / California

Number of Phases: 2 - Growth/Year: 1.50 %

N-S St : Rexford Drive

E-W St : Olympic Boulevard

Project: 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis / 2K15035TS

Date: 23 Nov 2015

Date of Count: 07/21/2015

Projection Year: 2017

MORNING COUNT - PEAK HOUR STARTING @ 8:00 AM

| Movement         | Existing (2015)<br>Traffic Volumes |                   |              | 2015 Scenario plus<br>Traffic Expansion to 2017<br>Traffic Volumes |       |           | Future (2017) Volumes with<br>Related Projects (Background)<br>Traffic Volumes |       |           | Background (2017) Volumes<br>Plus Proposed Project's<br>Traffic Volumes |       |           | Total Future (2017) Traffic<br>With Mitiation Measures |       |                  |                     |
|------------------|------------------------------------|-------------------|--------------|--|-------|-----------|--|-------|-----------|---|-------|-----------|--|-------|------------------|---------------------|
|                  | (1)<br>Volume                      | Mvmnt<br>Capacity | V/C<br>Ratio | Added  | Total | V/C Ratio | Added  | Total | V/C Ratio | Added   | Total | V/C Ratio | Added  | Total | Mvmnt<br>Capacit | Volume<br>V/C Ratio |
| Nb left          | 67                                 | 1600              | 0.042        | 2  | 69    | 0.043     | 0  | 69    | 0.043     | 0   | 69    | 0.043     | 0  | 69    | 1600             | 0.043               |
| Nb Thru          | 153                                | 1600              | 0.122 *      | 5  | 158   | 0.126 *   | 0  | 158   | 0.126 *   | 0   | 158   | 0.126 *   | 0  | 158   | 1600             | 0.126 *             |
| Nb Right         | 42                                 | 0                 | 0.000        | 1  | 43    | 0.000     | 0  | 43    | 0.000     | 1   | 44    | 0.000     | 0  | 44    | 0                | 0.000               |
| Sb left          | 98                                 | 1600              | 0.061 *      | 3  | 101   | 0.063 *   | 1  | 102   | 0.064 *   | 2   | 104   | 0.065 *   | 0  | 104   | 1600             | 0.065 *             |
| Sb Thru          | 77                                 | 1600              | 0.076        | 2  | 79    | 0.078     | 0  | 79    | 0.078     | 0   | 79    | 0.078     | 0  | 79    | 1600             | 0.078               |
| Sb Right         | 45                                 | 0                 | 0.000        | 1  | 46    | 0.000     | 0  | 46    | 0.000     | 0   | 46    | 0.000     | 0  | 46    | 0                | 0.000               |
| Eb Left          | 55                                 | 1600              | 0.034 *      | 2  | 57    | 0.036 *   | 0  | 57    | 0.036 *   | 0   | 57    | 0.036 *   | 0  | 57    | 1600             | 0.036 *             |
| Eb Thru          | 1183                               | 4800              | 0.247        | 35   | 1218  | 0.255     | 9  | 1227  | 0.256     | 7   | 1234  | 0.258     | 0  | 1234  | 4800             | 0.258               |
| Eb Right         | 4                                  | 0                 | 0.000        | 0  | 4     | 0.000     | 0  | 4     | 0.000     | 0   | 4     | 0.000     | 0  | 4     | 0                | 0.000               |
| Wb Left          | 34                                 | 1600              | 0.021        | 1  | 35    | 0.022     | 0  | 35    | 0.022     | 0   | 35    | 0.022     | 0  | 35    | 1600             | 0.022               |
| Wb Thru          | 2121                               | 4800              | 0.452 *      | 64   | 2185  | 0.466 *   | 3  | 2188  | 0.467 *   | 1   | 2189  | 0.467 *   | 0  | 2189  | 4800             | 0.467 *             |
| Wb Right         | 50                                 | 0                 | 0.000        | 2  | 52    | 0.000     | 0  | 52    | 0.000     | 0   | 52    | 0.000     | 0  | 52    | 0                | 0.000               |
| Yellow Allowance |                                    |                   | 0.100        |  |       | 0.100     |  |       | 0.100     |   |       | 0.100     |  |       |                  | 0.100               |
| IC U Index       |                                    |                   | 0.769        |  |       | 0.791     |  |       | 0.792     |   |       | 0.794     |  |       |                  | 0.794               |
| LOS              |                                    |                   | C            |  |       | C         |  |       | C         |   |       | C         |  |       |                  | C                   |

EVENING COUNT - PEAK HOUR STARTING @ 5:00 PM

|                  |      |      |         |    |      |         |    |      |         |    |      |         |   |      |      |         |
|------------------|------|------|---------|----|------|---------|----|------|---------|----|------|---------|---|------|------|---------|
| Nb left          | 35   | 1600 | 0.022 * | 1  | 36   | 0.023 * | 0  | 36   | 0.023 * | 0  | 36   | 0.023 * | 0 | 36   | 1600 | 0.023 * |
| Nb Thru          | 82   | 1600 | 0.066   | 2  | 84   | 0.068   | 0  | 84   | 0.068   | 0  | 84   | 0.069   | 0 | 84   | 1600 | 0.069   |
| Nb Right         | 24   | 0    | 0.000   | 1  | 25   | 0.000   | 0  | 25   | 0.000   | 1  | 26   | 0.000   | 0 | 26   | 0    | 0.000   |
| Sb left          | 96   | 1600 | 0.060   | 3  | 99   | 0.062   | 1  | 100  | 0.063   | 2  | 102  | 0.064   | 0 | 102  | 1600 | 0.064   |
| Sb Thru          | 192  | 1600 | 0.157 * | 6  | 198  | 0.162 * | 0  | 198  | 0.162 * | 0  | 198  | 0.162 * | 0 | 198  | 1600 | 0.162 * |
| Sb Right         | 59   | 0    | 0.000   | 2  | 61   | 0.000   | 0  | 61   | 0.000   | 0  | 61   | 0.000   | 0 | 61   | 0    | 0.000   |
| Eb Left          | 46   | 1600 | 0.029   | 1  | 47   | 0.029   | 0  | 47   | 0.029   | 0  | 47   | 0.029   | 0 | 47   | 1600 | 0.029   |
| Eb Thru          | 1967 | 4800 | 0.414 * | 59 | 2026 | 0.426 * | 6  | 2032 | 0.427 * | 7  | 2039 | 0.429 * | 0 | 2039 | 4800 | 0.429 * |
| Eb Right         | 18   | 0    | 0.000   | 1  | 19   | 0.000   | 0  | 19   | 0.000   | 0  | 19   | 0.000   | 0 | 19   | 0    | 0.000   |
| Wb Left          | 42   | 1600 | 0.026 * | 1  | 43   | 0.027 * | 0  | 43   | 0.027 * | 4  | 47   | 0.029 * | 0 | 47   | 1600 | 0.029 * |
| Wb Thru          | 1576 | 4800 | 0.341   | 47 | 1623 | 0.351   | 10 | 1633 | 0.353   | 19 | 1652 | 0.359   | 0 | 1652 | 4800 | 0.359   |
| Wb Right         | 61   | 0    | 0.000   | 2  | 63   | 0.000   | 0  | 63   | 0.000   | 6  | 69   | 0.000   | 0 | 69   | 0    | 0.000   |
| Yellow Allowance |      |      | 0.100   |    |      | 0.100   |    |      | 0.100   |    |      | 0.100   |   |      |      | 0.100   |
| IC U Index       |      |      | 0.718   |    |      | 0.738   |    |      | 0.739   |    |      | 0.743   |   |      |      | 0.743   |
| LOS              |      |      | C       |    |      | C       |    |      | C       |    |      | C       |   |      |      | C       |

1) Count by: NDS Data

INTERSECTION CAPACITY UTILIZATION

Maple Drive @ Olympic Boulevard - Beverly Hills / California  
 Number of Phases: 2 - Growth/Year: 1.50 %

N-S St : Maple Drive  
 E-W St : Olympic Boulevard  
 Project : 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis / 2K15035TS

Date: 23 Nov 2015  
 Date of Count: 07/21/2015  
 Projection Year: 2017

MORNING COUNT - PEAK HOUR STARTING @ 8:00 AM

| Movement         | Existing (2015)<br>Traffic Volumes |                   |              | 2015 Scenario plus<br>Traffic Expansion to 2017<br>Traffic Volumes |       |           | Future (2017) Volumes with<br>Related Projects (Background)<br>Traffic Volumes |       |           | Background (2017) Volumes<br>Plus Proposed Project's<br>Traffic Volumes |       |           | Total Future (2017) Traffic<br>With Mitiation Measures |       |                  |                     |       |
|------------------|------------------------------------|-------------------|--------------|--|-------|-----------|--|-------|-----------|---|-------|-----------|--|-------|------------------|---------------------|-------|
|                  | (1)<br>Volume                      | Mvmnt<br>Capacity | V/C<br>Ratio | Added  | Total | V/C Ratio | Added  | Total | V/C Ratio | Added   | Total | V/C Ratio | Added  | Total | Mvmnt<br>Capacit | Volume<br>V/C Ratio |       |
| Nb left          | 1                                  | 0                 | 0.000 *      | 0  | 1     | 0.000 *   | 0  | 1     | 0.000 *   | 2   | 3     | 0.000 *   | 0  | 3     | 0                | 0.000 *             |       |
| Nb Thru          | 4                                  | 1600              | 0.024        | 0  | 4     | 0.025     | 0  | 4     | 0.025     | 0   | 4     | 0.026     | 0  | 4     | 1600             | 0.026               |       |
| Nb Right         | 34                                 | 0                 | 0.000        | 1  | 35    | 0.000     | 0  | 35    | 0.000     | 0   | 35    | 0.000     | 0  | 35    | 0                | 0.000               |       |
| Sb left          | 12                                 | 0                 | 0.000        | 0  | 12    | 0.000     | 0  | 12    | 0.000     | 0   | 12    | 0.000     | 0  | 12    | 0                | 0.000               |       |
| Sb Thru          | 2                                  | 1600              | 0.026 *      | 0  | 2     | 0.027 *   | 0  | 2     | 0.027 *   | 1   | 3     | 0.028 *   | 0  | 3     | 1600             | 0.028 *             |       |
| Sb Right         | 28                                 | 0                 | 0.000        | 1  | 29    | 0.000     | 0  | 29    | 0.000     | 0   | 29    | 0.000     | 0  | 29    | 0                | 0.000               |       |
| Eb Left          | 15                                 | 1600              | 0.009 *      | 0  | 15    | 0.009 *   | 0  | 15    | 0.009 *   | 0   | 15    | 0.009 *   | 0  | 15    | 1600             | 0.009 *             |       |
| Eb Thru          | 1289                               | 4800              | 0.272        | 39   | 1328  | 0.280     | 11   | 1339  | 0.282     | 0   | 1339  | 0.284     | 0  | 1339  | 4800             | 0.284               |       |
| Eb Right         | 16                                 | 0                 | 0.000        | 0  | 16    | 0.000     | 0  | 16    | 0.000     | 10  | 26    | 0.000     | 0  | 26    | 0                | 0.000               |       |
| Wb Left          | 52                                 | 1600              | 0.033        | 2  | 54    | 0.034     | 0  | 54    | 0.034     | 0   | 54    | 0.034     | 0  | 54    | 1600             | 0.034               |       |
| Wb Thru          | 2177                               | 4800              | 0.456 *      | 65   | 2242  | 0.470 *   | 3  | 2245  | 0.471 *   | 0   | 2245  | 0.471 *   | 0  | 2245  | 4800             | 0.471 *             |       |
| Wb Right         | 14                                 | 0                 | 0.000        | 0  | 14    | 0.000     | 0  | 14    | 0.000     | 0   | 14    | 0.000     | 0  | 14    | 0                | 0.000               |       |
| Yellow Allowance |                                    |                   | 0.100        |  |       | 0.100     |  |       | 0.100     |   |       | 0.100     |  |       |                  |                     | 0.100 |
| IC U Index       |                                    |                   | 0.592        |  |       | 0.606     |  |       | 0.607     |   |       | 0.607     |  |       |                  |                     | 0.607 |
| LOS              |                                    |                   | A            |  |       | B         |  |       | B         |   |       | B         |  |       |                  |                     | B     |

EVENING COUNT - PEAK HOUR STARTING @ 5:00 PM

|                  |      |      |         |    |      |         |    |      |         |    |      |         |   |      |      |         |       |
|------------------|------|------|---------|----|------|---------|----|------|---------|----|------|---------|---|------|------|---------|-------|
| Nb left          | 6    | 0    | 0.000 * | 0  | 6    | 0.000 * | 0  | 6    | 0.000 * | 29 | 35   | 0.000   | 0 | 35   | 0    | 0.000   |       |
| Nb Thru          | 6    | 1600 | 0.027   | 0  | 6    | 0.028   | 0  | 6    | 0.028   | 4  | 10   | 0.048 * | 0 | 10   | 1600 | 0.048 * |       |
| Nb Right         | 31   | 0    | 0.000   | 1  | 32   | 0.000   | 0  | 32   | 0.000   | 0  | 32   | 0.000   | 0 | 32   | 0    | 0.000   |       |
| Sb left          | 8    | 0    | 0.000   | 0  | 8    | 0.000   | 0  | 8    | 0.000   | 0  | 8    | 0.000 * | 0 | 8    | 0    | 0.000 * |       |
| Sb Thru          | 11   | 1600 | 0.043 * | 0  | 11   | 0.044 * | 0  | 11   | 0.044 * | 1  | 12   | 0.045   | 0 | 12   | 1600 | 0.045   |       |
| Sb Right         | 50   | 0    | 0.000   | 2  | 52   | 0.000   | 0  | 52   | 0.000   | 0  | 52   | 0.000   | 0 | 52   | 0    | 0.000   |       |
| Eb Left          | 34   | 1600 | 0.021   | 1  | 35   | 0.022   | 0  | 35   | 0.022   | 0  | 35   | 0.022   | 0 | 35   | 1600 | 0.022   |       |
| Eb Thru          | 2045 | 4800 | 0.431 * | 61 | 2106 | 0.444 * | 6  | 2112 | 0.445 * | 0  | 2112 | 0.447 * | 0 | 2112 | 4800 | 0.447 * |       |
| Eb Right         | 22   | 0    | 0.000   | 1  | 23   | 0.000   | 0  | 23   | 0.000   | 10 | 33   | 0.000   | 0 | 33   | 0    | 0.000   |       |
| Wb Left          | 37   | 1600 | 0.023 * | 1  | 38   | 0.024 * | 0  | 38   | 0.024 * | 0  | 38   | 0.024 * | 0 | 38   | 1600 | 0.024 * |       |
| Wb Thru          | 1622 | 4800 | 0.340   | 49 | 1671 | 0.351   | 10 | 1681 | 0.353   | 0  | 1681 | 0.353   | 0 | 1681 | 4800 | 0.353   |       |
| Wb Right         | 12   | 0    | 0.000   | 0  | 12   | 0.000   | 0  | 12   | 0.000   | 0  | 12   | 0.000   | 0 | 12   | 0    | 0.000   |       |
| Yellow Allowance |      |      | 0.100   |    |      | 0.100   |    |      | 0.100   |    |      | 0.100   |   |      |      |         | 0.100 |
| IC U Index       |      |      | 0.597   |    |      | 0.612   |    |      | 0.613   |    |      | 0.619   |   |      |      |         | 0.619 |
| LOS              |      |      | A       |    |      | B       |    |      | B       |    |      | B       |   |      |      |         | B     |

1) Count by: NDS Data

INTERSECTION CAPACITY UTILIZATION

Palm Drive @ Olympic Boulevard - Beverly Hills / California

Number of Phases: 2 - Growth/Year: 1.50 %

N-S St: Palm Drive

E-W St: Olympic Boulevard

Project: 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis / 2K15035TS

Date: 23 Nov 2015

Date of Count: 07/21/2015

Projection Year: 2017

MORNING COUNT - PEAK HOUR STARTING @ 8:00 AM

| Movement         | Existing (2015)<br>Traffic Volumes |          |           | 2015 Scenario plus<br>Traffic Expansion to 2017<br>Traffic Volumes |       |           | Future (2017) Volumes with<br>Related Projects (Background)<br>Traffic Volumes |       |           | Background (2017) Volumes<br>Plus Proposed Project's<br>Traffic Volumes |       |           | Total Future (2017) Traffic<br>With Mitiation Measures |       |           |
|------------------|------------------------------------|----------|-----------|--|-------|-----------|--|-------|-----------|---|-------|-----------|--|-------|-----------|
|                  | Volume                             | Capacity | V/C Ratio | Added  | Total | V/C Ratio | Added  | Total | V/C Ratio | Added   | Total | V/C Ratio | Added  | Total | V/C Ratio |
| Nb left          | 1                                  | 0        | 0.000     | 0  | 1     | 0.000     | 0  | 1     | 0.000     | 0   | 1     | 0.000     | 0  | 1     | 0.000     |
| Nb Thru          | 5                                  | 1600     | 0.034 *   | 0  | 5     | 0.035 *   | 0  | 5     | 0.035 *   | 0   | 5     | 0.036 *   | 0  | 5     | 0.036 *   |
| Nb Right         | 49                                 | 0        | 0.000     | 1  | 50    | 0.000     | 0  | 50    | 0.000     | 2   | 52    | 0.000     | 0  | 52    | 0.000     |
| Sb left          | 5                                  | 0        | 0.000 *   | 0  | 5     | 0.000 *   | 0  | 5     | 0.000 *   | 0   | 5     | 0.000 *   | 0  | 5     | 0.000 *   |
| Sb Thru          | 1                                  | 1600     | 0.024     | 0  | 1     | 0.024     | 0  | 1     | 0.024     | 1   | 2     | 0.025     | 0  | 2     | 0.025     |
| Sb Right         | 32                                 | 0        | 0.000     | 1  | 33    | 0.000     | 0  | 33    | 0.000     | 0   | 33    | 0.000     | 0  | 33    | 0.000     |
| Eb Left          | 42                                 | 1600     | 0.026 *   | 1  | 43    | 0.027 *   | 0  | 43    | 0.027 *   | 0   | 43    | 0.027 *   | 0  | 43    | 0.027 *   |
| Eb Thru          | 1284                               | 4800     | 0.269     | 39   | 1323  | 0.277     | 11   | 1334  | 0.280     | 0   | 1334  | 0.280     | 0  | 1334  | 0.280     |
| Eb Right         | 8                                  | 0        | 0.000     | 0  | 8     | 0.000     | 0  | 8     | 0.000     | 0   | 8     | 0.000     | 0  | 8     | 0.000     |
| Wb Left          | 16                                 | 1600     | 0.010     | 0  | 16    | 0.010     | 0  | 16    | 0.010     | 15  | 31    | 0.019     | 0  | 31    | 0.019     |
| Wb Thru          | 2222                               | 4800     | 0.469 *   | 67   | 2289  | 0.483 *   | 3  | 2292  | 0.483 *   | 0   | 2292  | 0.483 *   | 0  | 2292  | 0.483 *   |
| Wb Right         | 27                                 | 0        | 0.000     | 1  | 28    | 0.000     | 0  | 28    | 0.000     | 0   | 28    | 0.000     | 0  | 28    | 0.000     |
| Yellow Allowance |                                    |          | 0.100     |  |       | 0.100     |  |       | 0.100     |   |       | 0.100     |  |       | 0.100     |
| IC U Index       |                                    |          | 0.629     |  |       | 0.645     |  |       | 0.645     |   |       | 0.647     |  |       | 0.647     |
| LOS              |                                    |          | B         |  |       | B         |  |       | B         |   |       | B         |  |       | B         |

EVENING COUNT - PEAK HOUR STARTING @ 5:00 PM

|                  |      |      |         |    |      |         |    |      |         |    |      |         |   |      |         |
|------------------|------|------|---------|----|------|---------|----|------|---------|----|------|---------|---|------|---------|
| Nb left          | 2    | 0    | 0.000 * | 0  | 2    | 0.000 * | 0  | 2    | 0.000 * | 0  | 2    | 0.000   | 0 | 2    | 0.000   |
| Nb Thru          | 2    | 1600 | 0.016   | 0  | 2    | 0.016   | 0  | 2    | 0.016   | 4  | 6    | 0.045 * | 0 | 6    | 0.045 * |
| Nb Right         | 21   | 0    | 0.000   | 1  | 22   | 0.000   | 0  | 22   | 0.000   | 42 | 64   | 0.000   | 0 | 64   | 0.000   |
| Sb left          | 4    | 0    | 0.000   | 0  | 4    | 0.000   | 0  | 4    | 0.000   | 0  | 4    | 0.000 * | 0 | 4    | 0.000 * |
| Sb Thru          | 3    | 1600 | 0.043 * | 0  | 3    | 0.044 * | 0  | 3    | 0.044 * | 1  | 4    | 0.044   | 0 | 4    | 0.044   |
| Sb Right         | 61   | 0    | 0.000   | 2  | 63   | 0.000   | 0  | 63   | 0.000   | 0  | 63   | 0.000   | 0 | 63   | 0.000   |
| Eb Left          | 54   | 1600 | 0.034   | 2  | 56   | 0.035   | 0  | 56   | 0.035   | 0  | 56   | 0.035   | 0 | 56   | 0.035   |
| Eb Thru          | 2006 | 4800 | 0.424 * | 60 | 2066 | 0.436 * | 6  | 2072 | 0.438 * | 0  | 2072 | 0.438 * | 0 | 2072 | 0.438 * |
| Eb Right         | 28   | 0    | 0.000   | 1  | 29   | 0.000   | 0  | 29   | 0.000   | 0  | 29   | 0.000   | 0 | 29   | 0.000   |
| Wb Left          | 21   | 1600 | 0.013 * | 1  | 22   | 0.014 * | 0  | 22   | 0.014 * | 15 | 37   | 0.023 * | 0 | 37   | 0.023 * |
| Wb Thru          | 1609 | 4800 | 0.339   | 48 | 1657 | 0.350   | 10 | 1667 | 0.352   | 0  | 1667 | 0.352   | 0 | 1667 | 0.352   |
| Wb Right         | 20   | 0    | 0.000   | 1  | 21   | 0.000   | 0  | 21   | 0.000   | 0  | 21   | 0.000   | 0 | 21   | 0.000   |
| Yellow Allowance |      |      | 0.100   |    |      | 0.100   |    |      | 0.100   |    |      | 0.100   |   |      | 0.100   |
| IC U Index       |      |      | 0.579   |    |      | 0.594   |    |      | 0.595   |    |      | 0.606   |   |      | 0.606   |
| LOS              |      |      | A       |    |      | A       |    |      | A       |    |      | B       |   |      | B       |

1) Count by: NDS Data

INTERSECTION CAPACITY UTILIZATION

Doheny Drive @ Olympic Boulevard - Beverly Hills / California

Number of Phases: 8 - Growth/Year: 1.50 %

N-S St : Doheny Drive

E-W St : Olympic Boulevard

Project: 9212 Olympic Boulevard Commercial Development Traffic Impact Analysis / 2K15035TS

Date: 23 Nov 2015

Date of Count: 07/21/2015

Projection Year: 2017

MORNING COUNT - PEAK HOUR STARTING @ 8:00 AM

| Movement         | Existing (2015)<br>Traffic Volumes |                   |              | 2015 Scenario plus<br>Traffic Expansion to 2017<br>Traffic Volumes |       |           | Future (2017) Volumes with<br>Related Projects (Background)<br>Traffic Volumes |       |           | Background (2017) Volumes<br>Plus Proposed Project's<br>Traffic Volumes |       |           | Total Future (2017) Traffic<br>With Mitiation Measures |       |                  |                     |
|------------------|------------------------------------|-------------------|--------------|--|-------|-----------|--|-------|-----------|---|-------|-----------|--|-------|------------------|---------------------|
|                  | (1)<br>Volume                      | Mvmnt<br>Capacity | V/C<br>Ratio | Added  | Total | V/C Ratio | Added  | Total | V/C Ratio | Added   | Total | V/C Ratio | Added  | Total | Mvmnt<br>Capacit | Volume<br>V/C Ratio |
| Nb left          | 93                                 | 1600              | 0.058 *      | 3  | 96    | 0.060 *   | 0  | 96    | 0.060 *   | 3   | 99    | 0.062 *   | 0  | 99    | 1600             | 0.062 *             |
| Nb Thru          | 393                                | 3200              | 0.137        | 12   | 405   | 0.141     | 0  | 405   | 0.142     | 0   | 405   | 0.142     | 0  | 405   | 3200             | 0.142               |
| Nb Right         | 46                                 | 0                 | 0.000        | 1  | 47    | 0.000     | 1  | 48    | 0.000     | 0   | 48    | 0.000     | 0  | 48    | 0                | 0.000               |
| Sb left          | 121                                | 1600              | 0.076        | 4  | 125   | 0.078     | 1  | 126   | 0.079     | 0   | 126   | 0.079     | 0  | 126   | 1600             | 0.079               |
| Sb Thru          | 301                                | 1600              | 0.188 *      | 9  | 310   | 0.194 *   | 0  | 310   | 0.194 *   | 0   | 310   | 0.194 *   | 0  | 310   | 1600             | 0.194 *             |
| Sb Right         | 247                                | 1600              | 0.154        | 7  | 254   | 0.159     | 0  | 254   | 0.159     | 2   | 256   | 0.160     | 0  | 256   | 1600             | 0.160               |
| Eb Left          | 148                                | 1600              | 0.093 *      | 4  | 152   | 0.095 *   | 0  | 152   | 0.095 *   | 0   | 152   | 0.095 *   | 0  | 152   | 1600             | 0.095 *             |
| Eb Thru          | 1082                               | 4800              | 0.248        | 32   | 1114  | 0.256     | 11   | 1125  | 0.258     | 1   | 1126  | 0.258     | 0  | 1126  | 4800             | 0.258               |
| Eb Right         | 110                                | 0                 | 0.000        | 3  | 113   | 0.000     | 0  | 113   | 0.000     | 1   | 114   | 0.000     | 0  | 114   | 0                | 0.000               |
| Wb Left          | 62                                 | 1600              | 0.039        | 2  | 64    | 0.040     | 0  | 64    | 0.040     | 0   | 64    | 0.040     | 0  | 64    | 1600             | 0.040               |
| Wb Thru          | 1928                               | 4800              | 0.419 *      | 58   | 1986  | 0.432 *   | 3  | 1989  | 0.433 *   | 10  | 1999  | 0.435 *   | 0  | 1999  | 4800             | 0.435 *             |
| Wb Right         | 85                                 | 0                 | 0.000        | 3  | 88    | 0.000     | 0  | 88    | 0.000     | 0   | 88    | 0.000     | 0  | 88    | 0                | 0.000               |
| Yellow Allowance |                                    |                   | 0.100        |  |       | 0.100     |  |       | 0.100     |   |       | 0.100     |  |       |                  | 0.100               |
| IC U Index       |                                    |                   | 0.859        |  |       | 0.881     |  |       | 0.881     |   |       | 0.886     |  |       |                  | 0.886               |
| LOS              |                                    |                   | D            |  |       | D         |  |       | D         |   |       | D         |  |       |                  | D                   |

EVENING COUNT - PEAK HOUR STARTING @ 5:00 PM

|                  |      |      |         |    |      |         |   |      |         |    |      |         |   |      |      |         |
|------------------|------|------|---------|----|------|---------|---|------|---------|----|------|---------|---|------|------|---------|
| Nb left          | 81   | 1600 | 0.051 * | 2  | 83   | 0.052 * | 0 | 83   | 0.052 * | 3  | 86   | 0.054 * | 0 | 86   | 1600 | 0.054 * |
| Nb Thru          | 283  | 3200 | 0.104   | 8  | 291  | 0.108   | 1 | 292  | 0.108   | 0  | 292  | 0.108   | 0 | 292  | 3200 | 0.108   |
| Nb Right         | 51   | 0    | 0.000   | 2  | 53   | 0.000   | 1 | 54   | 0.000   | 0  | 54   | 0.000   | 0 | 54   | 0    | 0.000   |
| Sb left          | 123  | 1600 | 0.077   | 4  | 127  | 0.079   | 0 | 127  | 0.079   | 0  | 127  | 0.079   | 0 | 127  | 1600 | 0.079   |
| Sb Thru          | 456  | 1600 | 0.285 * | 14 | 470  | 0.294 * | 0 | 470  | 0.294 * | 0  | 470  | 0.294 * | 0 | 470  | 1600 | 0.294 * |
| Sb Right         | 146  | 1600 | 0.091   | 4  | 150  | 0.094   | 0 | 150  | 0.094   | 2  | 152  | 0.095   | 0 | 152  | 1600 | 0.095   |
| Eb Left          | 127  | 1600 | 0.079   | 4  | 131  | 0.082   | 0 | 131  | 0.082   | 6  | 137  | 0.086   | 0 | 137  | 1600 | 0.086   |
| Eb Thru          | 1837 | 4800 | 0.394 * | 55 | 1892 | 0.405 * | 6 | 1898 | 0.407 * | 27 | 1925 | 0.414 * | 0 | 1925 | 4800 | 0.414 * |
| Eb Right         | 52   | 0    | 0.000   | 2  | 54   | 0.000   | 0 | 54   | 0.000   | 10 | 64   | 0.000   | 0 | 64   | 0    | 0.000   |
| Wb Left          | 72   | 1600 | 0.045 * | 2  | 74   | 0.046 * | 0 | 74   | 0.046 * | 0  | 74   | 0.046 * | 0 | 74   | 1600 | 0.046 * |
| Wb Thru          | 1414 | 4800 | 0.308   | 42 | 1456 | 0.317   | 8 | 1464 | 0.319   | 9  | 1473 | 0.321   | 0 | 1473 | 4800 | 0.321   |
| Wb Right         | 65   | 0    | 0.000   | 2  | 67   | 0.000   | 1 | 68   | 0.000   | 0  | 68   | 0.000   | 0 | 68   | 0    | 0.000   |
| Yellow Allowance |      |      | 0.100   |    |      | 0.100   |   |      | 0.100   |    |      | 0.100   |   |      |      | 0.100   |
| IC U Index       |      |      | 0.875   |    |      | 0.897   |   |      | 0.898   |    |      | 0.908   |   |      |      | 0.908   |
| LOS              |      |      | D       |    |      | D       |   |      | D       |    |      | E       |   |      |      | E       |

1) Count by: NDS Data

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

| Existing (2015) Traffic Volumes   |                 |                      |                 |                      |               | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|---|-----------------|----------------------|-----------------|----------------------|---------------|--|-------------|--------------|---------------|-------------------|--------------------|-----------------------------|----------------|--------------|-----------|------------|------------|-------------------------------|-------------|-------------|-----------|---------|---------|---------------------------------------|-------------|-------------|-----------|---------|---------|---|------------|-------------|-----------|------------|------------|--|------------|-------------|-----------|---------|---------|---|-----------|------------|--|--|--|--------------------------|--|--|--|--|--|
| Date of Count: 07/21/2015    Time Period: 8:00 - 9:00 AM    PHF: 1  |                 |                      |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6   |                 |                      |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Mvmnt   | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Movement<br># | V<br>(vph)   | v<br>(pcph) | cm<br>(pcph) | csh<br>(pcph) | atd*<br>(sec/veh) | LOS<br>(Excl/Shrd) | Da**                        |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Nb Left :</td><td>1 (V7)</td><td>1 (v7)</td><td>Eb left :</td><td>15 (V1)</td><td>17 (v1)</td> </tr> <tr> <td>Nb Thru :</td><td>4 (V8)</td><td>4 (v8)</td><td>Eb Thru :</td><td>1,289 (V2)</td><td>1,289 (v2)</td> </tr> <tr> <td>Nb Right:</td><td>34 (V9)</td><td>37 (v9)</td><td>Eb right:</td><td>16 (V3)</td><td>16 (v3)</td> </tr> <tr> <td>Sb left :</td><td>12 (V10)</td><td>13 (v10)</td><td>Wb left :</td><td>52 (V4)</td><td>57 (v4)</td> </tr> <tr> <td>Sb Thru :</td><td>2 (V11)</td><td>2 (v11)</td><td>Wb Thru :</td><td>2,177 (V5)</td><td>2,177 (v5)</td> </tr> <tr> <td>Sb right:</td><td>28 (V12)</td><td>31 (v12)</td><td>Wb right:</td><td>14 (V6)</td><td>14 (v6)</td> </tr> </table>   |                 |                      |                 |                      |               | Nb Left :  | 1 (V7)      | 1 (v7)       | Eb left :     | 15 (V1)           | 17 (v1)            | Nb Thru :                   | 4 (V8)         | 4 (v8)       | Eb Thru : | 1,289 (V2) | 1,289 (v2) | Nb Right:                     | 34 (V9)     | 37 (v9)     | Eb right: | 16 (V3) | 16 (v3) | Sb left :                             | 12 (V10)    | 13 (v10)    | Wb left : | 52 (V4) | 57 (v4) | Sb Thru :                               | 2 (V11)    | 2 (v11)     | Wb Thru : | 2,177 (V5) | 2,177 (v5) | Sb right:  | 28 (V12)   | 31 (v12)    | Wb right: | 14 (V6) | 14 (v6) | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b> |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Left :   | 1 (V7)          | 1 (v7)               | Eb left :       | 15 (V1)              | 17 (v1)       |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Thru :   | 4 (V8)          | 4 (v8)               | Eb Thru :       | 1,289 (V2)           | 1,289 (v2)    |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Right:   | 34 (V9)         | 37 (v9)              | Eb right:       | 16 (V3)              | 16 (v3)       |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb left :   | 12 (V10)        | 13 (v10)             | Wb left :       | 52 (V4)              | 57 (v4)       |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb Thru :   | 2 (V11)         | 2 (v11)              | Wb Thru :       | 2,177 (V5)           | 2,177 (v5)    |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb right:   | 28 (V12)        | 31 (v12)             | Wb right:       | 14 (V6)              | 14 (v6)       |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 7 - Nb Left  | 1           | 1            | 172           | N/A               | 21.0    N/A        | C    N/A                    | 7.2<br>sec/veh |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 8 - Nb Thru  | 4           | 4            | 241           | 561               | 15.2    6.5        | C    A                      | LOS            |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 9 - Nb Right   | 34          | 37           | 655           | 561               | 5.8    6.8         | A    A                      | A              |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Right from Minor Street</td><td colspan="2">V9</td><td colspan="2">V12</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc9 = 427</td><td>Vc12 = 723</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp9 = 655</td><td>cp12 = 456</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm9 = 655</td><td>cm12 = 456</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,9 = 94%</td><td>Po,12 = 93%</td><td></td><td></td><td></td> </tr> </table>   |                 |                      |                 |                      |               | Right from Minor Street  | V9          |              | V12           |                   |                    | Conflicting Flows, Vc (vph) | Vc9 = 427      | Vc12 = 723   |           |            |            | Potential Capacity, cp (pcph) | cp9 = 655   | cp12 = 456  |           |         |         | Movement Capacity, cm (pcph)          | cm9 = 655   | cm12 = 456  |           |         |         | Probability of Queue-free State:        | Po,9 = 94% | Po,12 = 93% |           |            |            | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Right from Minor Street   | V9              |                      | V12             |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc9 = 427       | Vc12 = 723           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp9 = 655       | cp12 = 456           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm9 = 655       | cm12 = 456           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,9 = 94%      | Po,12 = 93%          |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 10 - Sb left   | 12          | 13           | 173           | N/A               | 22.4    N/A        | C                           | sec/veh        |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 11 - Sb Thru   | 2           | 2            | 241           | 433               | 15.1    8.4        | C    A                      | 12.7           |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 12 - Sb right  | 28          | 31           | 456           | 433               | 8.4    8.9         | A    A                      | LOS<br>B       |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Major Street</td><td colspan="2">V4</td><td colspan="2">V1</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc4 = 435</td><td>Vc1 = 730</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp4 = 1,281</td><td>cp1 = 1,082</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm4 = 1,281</td><td>cm1 = 1,082</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,4 = 96%</td><td>Po,1 = 98%</td><td></td><td></td><td></td> </tr> </table>   |                 |                      |                 |                      |               | Left from Major Street   | V4          |              | V1            |                   |                    | Conflicting Flows, Vc (vph) | Vc4 = 435      | Vc1 = 730    |           |            |            | Potential Capacity, cp (pcph) | cp4 = 1,281 | cp1 = 1,082 |           |         |         | Movement Capacity, cm (pcph)          | cm4 = 1,281 | cm1 = 1,082 |           |         |         | Probability of Queue-free State:        | Po,4 = 96% | Po,1 = 98%  |           |            |            | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>      |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Left from Major Street  | V4              |                      | V1              |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc4 = 435       | Vc1 = 730            |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp4 = 1,281     | cp1 = 1,082          |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm4 = 1,281     | cm1 = 1,082          |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,4 = 96%      | Po,1 = 98%           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 1 - Eb left  | 15          | 17           | 1,082         | 1,082             | 3.4                | A                           | 0.0            |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | 4 - Wb left  | 52          | 57           | 1,281         | 1,281             | 2.9                | A                           | 0.1<br>sec/veh |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Thru from Minor Street</td><td colspan="2">V8</td><td colspan="2">V11</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc8 = 1,217</td><td>Vc11 = 1,217</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp8 = 256</td><td>cp11 = 256</td><td></td><td></td><td></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td><td>f8 = 94%</td><td>f11 = 94%</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm8 = 241</td><td>cm11 = 241</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>P0,8 = 98%</td><td>P0,11 = 99%</td><td></td><td></td><td></td> </tr> </table>  |                 |                      |                 |                      |               | Thru from Minor Street   | V8          |              | V11           |                   |                    | Conflicting Flows, Vc (vph) | Vc8 = 1,217    | Vc11 = 1,217 |           |            |            | Potential Capacity, cp (pcph) | cp8 = 256   | cp11 = 256  |           |         |         | Cpcty Adj Factor for Impending Mvmnts | f8 = 94%    | f11 = 94%   |           |         |         | Movement Capacity, cm (pcph)            | cm8 = 241  | cm11 = 241  |           |            |            | Probability of Queue-free State:                     | P0,8 = 98% | P0,11 = 99% |           |         |         | <b>Average Total Delay for the Intersection</b>   |           |            |  |  |  |                          |  |  |  |  |  |
| Thru from Minor Street  | V8              |                      | V11             |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc8 = 1,217     | Vc11 = 1,217         |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp8 = 256       | cp11 = 256           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts   | f8 = 94%        | f11 = 94%            |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm8 = 241       | cm11 = 241           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | P0,8 = 98%      | P0,11 = 99%          |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | <b>Di = 0.2 sec/veh</b>  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Minor Street</td><td colspan="2">V7</td><td colspan="2">V10</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc7 = 1,218</td><td>Vc10 = 1,219</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp7 = 195</td><td>cp10 = 194</td><td></td><td></td><td></td> </tr> <tr> <td>MjrLft, MinThr Impedence Factor, p"</td><td>p"7 = 93%</td><td>p"10 = 92%</td><td></td><td></td><td></td> </tr> <tr> <td>MjrLft, MinThr Adj Impedence Factor, p'</td><td>p'7 = 95%</td><td>p'10 = 94%</td><td></td><td></td><td></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f</td><td>f7 = 88%</td><td>f10 = 89%</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm7 = 172</td><td>cm10 = 173</td><td></td><td></td><td></td> </tr> </table> |                 |                      |                 |                      |               | Left from Minor Street   | V7          |              | V10           |                   |                    | Conflicting Flows, Vc (vph) | Vc7 = 1,218    | Vc10 = 1,219 |           |            |            | Potential Capacity, cp (pcph) | cp7 = 195   | cp10 = 194  |           |         |         | MjrLft, MinThr Impedence Factor, p"   | p"7 = 93%   | p"10 = 92%  |           |         |         | MjrLft, MinThr Adj Impedence Factor, p' | p'7 = 95%  | p'10 = 94%  |           |            |            | Cpcty Adj Factor for Impending Mvmnt, f              | f7 = 88%   | f10 = 89%   |           |         |         | Movement Capacity, cm (pcph)                      | cm7 = 172 | cm10 = 173 |  |  |  | <b>C O M M E N T S :</b> |  |  |  |  |  |
| Left from Minor Street  | V7              |                      | V10             |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc7 = 1,218     | Vc10 = 1,219         |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp7 = 195       | cp10 = 194           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"   | p"7 = 93%       | p"10 = 92%           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p'   | p'7 = 95%       | p'10 = 94%           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f   | f7 = 88%        | f10 = 89%            |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm7 = 172       | cm10 = 173           |                 |                      |               |  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | <p>Major street left turn movements operate at level of service "A".</p> <p>The side street left turning movements operate at LOS "C".</p> <p>Cumulatively, side street vehicles will experience an average delay of about 7.2 seconds and 12.7 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements.</p> <p>The Intersection's Average Total Delay is 0.20 seconds per vehicle.</p> <p>These are excellent levels of service.</p> |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |                 |                      |                 |                      |               | Name: Dr. Antonio S. Coco  |             |              |               |                   |                    |                             |                |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

| Future (2017) Background Traffic Volumes   |              |                             |              |                   |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION                     |          |           |            |                |                 |      |         |     |         |
|--|--------------|-----------------------------|--------------|-------------------|------------|---|----------|-----------|------------|----------------|-----------------|------|---------|-----|---------|
| Date of Count: 07/21/2015  |              | Time Period: 8:00 - 9:00 AM |              | PHF: 1            |            |   |          |           |            |                |                 |      |         |     |         |
| Type of Control: Side Street Stop  |              | Average Running Speed: 35   |              | Lanes on Major: 6 |            |   |          |           |            |                |                 |      |         |     |         |
| Mvmnt  | Veh/hr (vph) | Adjstd Vol (pcph)           | Veh/hr (vph) | Adjstd Vol (pcph) | Movement # | V (vph)   | v (pcph) | cm (pcph) | csh (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da** |         |     |         |
| Nb Left : 1 (V7) 1 (v7)      Eb left : 15 (V1) 17 (v1)<br>Nb Thru : 4 (V8) 4 (v8)      Eb Thru : 1,328 (V2) 1,328 (v2)<br>Nb Right: 35 (V9) 39 (v9)      Eb right: 16 (V3) 16 (v3)         |              |                             |              |                   |            | MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.                            |          |           |            |                |                 |      |         |     |         |
| Sb left : 12 (V10) 13 (v10)      Wb left : 54 (V4) 59 (v4)<br>Sb Thru : 2 (V11) 2 (v11)      Wb Thru : 2,242 (V5) 2,242 (v5)<br>Sb right: 29 (V12) 32 (v12)      Wb right: 14 (V6) 14 (v6) |              |                             |              |                   |            | 7 - Nb Left   | 1        | 1         | 163        | N/A            | 22.3            | N/A  | C       | N/A | 7.3     |
|  |              |                             |              |                   |            | 8 - Nb Thru   | 4        | 4         | 231        | 553            | 15.9            | 6.6  | C       | A   | LOS     |
|  |              |                             |              |                   |            | 9 - Nb Right  | 35       | 39        | 645        | 553            | 5.9             | 7.0  | A       | A   | A       |
| Right from Minor Street V9 V12   |              |                             |              |                   |            | MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.                         |          |           |            |                |                 |      |         |     |         |
| Conflicting Flows, Vc (vph)  |              | Vc9 = 440                   |              | Vc12 = 745        |            | 10 - Sb left  | 12       | 13        | 163        | N/A            | 23.9            | N/A  | C       |     | sec/veh |
| Potential Capacity, cp (pcph)  |              | cp9 = 645                   |              | cp12 = 444        |            | 11 - Sb Thru  | 2        | 2         | 231        | 421            | 15.7            | 8.6  | C       | A   | 13.3    |
| Movement Capacity, cm (pcph)   |              | cm9 = 645                   |              | cm12 = 444        |            | 12 - Sb right   | 29       | 32        | 444        | 421            | 8.7             | 9.2  | A       | A   | LOS     |
| Probability of Queue-free State:   |              | Po,9 = 94%                  |              | Po,12 = 93%       |            |   |          |           |            |                |                 |      | B       |     |         |
| Left from Major Street V4 V1   |              |                             |              |                   |            | MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.                              |          |           |            |                |                 |      |         |     |         |
| Conflicting Flows, Vc (vph)  |              | Vc4 = 448                   |              | Vc1 = 752         |            | 1 - Eb left   | 15       | 17        | 1,068      | 1,068          | 3.4             |      | A       |     | 0.0     |
| Potential Capacity, cp (pcph)  |              | cp4 = 1,272                 |              | cp1 = 1,068       |            | 4 - Wb left   | 54       | 59        | 1,272      | 1,272          | 3.0             |      | A       |     | 0.1     |
| Movement Capacity, cm (pcph)   |              | cm4 = 1,272                 |              | cm1 = 1,068       |            |   |          |           |            |                |                 |      | sec/veh |     |         |
| Probability of Queue-free State:   |              | Po,4 = 95%                  |              | Po,1 = 98%        |            |   |          |           |            |                |                 |      |         |     |         |
| Thru from Minor Street V8 V11  |              |                             |              |                   |            | Average Total Delay for the Intersection                              |          |           |            |                |                 |      |         |     |         |
| Conflicting Flows, Vc (vph)  |              | Vc8 = 1,254                 |              | Vc11 = 1,254      |            | Di = 0.2 sec/veh  |          |           |            |                |                 |      |         |     |         |
| Potential Capacity, cp (pcph)  |              | cp8 = 246                   |              | cp11 = 246        |            | C O M M E N T S :   |          |           |            |                |                 |      |         |     |         |
| Cpcty Adj Factor for Impending Mvmnts  |              | f8 = 94%                    |              | f11 = 94%         |            | Major street left turn movements operate at level of service "A".     |          |           |            |                |                 |      |         |     |         |
| Movement Capacity, cm (pcph)   |              | cm8 = 231                   |              | cm11 = 231        |            | The side street left turning movements operate at LOS "C".            |          |           |            |                |                 |      |         |     |         |
| Probability of Queue-free State:   |              | P0,8 = 98%                  |              | P0,11 = 99%       |            | Cumulatively, side street vehicles will experience an average delay   |          |           |            |                |                 |      |         |     |         |
| Left from Minor Street V7 V10  |              |                             |              |                   |            | of about 7.3 seconds and 13.3 seconds per vehicle and LOS "A" and "B" |          |           |            |                |                 |      |         |     |         |
| Conflicting Flows, Vc (vph)  |              | Vc7 = 1,255                 |              | Vc10 = 1,256      |            | respectively for northbound and southbound movements.                 |          |           |            |                |                 |      |         |     |         |
| Potential Capacity, cp (pcph)  |              | cp7 = 185                   |              | cp10 = 184        |            | The Intersection's Average Total Delay is 0.20 seconds per vehicle.   |          |           |            |                |                 |      |         |     |         |
| MjrLft, MinThr Impedence Factor, p"  |              | p"7 = 93%                   |              | p"10 = 92%        |            | These are excellent levels of service.                                |          |           |            |                |                 |      |         |     |         |
| MjrLft, MinThr Adj Impedence Factor, p'  |              | p'7 = 95%                   |              | p'10 = 94%        |            |   |          |           |            |                |                 |      |         |     |         |
| Cpcty Adj Factor for Impending Mvmnt, f  |              | f7 = 88%                    |              | f10 = 88%         |            |   |          |           |            |                |                 |      |         |     |         |
| Movement Capacity, cm (pcph)   |              | cm7 = 163                   |              | cm10 = 163        |            | Name: Dr. Antonio S. Coco   |          |           |            |                |                 |      |         |     |         |

\* Average Total Delay, sec/veh.      \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/Related Projects' Traffic<br>Date of Count: 07/21/2015 Time Period: 8:00 - 9:00 AM PHF: 1<br>Type of Control: Side Street Stop Average Running Speed: 35 Lanes on Major: 6  |              |                   |              |                   | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |         |          |           |            |                |                 |   |      |         |  |
|---|--------------|-------------------|--------------|-------------------|---|---------|----------|-----------|------------|----------------|-----------------|---|------|---------|--|
| Mvmnt   | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement #  | V (vph) | v (pcph) | cm (pcph) | csh (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) |   | Da** |         |  |
| Nb Left : 1 (V7) 1 (v7) Eb left : 15 (V1) 17 (v1)<br>Nb Thru : 4 (V8) 4 (v8) Eb Thru : 1,339 (V2) 1,339 (v2)<br>Nb Right: 35 (V9) 39 (v9) Eb right: 16 (V3) 16 (v3)   |              |                   |              |                   | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b>   |         |          |           |            |                |                 |   |      |         |  |
| Sb left : 12 (V10) 13 (v10) Wb left : 54 (V4) 59 (v4)<br>Sb Thru : 2 (V11) 2 (v11) Wb Thru : 2,245 (V5) 2,245 (v5)<br>Sb right: 29 (V12) 32 (v12) Wb right: 14 (V6) 14 (v6)   |              |                   |              |                   | 7 - Nb Left   | 1       | 1        | 161       | N/A        | 22.5           | N/A             | C | N/A  | 7.3     |  |
|   |              |                   |              |                   | 8 - Nb Thru   | 4       | 4        | 229       | 549        | 16.0           | 6.6             | C | A    | LOS     |  |
|   |              |                   |              |                   | 9 - Nb Right  | 35      | 39       | 641       | 549        | 5.9            | 7.0             | A | A    | A       |  |
| Right from Minor Street V9 V12  |              |                   |              |                   | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b>  |         |          |           |            |                |                 |   |      |         |  |
| Conflicting Flows, Vc (vph)   |              | Vc9 = 444         | Vc12 = 746   | 10 - Sb left      |   | 12      | 13       | 162       | N/A        | 24.1           | N/A             | C |      | sec/veh |  |
| Potential Capacity, cp (pcph)   |              | cp9 = 641         | cp12 = 443   | 11 - Sb Thru      |   | 2       | 2        | 229       | 420        | 15.9           | 8.6             | C | A    | 13.3    |  |
| Movement Capacity, cm (pcph)  |              | cm9 = 641         | cm12 = 443   | 12 - Sb right     |   | 29      | 32       | 443       | 420        | 8.7            | 9.2             | A | A    | LOS     |  |
| Probability of Queue-free State:  |              | Po,9 = 94%        | Po,12 = 93%  |                   |   |         |          |           |            |                |                 |   |      | B       |  |
| Left from Major Street V4 V1  |              |                   |              |                   | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>   |         |          |           |            |                |                 |   |      |         |  |
| Conflicting Flows, Vc (vph)   |              | Vc4 = 452         | Vc1 = 753    | 1 - Eb left       |   | 15      | 17       | 1,068     | 1,068      | 3.4            |                 | A |      | 0.0     |  |
| Potential Capacity, cp (pcph)   |              | cp4 = 1,269       | cp1 = 1,068  | 4 - Wb left       |   | 54      | 59       | 1,269     | 1,269      | 3.0            |                 | A |      | 0.1     |  |
| Movement Capacity, cm (pcph)  |              | cm4 = 1,269       | cm1 = 1,068  |                   |   |         |          |           |            |                |                 |   |      | sec/veh |  |
| Probability of Queue-free State:  |              | Po,4 = 95%        | Po,1 = 98%   |                   |   |         |          |           |            |                |                 |   |      |         |  |
| Thru from Minor Street V8 V11   |              |                   |              |                   | <b>Average Total Delay for the Intersection</b>   |         |          |           |            |                |                 |   |      |         |  |
| Conflicting Flows, Vc (vph) Vc8 = 1,259 Vc11 = 1,259<br>Potential Capacity, cp (pcph) cp8 = 244 cp11 = 244<br>Cpcty Adj Factor for Impending Mvmnts f8 = 94% f11 = 94%<br>Movement Capacity, cm (pcph) cm8 = 229 cm11 = 229<br>Probability of Queue-free State: P0,8 = 98% P0,11 = 99%  |              |                   |              |                   | <b>Di = 0.2 sec/veh</b>   |         |          |           |            |                |                 |   |      |         |  |
| Left from Minor Street V7 V10   |              |                   |              |                   | <b>C O M M E N T S :</b>  |         |          |           |            |                |                 |   |      |         |  |
| Conflicting Flows, Vc (vph) Vc7 = 1,260 Vc10 = 1,261<br>Potential Capacity, cp (pcph) cp7 = 183 cp10 = 183<br>MjrLft, MinThr Impedence Factor, p" p"7 = 93% p"10 = 92%<br>MjrLft, MinThr Adj Impedence Factor, p' p'7 = 95% p'10 = 94%<br>Cpcty Adj Factor for Impending Mvmnt, f f7 = 88% f10 = 88%<br>Movement Capacity, cm (pcph) cm7 = 161 cm10 = 162 |              |                   |              |                   | Major street left turn movements operate at level of service "A".<br>The side street left turning movements operate at LOS "C".<br>Cumulatively, side street vehicles will experience an average delay of about 7.3 seconds and 13.3 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements.<br>The Intersection's Average Total Delay is 0.20 seconds per vehicle.<br>These are excellent levels of service. |         |          |           |            |                |                 |   |      |         |  |
|   |              |                   |              |                   | Name: Dr. Antonio S. Coco   |         |          |           |            |                |                 |   |      |         |  |

\* Average Total Delay, sec/veh. \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/ Site Traffic   |              |                   |              |                   |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|---|--------------|-------------------|--------------|-------------------|------------|---|----------|-----------|------------|----------------|-----------------|-----------------------------|-------------|--------------|-----------|------------|------------|-------------------------------|-------------|-------------|-----------|---------|---------|---------------------------------------|-------------|-------------|-----------|---------|---------|---|------------|-------------|-----------|------------|------------|--|------------|-------------|-----------|---------|---------|---|-----------|------------|--|--|--|--------------------------|--|--|--|--|--|
| Date of Count: 07/21/2015    Time Period: 8:00 - 9:00 AM    PHF: 1  |              |                   |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6   |              |                   |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Mvmnt   | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement # | V (vph)   | v (pcph) | cm (pcph) | csh (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da**                        |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Nb Left :</td><td>3 (V7)</td><td>3 (v7)</td><td>Eb left :</td><td>15 (V1)</td><td>17 (v1)</td> </tr> <tr> <td>Nb Thru :</td><td>4 (V8)</td><td>4 (v8)</td><td>Eb Thru :</td><td>1,339 (V2)</td><td>1,339 (v2)</td> </tr> <tr> <td>Nb Right:</td><td>35 (V9)</td><td>39 (v9)</td><td>Eb right:</td><td>26 (V3)</td><td>26 (v3)</td> </tr> <tr> <td>Sb left :</td><td>12 (V10)</td><td>13 (v10)</td><td>Wb left :</td><td>54 (V4)</td><td>59 (v4)</td> </tr> <tr> <td>Sb Thru :</td><td>3 (V11)</td><td>3 (v11)</td><td>Wb Thru :</td><td>2,245 (V5)</td><td>2,245 (v5)</td> </tr> <tr> <td>Sb right:</td><td>29 (V12)</td><td>32 (v12)</td><td>Wb right:</td><td>14 (V6)</td><td>14 (v6)</td> </tr> </table>   |              |                   |              |                   |            | Nb Left :   | 3 (V7)   | 3 (v7)    | Eb left :  | 15 (V1)        | 17 (v1)         | Nb Thru :                   | 4 (V8)      | 4 (v8)       | Eb Thru : | 1,339 (V2) | 1,339 (v2) | Nb Right:                     | 35 (V9)     | 39 (v9)     | Eb right: | 26 (V3) | 26 (v3) | Sb left :                             | 12 (V10)    | 13 (v10)    | Wb left : | 54 (V4) | 59 (v4) | Sb Thru :   | 3 (V11)    | 3 (v11)     | Wb Thru : | 2,245 (V5) | 2,245 (v5) | Sb right:  | 29 (V12)   | 32 (v12)    | Wb right: | 14 (V6) | 14 (v6) | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b> |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Left :   | 3 (V7)       | 3 (v7)            | Eb left :    | 15 (V1)           | 17 (v1)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Thru :   | 4 (V8)       | 4 (v8)            | Eb Thru :    | 1,339 (V2)        | 1,339 (v2) |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Right:   | 35 (V9)      | 39 (v9)           | Eb right:    | 26 (V3)           | 26 (v3)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb left :   | 12 (V10)     | 13 (v10)          | Wb left :    | 54 (V4)           | 59 (v4)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb Thru :   | 3 (V11)      | 3 (v11)           | Wb Thru :    | 2,245 (V5)        | 2,245 (v5) |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb right:   | 29 (V12)     | 32 (v12)          | Wb right:    | 14 (V6)           | 14 (v6)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 7 - Nb Left   | 3        | 3         | 161        | N/A            | 22.8    N/A     | C    N/A                    | 8.1         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 8 - Nb Thru   | 4        | 4         | 230        | 551            | 15.9    6.6     | C    A                      | LOS         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 9 - Nb Right  | 35       | 39        | 643        | 551            | 5.9    7.0      | A    A                      | A           |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Right from Minor Street</td><td colspan="2">V9</td><td colspan="2">V12</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc9 = 442</td><td>Vc12 = 746</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp9 = 643</td><td>cp12 = 443</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm9 = 643</td><td>cm12 = 443</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,9 = 94%</td><td>Po,12 = 93%</td><td></td><td></td><td></td> </tr> </table>   |              |                   |              |                   |            | Right from Minor Street   | V9       |           | V12        |                |                 | Conflicting Flows, Vc (vph) | Vc9 = 442   | Vc12 = 746   |           |            |            | Potential Capacity, cp (pcph) | cp9 = 643   | cp12 = 443  |           |         |         | Movement Capacity, cm (pcph)          | cm9 = 643   | cm12 = 443  |           |         |         | Probability of Queue-free State:                  | Po,9 = 94% | Po,12 = 93% |           |            |            | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Right from Minor Street   | V9           |                   | V12          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc9 = 442    | Vc12 = 746        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp9 = 643    | cp12 = 443        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm9 = 643    | cm12 = 443        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,9 = 94%   | Po,12 = 93%       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 10 - Sb left  | 12       | 13        | 163        | N/A            | 23.9    N/A     | C                           | sec/veh     |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 11 - Sb Thru  | 3        | 3         | 230        | 410            | 15.9    8.8     | C    A                      | 13.3        |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 12 - Sb right   | 29       | 32        | 443        | 410            | 8.7    9.4      | A    A                      | LOS<br>B    |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Major Street</td><td colspan="2">V4</td><td colspan="2">V1</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc4 = 455</td><td>Vc1 = 753</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp4 = 1,267</td><td>cp1 = 1,068</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm4 = 1,267</td><td>cm1 = 1,068</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,4 = 95%</td><td>Po,1 = 98%</td><td></td><td></td><td></td> </tr> </table>   |              |                   |              |                   |            | Left from Major Street  | V4       |           | V1         |                |                 | Conflicting Flows, Vc (vph) | Vc4 = 455   | Vc1 = 753    |           |            |            | Potential Capacity, cp (pcph) | cp4 = 1,267 | cp1 = 1,068 |           |         |         | Movement Capacity, cm (pcph)          | cm4 = 1,267 | cm1 = 1,068 |           |         |         | Probability of Queue-free State:                  | Po,4 = 95% | Po,1 = 98%  |           |            |            | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>      |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Left from Major Street  | V4           |                   | V1           |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc4 = 455    | Vc1 = 753         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp4 = 1,267  | cp1 = 1,068       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm4 = 1,267  | cm1 = 1,068       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,4 = 95%   | Po,1 = 98%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 1 - Eb left   | 15       | 17        | 1,068      | 1,068          | 3.4             | A                           | 0.0         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 4 - Wb left   | 54       | 59        | 1,267      | 1,267          | 3.0             | A                           | 0.1         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            |   |          |           |            |                |                 |                             | sec/veh     |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Thru from Minor Street</td><td colspan="2">V8</td><td colspan="2">V11</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc8 = 1,257</td><td>Vc11 = 1,257</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp8 = 245</td><td>cp11 = 245</td><td></td><td></td><td></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td><td>f8 = 94%</td><td>f11 = 94%</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm8 = 230</td><td>cm11 = 230</td><td></td><td></td><td></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>P0,8 = 98%</td><td>P0,11 = 99%</td><td></td><td></td><td></td> </tr> </table>  |              |                   |              |                   |            | Thru from Minor Street  | V8       |           | V11        |                |                 | Conflicting Flows, Vc (vph) | Vc8 = 1,257 | Vc11 = 1,257 |           |            |            | Potential Capacity, cp (pcph) | cp8 = 245   | cp11 = 245  |           |         |         | Cpcty Adj Factor for Impending Mvmnts | f8 = 94%    | f11 = 94%   |           |         |         | Movement Capacity, cm (pcph)                      | cm8 = 230  | cm11 = 230  |           |            |            | Probability of Queue-free State:                     | P0,8 = 98% | P0,11 = 99% |           |         |         | <b>Average Total Delay for the Intersection</b>   |           |            |  |  |  |                          |  |  |  |  |  |
| Thru from Minor Street  | V8           |                   | V11          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc8 = 1,257  | Vc11 = 1,257      |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp8 = 245    | cp11 = 245        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts   | f8 = 94%     | f11 = 94%         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm8 = 230    | cm11 = 230        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | P0,8 = 98%   | P0,11 = 99%       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | <b>Di = 0.2 sec/veh</b>   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Minor Street</td><td colspan="2">V7</td><td colspan="2">V10</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc7 = 1,259</td><td>Vc10 = 1,259</td><td></td><td></td><td></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp7 = 184</td><td>cp10 = 184</td><td></td><td></td><td></td> </tr> <tr> <td>MjrLft, MinThr Impedence Factor, p"</td><td>p"7 = 93%</td><td>p"10 = 92%</td><td></td><td></td><td></td> </tr> <tr> <td>MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94%</td><td></td><td>p'10 = 94%</td><td></td><td></td><td></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f f7 = 88%</td><td></td><td>f10 = 88%</td><td></td><td></td><td></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm7 = 161</td><td>cm10 = 163</td><td></td><td></td><td></td> </tr> </table> |              |                   |              |                   |            | Left from Minor Street  | V7       |           | V10        |                |                 | Conflicting Flows, Vc (vph) | Vc7 = 1,259 | Vc10 = 1,259 |           |            |            | Potential Capacity, cp (pcph) | cp7 = 184   | cp10 = 184  |           |         |         | MjrLft, MinThr Impedence Factor, p"   | p"7 = 93%   | p"10 = 92%  |           |         |         | MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94% |            | p'10 = 94%  |           |            |            | Cpcty Adj Factor for Impending Mvmnt, f f7 = 88%     |            | f10 = 88%   |           |         |         | Movement Capacity, cm (pcph)                      | cm7 = 161 | cm10 = 163 |  |  |  | <b>C O M M E N T S :</b> |  |  |  |  |  |
| Left from Minor Street  | V7           |                   | V10          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc7 = 1,259  | Vc10 = 1,259      |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp7 = 184    | cp10 = 184        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"   | p"7 = 93%    | p"10 = 92%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94%   |              | p'10 = 94%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f f7 = 88%  |              | f10 = 88%         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm7 = 161    | cm10 = 163        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | Major street left turn movements operate at level of service "A".   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | The side street left turning movements operate at LOS "C".  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | Cumulatively, side street vehicles will experience an average delay of about 8.1 seconds and 13.3 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements. |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | The Intersection's Average Total Delay is 0.20 seconds per vehicle.   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | These are excellent levels of service.  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | Name: Dr. Antonio S. Coco   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.



**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

Future (2017) Background Traffic Volumes

Date of Count: 07/21/2015    Time Period: 5:00 - 6:00 PM    PHF: 1

Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6

**MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION**

| Mvmnt   | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph)  | Movement #   | V<br>(vph) | v<br>(pcph) | cm<br>(pcph) | csh<br>(pcph) | atd*<br>(sec/veh) | LOS<br>(Excl/Shrd) | Da**       |
|---|-----------------|----------------------|-----------------|-----------------------|--------------|------------|-------------|--------------|---------------|-------------------|--------------------|------------|
| <p align="center"><b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b></p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| Nb Left :   | 6 (V7)          | 7 (v7)               | Eb left :       | 35 (V1) 39 (v1)       | 7 - Nb Left  | 6          | 7           | 135          | N/A           | 27.9              | N/A                | D N/A 12.2 |
| Nb Thru :   | 6 (V8)          | 7 (v8)               | Eb Thru :       | 2,106 (V2) 2,106 (v2) | 8 - Nb Thru  | 6          | 7           | 211          | 390           | 17.5              | 9.4                | C A LOS    |
| Nb Right:   | 32 (V9)         | 35 (v9)              | Eb right:       | 23 (V3) 23 (v3)       | 9 - Nb Right | 32         | 35          | 470          | 390           | 8.2               | 10.0               | A B B      |
| Sb left :   | 8 (V10)         | 9 (v10)              | Wb left :       | 38 (V4) 42 (v4)       |              |            |             |              |               |                   |                    |            |
| Sb Thru :   | 11 (V11)        | 12 (v11)             | Wb Thru :       | 1,671 (V5) 1,671 (v5) |              |            |             |              |               |                   |                    |            |
| Sb right:   | 52 (V12)        | 57 (v12)             | Wb right:       | 12 (V6) 12 (v6)       |              |            |             |              |               |                   |                    |            |
| <p align="center"><b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b></p>  |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p align="center"><b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b></p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p align="center"><b>Average Total Delay for the Intersection</b></p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p align="center"><b>Di = 0.3 sec/veh</b></p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p align="center"><b>C O M M E N T S :</b></p>  |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>Major street left turn movements operate at level of service "A".</p>  |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>The side street left turning movements operate at LOS "D".</p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>Cumulatively, side street vehicles will experience an average delay of about 12.2 seconds and 11.0 seconds per vehicle and LOS "B" respectively for northbound and southbound movements.</p> |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>The Intersection's Average Total Delay is 0.30 seconds per vehicle.</p>  |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>These are excellent levels of service.</p>   |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |
| <p>Name: Dr. Antonio S. Coco</p>  |                 |                      |                 |                       |              |            |             |              |               |                   |                    |            |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Maple Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/Related Projects' Traffic<br>Date of Count: 07/21/2015 Time Period: 5:00 - 6:00 PM PHF: 1<br>Type of Control: Side Street Stop Average Running Speed: 35 Lanes on Major: 6 |                 |                      |                 |                      | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION  |            |             |              |               |                   |                    |       |         |         |  |
|--|-----------------|----------------------|-----------------|----------------------|--|------------|-------------|--------------|---------------|-------------------|--------------------|-------|---------|---------|--|
| Mvmnt  | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Movement #   | V<br>(vph) | v<br>(pcph) | cm<br>(pcph) | csh<br>(pcph) | atd*<br>(sec/veh) | LOS<br>(Excl/Shrd) |       | Da**    |         |  |
| Nb Left : 6 (V7) 7 (v7) Eb left : 35 (V1) 39 (v1)<br>Nb Thru : 6 (V8) 7 (v8) Eb Thru : 2,112 (V2) 2,112 (v2)<br>Nb Right: 32 (V9) 35 (v9) Eb right: 23 (V3) 23 (v3)  |                 |                      |                 |                      | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b>  |            |             |              |               |                   |                    |       |         |         |  |
| Sb left : 8 (V10) 9 (v10) Wb left : 38 (V4) 42 (v4)<br>Sb Thru : 11 (V11) 12 (v11) Wb Thru : 1,681 (V5) 1,681 (v5)<br>Sb right: 52 (V12) 57 (v12) Wb right: 12 (V6) 12 (v6)                                    |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         | sec/veh |  |
|  |                 |                      |                 |                      | 7 - Nb Left  | 6          | 7           | 134          | N/A           | 28.1              | N/A                | D N/A | 12.2    |         |  |
|  |                 |                      |                 |                      | 8 - Nb Thru  | 6          | 7           | 210          | 389           | 17.6              | 9.4                | C A   | LOS     |         |  |
|  |                 |                      |                 |                      | 9 - Nb Right   | 32         | 35          | 469          | 389           | 8.2               | 10.1               | A B   | B       |         |  |
| <b>Right from Minor Street</b> V9 V12  |                 |                      |                 |                      | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b>   |            |             |              |               |                   |                    |       |         |         |  |
| Conflicting Flows, Vc (vph) Vc9 = 700 Vc12 = 558   |                 |                      |                 |                      | 10 - Sb left   | 8          | 9           | 141          | N/A           | 27.1              | N/A                | D     | sec/veh |         |  |
| Potential Capacity, cp (pcph) cp9 = 469 cp12 = 558   |                 |                      |                 |                      | 11 - Sb Thru   | 11         | 12          | 210          | 433           | 18.1              | 8.5                | C A   | 11.1    |         |  |
| Movement Capacity, cm (pcph) cm9 = 469 cm12 = 558  |                 |                      |                 |                      | 12 - Sb right  | 52         | 57          | 558          | 433           | 7.1               | 9.4                | A A   | LOS     |         |  |
| Probability of Queue-free State: Po,9 = 93% Po,12 = 90%  |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       | B       |         |  |
| <b>Left from Major Street</b> V4 V1  |                 |                      |                 |                      | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>  |            |             |              |               |                   |                    |       |         |         |  |
| Conflicting Flows, Vc (vph) Vc4 = 712 Vc1 = 564  |                 |                      |                 |                      | 1 - Eb left  | 35         | 39          | 1,190        | 1,190         | 3.1               |                    | A     | 0.1     |         |  |
| Potential Capacity, cp (pcph) cp4 = 1,093 cp1 = 1,190  |                 |                      |                 |                      | 4 - Wb left  | 38         | 42          | 1,093        | 1,093         | 3.4               |                    | A     | 0.1     |         |  |
| Movement Capacity, cm (pcph) cm4 = 1,093 cm1 = 1,190   |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       | sec/veh |         |  |
| Probability of Queue-free State: Po,4 = 96% Po,1 = 97%   |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         |         |  |
| <b>Thru from Minor Street</b> V8 V11   |                 |                      |                 |                      | <b>Average Total Delay for the Intersection</b>  |            |             |              |               |                   |                    |       |         |         |  |
| Conflicting Flows, Vc (vph) Vc8 = 1,331 Vc11 = 1,331   |                 |                      |                 |                      | <b>Di = 0.3 sec/veh</b>  |            |             |              |               |                   |                    |       |         |         |  |
| Potential Capacity, cp (pcph) cp8 = 226 cp11 = 226   |                 |                      |                 |                      | <b>C O M M E N T S :</b>   |            |             |              |               |                   |                    |       |         |         |  |
| Cpcty Adj Factor for Impending Mvmnts f8 = 93% f11 = 93%   |                 |                      |                 |                      | Major street left turn movements operate at level of service "A".  |            |             |              |               |                   |                    |       |         |         |  |
| Movement Capacity, cm (pcph) cm8 = 210 cm11 = 210  |                 |                      |                 |                      | The side street left turning movements operate at LOS "D".   |            |             |              |               |                   |                    |       |         |         |  |
| Probability of Queue-free State: P0,8 = 97% P0,11 = 94%  |                 |                      |                 |                      | Cumulatively, side street vehicles will experience an average delay of about 12.2 seconds and 11.1 seconds per vehicle and LOS "B" respectively for northbound and southbound movements. |            |             |              |               |                   |                    |       |         |         |  |
| <b>Left from Minor Street</b> V7 V10   |                 |                      |                 |                      | The Intersection's Average Total Delay is 0.30 seconds per vehicle.  |            |             |              |               |                   |                    |       |         |         |  |
| Conflicting Flows, Vc (vph) Vc7 = 1,337 Vc10 = 1,334   |                 |                      |                 |                      | These are excellent levels of service.   |            |             |              |               |                   |                    |       |         |         |  |
| Potential Capacity, cp (pcph) cp7 = 165 cp10 = 165   |                 |                      |                 |                      | Name: Dr. Antonio S. Coco  |            |             |              |               |                   |                    |       |         |         |  |
| MjrLft, MinThr Impedence Factor, p" p"7 = 88% p"10 = 90%   |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         |         |  |
| MjrLft, MinThr Adj Impedence Factor, p' p'7 = 91% p'10 = 92%   |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         |         |  |
| Cpcty Adj Factor for Impending Mvmnt, f f7 = 81% f10 = 85%   |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         |         |  |
| Movement Capacity, cm (pcph) cm7 = 134 cm10 = 141  |                 |                      |                 |                      |  |            |             |              |               |                   |                    |       |         |         |  |

\* Average Total Delay, sec/veh. \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.



**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Existing (2015) Traffic Volumes  |              |                   |              |                   |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|--|--------------|-------------------|--------------|-------------------|------------|---|----------|-----------|------------|----------------|-----------------|-----------|-----------------------------|---------|-----------|------------|------------|-----------|---------|-------------------------------|-----------|--------|--------|-----------|---------|---------|---------------------------------------|---------|---------|-----------|---------|---------|-----------|---|------------|-----------|----------|----------|-----------|---------|--|---|-----|---------|------|--|--|---|-------|-----|--------|-----|--|--|--------------------------|--|--|--|--|--|
| Date of Count: 07/21/2015    Time Period: 8:00 - 9:00 AM    PHF: 1   |              |                   |              |                   |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6  |              |                   |              |                   |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Mvmnt  | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement # | V (vph)   | v (pcph) | cm (pcph) | csH (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da**      |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Nb Left :</td><td>1 (V7)</td><td>1 (v7)</td><td>Eb left :</td><td>42 (V1)</td><td>46 (v1)</td> </tr> <tr> <td>Nb Thru :</td><td>5 (V8)</td><td>6 (v8)</td><td>Eb Thru :</td><td>1,284 (V2)</td><td>1,284 (v2)</td> </tr> <tr> <td>Nb Right:</td><td>49 (V9)</td><td>54 (v9)</td><td>Eb right:</td><td>8 (V3)</td><td>8 (v3)</td> </tr> <tr> <td>Sb left :</td><td>5 (V10)</td><td>6 (v10)</td><td>Wb left :</td><td>16 (V4)</td><td>18 (v4)</td> </tr> <tr> <td>Sb Thru :</td><td>1 (V11)</td><td>1 (v11)</td><td>Wb Thru :</td><td>2,222 (V5)</td><td>2,222 (v5)</td> </tr> <tr> <td>Sb right:</td><td>32 (V12)</td><td>35 (v12)</td><td>Wb right:</td><td>27 (V6)</td><td>27 (v6)</td> </tr> </table>  |              |                   |              |                   |            | Nb Left :   | 1 (V7)   | 1 (v7)    | Eb left :  | 42 (V1)        | 46 (v1)         | Nb Thru : | 5 (V8)                      | 6 (v8)  | Eb Thru : | 1,284 (V2) | 1,284 (v2) | Nb Right: | 49 (V9) | 54 (v9)                       | Eb right: | 8 (V3) | 8 (v3) | Sb left : | 5 (V10) | 6 (v10) | Wb left :                             | 16 (V4) | 18 (v4) | Sb Thru : | 1 (V11) | 1 (v11) | Wb Thru : | 2,222 (V5)                              | 2,222 (v5) | Sb right: | 32 (V12) | 35 (v12) | Wb right: | 27 (V6) | 27 (v6)  | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b> |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Nb Left :  | 1 (V7)       | 1 (v7)            | Eb left :    | 42 (V1)           | 46 (v1)    |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Nb Thru :  | 5 (V8)       | 6 (v8)            | Eb Thru :    | 1,284 (V2)        | 1,284 (v2) |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Nb Right:  | 49 (V9)      | 54 (v9)           | Eb right:    | 8 (V3)            | 8 (v3)     |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Sb left :  | 5 (V10)      | 6 (v10)           | Wb left :    | 16 (V4)           | 18 (v4)    |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Sb Thru :  | 1 (V11)      | 1 (v11)           | Wb Thru :    | 2,222 (V5)        | 2,222 (v5) |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Sb right:  | 32 (V12)     | 35 (v12)          | Wb right:    | 27 (V6)           | 27 (v6)    |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            |   |          |           |            |                |                 | sec/veh   |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 7 - Nb Left   | 1        | 1         | 171        | N/A            | 21.2            | N/A       | C N/A                       | 7.0     |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 8 - Nb Thru   | 5        | 6         | 241        | 559            | 15.3            | 6.5       | C A                         | LOS     |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 9 - Nb Right  | 49       | 54        | 655        | 559            | 5.9             | 7.1       | A A                         | A       |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Right from Minor Street</td><td colspan="3">V9</td><td colspan="3">V12</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc9 =</td><td>427</td><td>Vc12 =</td><td colspan="3">736</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp9 =</td><td>655</td><td>cp12 =</td><td colspan="3">449</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm9 =</td><td>655</td><td>cm12 =</td><td colspan="3">449</td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,9 =</td><td>92%</td><td>Po,12 =</td><td colspan="3">92%</td> </tr> </table>   |              |                   |              |                   |            | Right from Minor Street   | V9       |           |            | V12            |                 |           | Conflicting Flows, Vc (vph) | Vc9 =   | 427       | Vc12 =     | 736        |           |         | Potential Capacity, cp (pcph) | cp9 =     | 655    | cp12 = | 449       |         |         | Movement Capacity, cm (pcph)          | cm9 =   | 655     | cm12 =    | 449     |         |           | Probability of Queue-free State:        | Po,9 =     | 92%       | Po,12 =  | 92%      |           |         | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Right from Minor Street  | V9           |                   |              | V12               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc9 =        | 427               | Vc12 =       | 736               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp9 =        | 655               | cp12 =       | 449               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm9 =        | 655               | cm12 =       | 449               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | Po,9 =       | 92%               | Po,12 =      | 92%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 10 - Sb left  | 5        | 6         | 166        | N/A            | 22.3            | N/A       | C                           | sec/veh |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 11 - Sb Thru  | 1        | 1         | 241        | 438            | 15.0            | 8.2       | B A                         | 10.6    |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 12 - Sb right   | 32       | 35        | 449        | 438            | 8.6             | 8.9       | A A                         | LOS B   |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Major Street</td><td colspan="3">V4</td><td colspan="3">V1</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc4 =</td><td>431</td><td>Vc1 =</td><td colspan="3">750</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp4 =</td><td>1,284</td><td>cp1 =</td><td colspan="3">1,069</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm4 =</td><td>1,284</td><td>cm1 =</td><td colspan="3">1,069</td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,4 =</td><td>99%</td><td>Po,1 =</td><td colspan="3">96%</td> </tr> </table>   |              |                   |              |                   |            | Left from Major Street  | V4       |           |            | V1             |                 |           | Conflicting Flows, Vc (vph) | Vc4 =   | 431       | Vc1 =      | 750        |           |         | Potential Capacity, cp (pcph) | cp4 =     | 1,284  | cp1 =  | 1,069     |         |         | Movement Capacity, cm (pcph)          | cm4 =   | 1,284   | cm1 =     | 1,069   |         |           | Probability of Queue-free State:        | Po,4 =     | 99%       | Po,1 =   | 96%      |           |         | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>      |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Left from Major Street   | V4           |                   |              | V1                |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc4 =        | 431               | Vc1 =        | 750               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp4 =        | 1,284             | cp1 =        | 1,069             |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm4 =        | 1,284             | cm1 =        | 1,069             |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | Po,4 =       | 99%               | Po,1 =       | 96%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 1 - Eb left   | 42       | 46        | 1,069      | 1,069          | 3.5             |           | A                           | 0.1     |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 4 - Wb left   | 16       | 18        | 1,284      | 1,284          | 2.8             |           | A                           | 0.0     |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | sec/veh   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Thru from Minor Street</td><td colspan="3">V8</td><td colspan="3">V11</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc8 =</td><td>1,221</td><td>Vc11 =</td><td colspan="3">1,221</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp8 =</td><td>255</td><td>cp11 =</td><td colspan="3">255</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td><td>f8 =</td><td>94%</td><td>f11 =</td><td colspan="3">94%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm8 =</td><td>241</td><td>cm11 =</td><td colspan="3">241</td> </tr> <tr> <td>Probability of Queue-free State:</td><td>P0,8 =</td><td>98%</td><td>P0,11 =</td><td colspan="3">100%</td> </tr> </table>  |              |                   |              |                   |            | Thru from Minor Street  | V8       |           |            | V11            |                 |           | Conflicting Flows, Vc (vph) | Vc8 =   | 1,221     | Vc11 =     | 1,221      |           |         | Potential Capacity, cp (pcph) | cp8 =     | 255    | cp11 = | 255       |         |         | Cpcty Adj Factor for Impending Mvmnts | f8 =    | 94%     | f11 =     | 94%     |         |           | Movement Capacity, cm (pcph)            | cm8 =      | 241       | cm11 =   | 241      |           |         | Probability of Queue-free State:                     | P0,8 =  | 98% | P0,11 = | 100% |  |  | <b>Average Total Delay for the Intersection</b> |       |     |        |     |  |  |                          |  |  |  |  |  |
| Thru from Minor Street   | V8           |                   |              | V11               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc8 =        | 1,221             | Vc11 =       | 1,221             |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp8 =        | 255               | cp11 =       | 255               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts  | f8 =         | 94%               | f11 =        | 94%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm8 =        | 241               | cm11 =       | 241               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | P0,8 =       | 98%               | P0,11 =      | 100%              |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | <b>Di = 0.2 sec/veh</b>   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Minor Street</td><td colspan="3">V7</td><td colspan="3">V10</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc7 =</td><td>1,222</td><td>Vc10 =</td><td colspan="3">1,224</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp7 =</td><td>194</td><td>cp10 =</td><td colspan="3">193</td> </tr> <tr> <td>MjrLft, MinThr Impedence Factor, p"</td><td>p"7 =</td><td>94%</td><td>p"10 =</td><td colspan="3">92%</td> </tr> <tr> <td>MjrLft, MinThr Adj Impedence Factor, p'</td><td>p'7 =</td><td>95%</td><td>p'10 =</td><td colspan="3">94%</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f</td><td>f7 =</td><td>88%</td><td>f10 =</td><td colspan="3">86%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm7 =</td><td>171</td><td>cm10 =</td><td colspan="3">166</td> </tr> </table> |              |                   |              |                   |            | Left from Minor Street  | V7       |           |            | V10            |                 |           | Conflicting Flows, Vc (vph) | Vc7 =   | 1,222     | Vc10 =     | 1,224      |           |         | Potential Capacity, cp (pcph) | cp7 =     | 194    | cp10 = | 193       |         |         | MjrLft, MinThr Impedence Factor, p"   | p"7 =   | 94%     | p"10 =    | 92%     |         |           | MjrLft, MinThr Adj Impedence Factor, p' | p'7 =      | 95%       | p'10 =   | 94%      |           |         | Cpcty Adj Factor for Impending Mvmnt, f              | f7 =  | 88% | f10 =   | 86%  |  |  | Movement Capacity, cm (pcph)                    | cm7 = | 171 | cm10 = | 166 |  |  | <b>C O M M E N T S :</b> |  |  |  |  |  |
| Left from Minor Street   | V7           |                   |              | V10               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc7 =        | 1,222             | Vc10 =       | 1,224             |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp7 =        | 194               | cp10 =       | 193               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"  | p"7 =        | 94%               | p"10 =       | 92%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p'  | p'7 =        | 95%               | p'10 =       | 94%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f  | f7 =         | 88%               | f10 =        | 86%               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm7 =        | 171               | cm10 =       | 166               |            |   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | Major street left turn movements operate at level of service "A".   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | The side street left turning movements operate at LOS "C".  |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | Cumulatively, side street vehicles will experience an average delay of about 7.0 seconds and 10.6 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements. |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | The Intersection's Average Total Delay is 0.20 seconds per vehicle.   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | These are excellent levels of service.  |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | Name: Dr. Antonio S. Coco   |          |           |            |                |                 |           |                             |         |           |            |            |           |         |                               |           |        |        |           |         |         |                                       |         |         |           |         |         |           |   |            |           |          |          |           |         |  |   |     |         |      |  |  |   |       |     |        |     |  |  |                          |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Future (2017) Background Traffic Volumes  |              |                   |              |                   |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|---|--------------|-------------------|--------------|-------------------|------------|---|----------|-----------|------------|----------------|-----------------|-----------------------------|-------------|--------------|-----------|------------|------------|-------------------------------|-------------|-------------|-----------|--------|--------|--------------------------------------|-------------|-------------|-----------|---------|---------|---|------------|-------------|-----------|------------|------------|--|------------|--------------|-----------|---------|---------|---|-----------|------------|--|--|--|--------------------------|--|--|--|--|--|
| Date of Count: 07/21/2015    Time Period: 8:00 - 9:00 AM    PHF: 1  |              |                   |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6   |              |                   |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Mvmnt   | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement # | V (vph)   | v (pcph) | cm (pcph) | csh (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da**                        |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Nb Left :</td><td>1 (V7)</td><td>1 (v7)</td><td>Eb left :</td><td>43 (V1)</td><td>47 (v1)</td> </tr> <tr> <td>Nb Thru :</td><td>5 (V8)</td><td>6 (v8)</td><td>Eb Thru :</td><td>1,323 (V2)</td><td>1,323 (v2)</td> </tr> <tr> <td>Nb Right:</td><td>50 (V9)</td><td>55 (v9)</td><td>Eb right:</td><td>8 (V3)</td><td>8 (v3)</td> </tr> <tr> <td>Sb left :</td><td>5 (V10)</td><td>6 (v10)</td><td>Wb left :</td><td>16 (V4)</td><td>18 (v4)</td> </tr> <tr> <td>Sb Thru :</td><td>1 (V11)</td><td>1 (v11)</td><td>Wb Thru :</td><td>2,289 (V5)</td><td>2,289 (v5)</td> </tr> <tr> <td>Sb right:</td><td>33 (V12)</td><td>36 (v12)</td><td>Wb right:</td><td>28 (V6)</td><td>28 (v6)</td> </tr> </table>   |              |                   |              |                   |            | Nb Left :   | 1 (V7)   | 1 (v7)    | Eb left :  | 43 (V1)        | 47 (v1)         | Nb Thru :                   | 5 (V8)      | 6 (v8)       | Eb Thru : | 1,323 (V2) | 1,323 (v2) | Nb Right:                     | 50 (V9)     | 55 (v9)     | Eb right: | 8 (V3) | 8 (v3) | Sb left :                            | 5 (V10)     | 6 (v10)     | Wb left : | 16 (V4) | 18 (v4) | Sb Thru :                               | 1 (V11)    | 1 (v11)     | Wb Thru : | 2,289 (V5) | 2,289 (v5) | Sb right:  | 33 (V12)   | 36 (v12)     | Wb right: | 28 (V6) | 28 (v6) | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b> |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Left :   | 1 (V7)       | 1 (v7)            | Eb left :    | 43 (V1)           | 47 (v1)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Thru :   | 5 (V8)       | 6 (v8)            | Eb Thru :    | 1,323 (V2)        | 1,323 (v2) |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Right:   | 50 (V9)      | 55 (v9)           | Eb right:    | 8 (V3)            | 8 (v3)     |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb left :   | 5 (V10)      | 6 (v10)           | Wb left :    | 16 (V4)           | 18 (v4)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb Thru :   | 1 (V11)      | 1 (v11)           | Wb Thru :    | 2,289 (V5)        | 2,289 (v5) |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb right:   | 33 (V12)     | 36 (v12)          | Wb right:    | 28 (V6)           | 28 (v6)    |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            |   |          |           |            |                |                 | sec/veh                     |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 7 - Nb Left   | 1        | 1         | 161        | N/A            | 22.5    N/A     | C    N/A                    | 7.3         |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 8 - Nb Thru   | 5        | 6         | 231        | 548            | 15.9    6.6     | C    A                      | LOS         |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 9 - Nb Right  | 50       | 55        | 645        | 548            | 6.1    7.2      | A    A                      | A           |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Right from Minor Street</td><td colspan="2">V9</td><td colspan="2">V12</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc9 = 440</td><td>Vc12 = 758</td><td colspan="3"></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp9 = 645</td><td>cp12 = 437</td><td colspan="3"></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm9 = 645</td><td>cm12 = 437</td><td colspan="3"></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,9 = 91%</td><td>Po,12 = 92%</td><td colspan="3"></td> </tr> </table>   |              |                   |              |                   |            | Right from Minor Street   | V9       |           | V12        |                |                 | Conflicting Flows, Vc (vph) | Vc9 = 440   | Vc12 = 758   |           |            |            | Potential Capacity, cp (pcph) | cp9 = 645   | cp12 = 437  |           |        |        | Movement Capacity, cm (pcph)         | cm9 = 645   | cm12 = 437  |           |         |         | Probability of Queue-free State:        | Po,9 = 91% | Po,12 = 92% |           |            |            | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Right from Minor Street   | V9           |                   | V12          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc9 = 440    | Vc12 = 758        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp9 = 645    | cp12 = 437        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm9 = 645    | cm12 = 437        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,9 = 91%   | Po,12 = 92%       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 10 - Sb left  | 5        | 6         | 158        | N/A            | 23.6    N/A     | C                           | sec/veh     |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 11 - Sb Thru  | 1        | 1         | 231        | 427            | 15.7    8.5     | C    A                      | 11.0        |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 12 - Sb right   | 33       | 36        | 437        | 427            | 8.9    9.1      | A    A                      | LOS<br>B    |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Major Street</td><td colspan="2">V4</td><td colspan="2">V1</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc4 = 444</td><td>Vc1 = 772</td><td colspan="3"></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp4 = 1,275</td><td>cp1 = 1,056</td><td colspan="3"></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm4 = 1,275</td><td>cm1 = 1,056</td><td colspan="3"></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,4 = 99%</td><td>Po,1 = 96%</td><td colspan="3"></td> </tr> </table>   |              |                   |              |                   |            | Left from Major Street  | V4       |           | V1         |                |                 | Conflicting Flows, Vc (vph) | Vc4 = 444   | Vc1 = 772    |           |            |            | Potential Capacity, cp (pcph) | cp4 = 1,275 | cp1 = 1,056 |           |        |        | Movement Capacity, cm (pcph)         | cm4 = 1,275 | cm1 = 1,056 |           |         |         | Probability of Queue-free State:        | Po,4 = 99% | Po,1 = 96%  |           |            |            | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>      |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Left from Major Street  | V4           |                   | V1           |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc4 = 444    | Vc1 = 772         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp4 = 1,275  | cp1 = 1,056       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm4 = 1,275  | cm1 = 1,056       |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | Po,4 = 99%   | Po,1 = 96%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 1 - Eb left   | 43       | 47        | 1,056      | 1,056          | 3.6             | A                           | 0.1         |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | 4 - Wb left   | 16       | 18        | 1,275      | 1,275          | 2.9             | A                           | 0.0         |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            |   |          |           |            |                |                 | sec/veh                     |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Thru from Minor Street</td><td colspan="2">V8</td><td colspan="2">V11</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc8 = 1,257</td><td>Vc11 = 1,257</td><td colspan="3"></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp8 = 245</td><td>cp11 = 245</td><td colspan="3"></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmts</td><td>f8 = 94%</td><td>f11 = 94%</td><td colspan="3"></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm8 = 231</td><td>cm11 = 231</td><td colspan="3"></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>P0,8 = 97%</td><td>P0,11 = 100%</td><td colspan="3"></td> </tr> </table>  |              |                   |              |                   |            | Thru from Minor Street  | V8       |           | V11        |                |                 | Conflicting Flows, Vc (vph) | Vc8 = 1,257 | Vc11 = 1,257 |           |            |            | Potential Capacity, cp (pcph) | cp8 = 245   | cp11 = 245  |           |        |        | Cpcty Adj Factor for Impending Mvmts | f8 = 94%    | f11 = 94%   |           |         |         | Movement Capacity, cm (pcph)            | cm8 = 231  | cm11 = 231  |           |            |            | Probability of Queue-free State:                     | P0,8 = 97% | P0,11 = 100% |           |         |         | <b>Average Total Delay for the Intersection</b>   |           |            |  |  |  |                          |  |  |  |  |  |
| Thru from Minor Street  | V8           |                   | V11          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc8 = 1,257  | Vc11 = 1,257      |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp8 = 245    | cp11 = 245        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmts  | f8 = 94%     | f11 = 94%         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm8 = 231    | cm11 = 231        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:  | P0,8 = 97%   | P0,11 = 100%      |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | <b>Di = 0.2 sec/veh</b>   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Left from Minor Street</td><td colspan="2">V7</td><td colspan="2">V10</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc7 = 1,258</td><td>Vc10 = 1,260</td><td colspan="3"></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp7 = 184</td><td>cp10 = 184</td><td colspan="3"></td> </tr> <tr> <td>MjrLft, MinThr Impedence Factor, p"</td><td>p"7 = 94%</td><td>p"10 = 92%</td><td colspan="3"></td> </tr> <tr> <td>MjrLft, MinThr Adj Impedence Factor, p'</td><td>p'7 = 95%</td><td>p'10 = 94%</td><td colspan="3"></td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f</td><td>f7 = 87%</td><td>f10 = 86%</td><td colspan="3"></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm7 = 161</td><td>cm10 = 158</td><td colspan="3"></td> </tr> </table> |              |                   |              |                   |            | Left from Minor Street  | V7       |           | V10        |                |                 | Conflicting Flows, Vc (vph) | Vc7 = 1,258 | Vc10 = 1,260 |           |            |            | Potential Capacity, cp (pcph) | cp7 = 184   | cp10 = 184  |           |        |        | MjrLft, MinThr Impedence Factor, p"  | p"7 = 94%   | p"10 = 92%  |           |         |         | MjrLft, MinThr Adj Impedence Factor, p' | p'7 = 95%  | p'10 = 94%  |           |            |            | Cpcty Adj Factor for Impending Mvmnt, f              | f7 = 87%   | f10 = 86%    |           |         |         | Movement Capacity, cm (pcph)                      | cm7 = 161 | cm10 = 158 |  |  |  | <b>C O M M E N T S :</b> |  |  |  |  |  |
| Left from Minor Street  | V7           |                   | V10          |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc7 = 1,258  | Vc10 = 1,260      |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp7 = 184    | cp10 = 184        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"   | p"7 = 94%    | p"10 = 92%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p'   | p'7 = 95%    | p'10 = 94%        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f   | f7 = 87%     | f10 = 86%         |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm7 = 161    | cm10 = 158        |              |                   |            |   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | Major street left turn movements operate at level of service "A".<br>The side street left turning movements operate at LOS "C".<br>Cumulatively, side street vehicles will experience an average delay of about 7.3 seconds and 11.0 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements.<br>The Intersection's Average Total Delay is 0.20 seconds per vehicle.<br>These are excellent levels of service. |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|   |              |                   |              |                   |            | Name: Dr. Antonio S. Coco   |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |        |        |                                      |             |             |           |         |         |   |            |             |           |            |            |  |            |              |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/Related Projects' Traffic<br>Date of Count: 07/21/2015 Time Period: 8:00 - 9:00 AM PHF: 1<br>Type of Control: Side Street Stop Average Running Speed: 35 Lanes on Major: 6  |                 |                      |                 |                      | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |            |             |              |               |                   |                    |   |         |         |  |
|---|-----------------|----------------------|-----------------|----------------------|---|------------|-------------|--------------|---------------|-------------------|--------------------|---|---------|---------|--|
| Mvmnt   | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Movement #  | V<br>(vph) | v<br>(pcph) | cm<br>(pcph) | csh<br>(pcph) | atd*<br>(sec/veh) | LOS<br>(Excl/Shrd) |   | Da**    |         |  |
| Nb Left : 1 (V7) 1 (v7) Eb left : 43 (V1) 47 (v1)<br>Nb Thru : 5 (V8) 6 (v8) Eb Thru : 1,334 (V2) 1,334 (v2)<br>Nb Right: 50 (V9) 55 (v9) Eb right: 8 (V3) 8 (v3)   |                 |                      |                 |                      | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b>   |            |             |              |               |                   |                    |   |         |         |  |
| Sb left : 5 (V10) 6 (v10) Wb left : 16 (V4) 18 (v4)<br>Sb Thru : 1 (V11) 1 (v11) Wb Thru : 2,292 (V5) 2,292 (v5)<br>Sb right: 33 (V12) 36 (v12) Wb right: 28 (V6) 28 (v6)   |                 |                      |                 |                      | 7 - Nb Left   | 1          | 1           | 160          | N/A           | 22.7              | N/A                | C | N/A     | 7.3     |  |
|   |                 |                      |                 |                      | 8 - Nb Thru   | 5          | 6           | 230          | 546           | 16.0              | 6.7                | C | A       | LOS     |  |
|   |                 |                      |                 |                      | 9 - Nb Right  | 50         | 55          | 642          | 546           | 6.1               | 7.3                | A | A       | A       |  |
| Right from Minor Street V9 V12  |                 |                      |                 |                      | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b>  |            |             |              |               |                   |                    |   |         |         |  |
| Conflicting Flows, Vc (vph) Vc9 = 443 Vc12 = 759<br>Potential Capacity, cp (pcph) cp9 = 642 cp12 = 436<br>Movement Capacity, cm (pcph) cm9 = 642 cm12 = 436<br>Probabilty of Queue-free State: Po,9 = 91% Po,12 = 92%   |                 |                      |                 |                      | 10 - Sb left  | 5          | 6           | 156          | N/A           | 23.9              | N/A                | C |         | sec/veh |  |
|   |                 |                      |                 |                      | 11 - Sb Thru  | 1          | 1           | 230          | 426           | 15.7              | 8.5                | C | A       | 11.0    |  |
|   |                 |                      |                 |                      | 12 - Sb right   | 33         | 36          | 436          | 426           | 8.9               | 9.2                | A | A       | LOS     |  |
|   |                 |                      |                 |                      |   |            |             |              |               |                   |                    |   | B       |         |  |
| Left from Major Street V4 V1  |                 |                      |                 |                      | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>   |            |             |              |               |                   |                    |   |         |         |  |
| Conflicting Flows, Vc (vph) Vc4 = 447 Vc1 = 773<br>Potential Capacity, cp (pcph) cp4 = 1,273 cp1 = 1,055<br>Movement Capacity, cm (pcph) cm4 = 1,273 cm1 = 1,055<br>Probabilty of Queue-free State: Po,4 = 99% Po,1 = 96%   |                 |                      |                 |                      | 1 - Eb left   | 43         | 47          | 1,055        | 1,055         | 3.6               |                    | A |         | 0.1     |  |
|   |                 |                      |                 |                      | 4 - Wb left   | 16         | 18          | 1,273        | 1,273         | 2.9               |                    | A |         | 0.0     |  |
|   |                 |                      |                 |                      |   |            |             |              |               |                   |                    |   | sec/veh |         |  |
| Thru from Minor Street V8 V11   |                 |                      |                 |                      | <b>Average Total Delay for the Intersection</b>   |            |             |              |               |                   |                    |   |         |         |  |
| Conflicting Flows, Vc (vph) Vc8 = 1,261 Vc11 = 1,261<br>Potential Capacity, cp (pcph) cp8 = 244 cp11 = 244<br>Cpcy Adj Factor for Impending Mvmnts f8 = 94% f11 = 94%<br>Movement Capacity, cm (pcph) cm8 = 230 cm11 = 230<br>Probabilty of Queue-free State: P0,8 = 97% P0,11 = 100%   |                 |                      |                 |                      | <b>Di = 0.2 sec/veh</b>   |            |             |              |               |                   |                    |   |         |         |  |
| Left from Minor Street V7 V10   |                 |                      |                 |                      | <b>C O M M E N T S :</b>  |            |             |              |               |                   |                    |   |         |         |  |
| Conflicting Flows, Vc (vph) Vc7 = 1,262 Vc10 = 1,264<br>Potential Capacity, cp (pcph) cp7 = 183 cp10 = 182<br>MjrLft, MinThr Impedence Factor, p" p"7 = 94% p"10 = 92%<br>MjrLft, MinThr Adj Impedence Factor, p' p'7 = 95% p'10 = 94%<br>Cpcty Adj Factor for Impending Mvmnt, f f7 = 87% f10 = 86%<br>Movement Capacity, cm (pcph) cm7 = 160 cm10 = 156 |                 |                      |                 |                      | Major street left turn movements operate at level of service "A".<br>The side street left turning movements operate at LOS "C".<br>Cumulatively, side street vehicles will experience an average delay of about 7.3 seconds and 11.0 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements.<br>The Intersection's Average Total Delay is 0.20 seconds per vehicle.<br>These are excellent levels of service. |            |             |              |               |                   |                    |   |         |         |  |
|   |                 |                      |                 |                      | Name: Dr. Antonio S. Coco   |            |             |              |               |                   |                    |   |         |         |  |

\* Average Total Delay, sec/veh. \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

# INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/ Site Traffic<br>Date of Count: 07/21/2015    Time Period: 8:00 - 9:00 AM    PHF: 1<br>Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6   |                      |                      |                 |                      |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|--|----------------------|----------------------|-----------------|----------------------|------------|---|-------------------|-----------------------------|----------------------|-------------------------------|--------------------|---------------------------------------|-------------------|---|----------------------|---|-------------------|---|-----------|--|--|-----|------------|-------------|--------------|-------------|--------------|--|------------|---|------------|-----------|--|---------------------------|--|--|--|--|--|
| Mvmnt  | Veh/hr<br>(vph)      | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Movement # | V<br>(vph)  | v<br>(pcph)       | cm<br>(pcph)                | csH<br>(pcph)        | atd*<br>(sec/veh)             | LOS<br>(Excl/Shrd) | Da**                                  |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Nb Left : 1 (V7)</td> <td style="width: 50%;">Eb left : 43 (V1)</td> </tr> <tr> <td>Nb Thru : 5 (V8)</td> <td>Eb Thru : 1,334 (V2)</td> </tr> <tr> <td>Nb Right: 52 (V9)</td> <td>Eb right: 8 (V3)</td> </tr> <tr> <td>Sb left : 5 (V10)</td> <td>Wb left : 31 (V4)</td> </tr> <tr> <td>Sb Thru : 2 (V11)</td> <td>Wb Thru : 2,292 (V5)</td> </tr> <tr> <td>Sb right: 33 (V12)</td> <td>Wb right: 28 (V6)</td> </tr> </table>   |                      |                      |                 |                      |            | Nb Left : 1 (V7)  | Eb left : 43 (V1) | Nb Thru : 5 (V8)            | Eb Thru : 1,334 (V2) | Nb Right: 52 (V9)             | Eb right: 8 (V3)   | Sb left : 5 (V10)                     | Wb left : 31 (V4) | Sb Thru : 2 (V11)                                 | Wb Thru : 2,292 (V5) | Sb right: 33 (V12)  | Wb right: 28 (V6) | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b>   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Nb Left : 1 (V7)   | Eb left : 43 (V1)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Nb Thru : 5 (V8)   | Eb Thru : 1,334 (V2) |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Nb Right: 52 (V9)  | Eb right: 8 (V3)     |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Sb left : 5 (V10)  | Wb left : 31 (V4)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Sb Thru : 2 (V11)  | Wb Thru : 2,292 (V5) |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Sb right: 33 (V12)   | Wb right: 28 (V6)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 7 - Nb Left   | 1                 | 1                           | 154                  | N/A                           | 23.5               | N/A                                   | C N/A             | 7.3   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 8 - Nb Thru   | 5                 | 6                           | 223                  | 545                           | 16.5               | 6.7                                   | C A               | LOS   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 9 - Nb Right  | 52                | 57                          | 642                  | 545                           | 6.1                | 7.3                                   | A A               | A   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Right from Minor Street</td> <td style="width: 50%;">V9</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc9 = 443</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp9 = 642</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm9 = 642</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,9 = 91%</td> </tr> </table>  |                      |                      |                 |                      |            | Right from Minor Street   | V9                | Conflicting Flows, Vc (vph) | Vc9 = 443            | Potential Capacity, cp (pcph) | cp9 = 642          | Movement Capacity, cm (pcph)          | cm9 = 642         | Probability of Queue-free State:                  | Po,9 = 91%           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V12</td> <td style="width: 50%;">Vc12 = 759</td> </tr> <tr> <td>cp12 = 436</td> <td>cm12 = 436</td> </tr> <tr> <td>Po,12 = 92%</td> <td></td> </tr> </table> |                   |   |           |  |  | V12 | Vc12 = 759 | cp12 = 436  | cm12 = 436   | Po,12 = 92% |              | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |            |   |            |           |  |                           |  |  |  |  |  |
| Right from Minor Street  | V9                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc9 = 443            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp9 = 642            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm9 = 642            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Probability of Queue-free State:   | Po,9 = 91%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| V12  | Vc12 = 759           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| cp12 = 436   | cm12 = 436           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Po,12 = 92%  |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 10 - Sb left  | 5                 | 6                           | 151                  | N/A                           | 24.6               | N/A                                   | C                 | sec/veh   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 11 - Sb Thru  | 2                 | 2                           | 223                  | 415                           | 16.3               | 8.7                                   | C A               | 11.2  |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 12 - Sb right   | 33                | 36                          | 436                  | 415                           | 8.9                | 9.4                                   | A A               | LOS   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       | B                 |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Left from Major Street</td> <td style="width: 50%;">V4</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc4 = 447</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp4 = 1,273</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm4 = 1,273</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,4 = 97%</td> </tr> </table>   |                      |                      |                 |                      |            | Left from Major Street  | V4                | Conflicting Flows, Vc (vph) | Vc4 = 447            | Potential Capacity, cp (pcph) | cp4 = 1,273        | Movement Capacity, cm (pcph)          | cm4 = 1,273       | Probability of Queue-free State:                  | Po,4 = 97%           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V1</td> <td style="width: 50%;">Vc1 = 773</td> </tr> <tr> <td>cp1 = 1,055</td> <td>cm1 = 1,055</td> </tr> <tr> <td>Po,1 = 96%</td> <td></td> </tr> </table>  |                   |   |           |  |  | V1  | Vc1 = 773  | cp1 = 1,055 | cm1 = 1,055  | Po,1 = 96%  |              | <b>MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.</b>      |            |   |            |           |  |                           |  |  |  |  |  |
| Left from Major Street   | V4                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc4 = 447            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp4 = 1,273          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm4 = 1,273          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Probability of Queue-free State:   | Po,4 = 97%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| V1   | Vc1 = 773            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| cp1 = 1,055  | cm1 = 1,055          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Po,1 = 96%   |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 1 - Eb left   | 43                | 47                          | 1,055                | 1,055                         | 3.6                |                                       | A                 | 0.1   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | 4 - Wb left   | 31                | 34                          | 1,273                | 1,273                         | 2.9                |                                       | A                 | 0.0   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       | sec/veh           |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Thru from Minor Street</td> <td style="width: 50%;">V8</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc8 = 1,276</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp8 = 240</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td> <td>f8 = 93%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm8 = 223</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>P0,8 = 97%</td> </tr> </table>   |                      |                      |                 |                      |            | Thru from Minor Street  | V8                | Conflicting Flows, Vc (vph) | Vc8 = 1,276          | Potential Capacity, cp (pcph) | cp8 = 240          | Cpcty Adj Factor for Impending Mvmnts | f8 = 93%          | Movement Capacity, cm (pcph)                      | cm8 = 223            | Probability of Queue-free State:  | P0,8 = 97%        | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V11</td> <td style="width: 50%;">Vc11 = 1,276</td> </tr> <tr> <td>cp11 = 240</td> <td>cm11 = 223</td> </tr> <tr> <td>P0,11 = 99%</td> <td></td> </tr> </table> |           |  |  |     |            | V11         | Vc11 = 1,276 | cp11 = 240  | cm11 = 223   | P0,11 = 99%  |            | <b>Average Total Delay for the Intersection</b> |            |           |  |                           |  |  |  |  |  |
| Thru from Minor Street   | V8                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc8 = 1,276          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp8 = 240            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts  | f8 = 93%             |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm8 = 223            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Probability of Queue-free State:   | P0,8 = 97%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| V11  | Vc11 = 1,276         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| cp11 = 240   | cm11 = 223           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| P0,11 = 99%  |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | <b>Di = 0.2 sec/veh</b>   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | <b>C O M M E N T S :</b>  |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | Major street left turn movements operate at level of service "A".   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | The side street left turning movements operate at LOS "C".  |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | Cumulatively, side street vehicles will experience an average delay of about 7.3 seconds and 11.2 seconds per vehicle and LOS "A" and "B" respectively for northbound and southbound movements. |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | The Intersection's Average Total Delay is 0.20 seconds per vehicle.   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
|  |                      |                      |                 |                      |            | These are excellent levels of service.  |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Left from Minor Street</td> <td style="width: 50%;">V7</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc7 = 1,277</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp7 = 179</td> </tr> <tr> <td>MjrLft, MinThr Impedence Factor, p"</td> <td>p"7 = 92%</td> </tr> <tr> <td>MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94%</td> <td>p'7 = 94%</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f f7 = 86%</td> <td>f7 = 86%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm7 = 154</td> </tr> </table> |                      |                      |                 |                      |            | Left from Minor Street  | V7                | Conflicting Flows, Vc (vph) | Vc7 = 1,277          | Potential Capacity, cp (pcph) | cp7 = 179          | MjrLft, MinThr Impedence Factor, p"   | p"7 = 92%         | MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94% | p'7 = 94%            | Cpcty Adj Factor for Impending Mvmnt, f f7 = 86%  | f7 = 86%          | Movement Capacity, cm (pcph)  | cm7 = 154 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V10</td> <td style="width: 50%;">Vc10 = 1,279</td> </tr> <tr> <td>cp10 = 179</td> <td>cm10 = 151</td> </tr> <tr> <td>p"10 = 90%</td> <td>p'10 = 93%</td> </tr> <tr> <td>f10 = 84%</td> <td></td> </tr> </table> |  |     |            |             |              | V10         | Vc10 = 1,279 | cp10 = 179   | cm10 = 151 | p"10 = 90%                                      | p'10 = 93% | f10 = 84% |  | Name: Dr. Antonio S. Coco |  |  |  |  |  |
| Left from Minor Street   | V7                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc7 = 1,277          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp7 = 179            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"  | p"7 = 92%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94%  | p'7 = 94%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f f7 = 86%   | f7 = 86%             |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm7 = 154            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| V10  | Vc10 = 1,279         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| cp10 = 179   | cm10 = 151           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| p"10 = 90%   | p'10 = 93%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |
| f10 = 84%  |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |   |           |  |  |     |            |             |              |             |              |  |            |   |            |           |  |                           |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csH = capacity of shared lane.

**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Existing (2015) Traffic Volumes  |              |                   |              |                   |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|--|--------------|-------------------|--------------|-------------------|------------|--|----------|-----------|------------|----------------|-----------------|-----------------------------|-------------|--------------|-----------|------------|------------|-------------------------------|-------------|-------------|-----------|---------|---------|---------------------------------------|-------------|-------------|-----------|---------|---------|---|------------|-------------|-----------|------------|------------|--|------------|-------------|-----------|---------|---------|---|-----------|------------|--|--|--|--------------------------|--|--|--|--|--|
| Date of Count: 07/21/2015    Time Period: 5:00 - 6:00 PM    PHF: 1   |              |                   |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6  |              |                   |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Mvmnt  | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement # | V (vph)  | v (pcph) | cm (pcph) | csH (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da**                        |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Nb Left :</td><td>2 (V7)</td><td>2 (v7)</td><td>Eb left :</td><td>54 (V1)</td><td>59 (v1)</td> </tr> <tr> <td>Nb Thru :</td><td>2 (V8)</td><td>2 (v8)</td><td>Eb Thru :</td><td>2,006 (V2)</td><td>2,006 (v2)</td> </tr> <tr> <td>Nb Right:</td><td>21 (V9)</td><td>23 (v9)</td><td>Eb right:</td><td>28 (V3)</td><td>28 (v3)</td> </tr> <tr> <td>Sb left :</td><td>4 (V10)</td><td>4 (v10)</td><td>Wb left :</td><td>21 (V4)</td><td>23 (v4)</td> </tr> <tr> <td>Sb Thru :</td><td>3 (V11)</td><td>3 (v11)</td><td>Wb Thru :</td><td>1,609 (V5)</td><td>1,609 (v5)</td> </tr> <tr> <td>Sb right:</td><td>61 (V12)</td><td>67 (v12)</td><td>Wb right:</td><td>20 (V6)</td><td>20 (v6)</td> </tr> </table>  |              |                   |              |                   |            | Nb Left :  | 2 (V7)   | 2 (v7)    | Eb left :  | 54 (V1)        | 59 (v1)         | Nb Thru :                   | 2 (V8)      | 2 (v8)       | Eb Thru : | 2,006 (V2) | 2,006 (v2) | Nb Right:                     | 21 (V9)     | 23 (v9)     | Eb right: | 28 (V3) | 28 (v3) | Sb left :                             | 4 (V10)     | 4 (v10)     | Wb left : | 21 (V4) | 23 (v4) | Sb Thru :   | 3 (V11)    | 3 (v11)     | Wb Thru : | 1,609 (V5) | 1,609 (v5) | Sb right:  | 61 (V12)   | 67 (v12)    | Wb right: | 20 (V6) | 20 (v6) | <b>MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.</b> |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Left :  | 2 (V7)       | 2 (v7)            | Eb left :    | 54 (V1)           | 59 (v1)    |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Thru :  | 2 (V8)       | 2 (v8)            | Eb Thru :    | 2,006 (V2)        | 2,006 (v2) |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Nb Right:  | 21 (V9)      | 23 (v9)           | Eb right:    | 28 (V3)           | 28 (v3)    |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb left :  | 4 (V10)      | 4 (v10)           | Wb left :    | 21 (V4)           | 23 (v4)    |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb Thru :  | 3 (V11)      | 3 (v11)           | Wb Thru :    | 1,609 (V5)        | 1,609 (v5) |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Sb right:  | 61 (V12)     | 67 (v12)          | Wb right:    | 20 (V6)           | 20 (v6)    |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 7 - Nb Left  | 2        | 2         | 149        | N/A            | 24.5    N/A     | C    N/A                    | 9.7         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 8 - Nb Thru  | 2        | 2         | 224        | 448            | 16.2    8.1     | C    A                      | LOS         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 9 - Nb Right   | 21       | 23        | 491        | 448            | 7.7    8.4      | A    A                      | A           |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| <table border="0"> <tr> <td>Right from Minor Street</td><td colspan="2">V9</td><td colspan="2">V12</td><td></td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td><td>Vc9 = 664</td><td>Vc12 = 533</td><td colspan="3"></td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td><td>cp9 = 491</td><td>cp12 = 576</td><td colspan="3"></td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td><td>cm9 = 491</td><td>cm12 = 576</td><td colspan="3"></td> </tr> <tr> <td>Probability of Queue-free State:</td><td>Po,9 = 95%</td><td>Po,12 = 88%</td><td colspan="3"></td> </tr> </table>  |              |                   |              |                   |            | Right from Minor Street  | V9       |           | V12        |                |                 | Conflicting Flows, Vc (vph) | Vc9 = 664   | Vc12 = 533   |           |            |            | Potential Capacity, cp (pcph) | cp9 = 491   | cp12 = 576  |           |         |         | Movement Capacity, cm (pcph)          | cm9 = 491   | cm12 = 576  |           |         |         | Probability of Queue-free State:                  | Po,9 = 95% | Po,12 = 88% |           |            |            | <b>MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.</b> |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Right from Minor Street  | V9           |                   | V12          |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc9 = 664    | Vc12 = 533        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp9 = 491    | cp12 = 576        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm9 = 491    | cm12 = 576        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | Po,9 = 95%   | Po,12 = 88%       |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 10 - Sb left   | 4        | 4         | 161        | N/A            | 22.9    N/A     | C                           | sec/veh     |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 11 - Sb Thru   | 3        | 3         | 224        | 540            | 16.3    6.7     | C    A                      | 8.3         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 12 - Sb right  | 61       | 67        | 576        | 540            | 7.0    7.5      | A    A                      | LOS         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            |  |          |           |            |                |                 |                             | A           |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
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| Left from Major Street   | V4           |                   | V1           |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc4 = 678    | Vc1 = 543         |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp4 = 1,115  | cp1 = 1,205       |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm4 = 1,115  | cm1 = 1,205       |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | Po,4 = 98%   | Po,1 = 95%        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 1 - Eb left  | 54       | 59        | 1,205      | 1,205          | 3.1             | A                           | 0.1         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | 4 - Wb left  | 21       | 23        | 1,115      | 1,115          | 3.3             | A                           | 0.0         |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            |  |          |           |            |                |                 |                             | sec/veh     |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
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| Thru from Minor Street   | V8           |                   | V11          |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc8 = 1,272  | Vc11 = 1,272      |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp8 = 241    | cp11 = 241        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts  | f8 = 93%     | f11 = 93%         |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm8 = 224    | cm11 = 224        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Probability of Queue-free State:   | P0,8 = 99%   | P0,11 = 99%       |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | <b>Di = 0.2 sec/veh</b>  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
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| Left from Minor Street   | V7           |                   | V10          |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Conflicting Flows, Vc (vph)  | Vc7 = 1,274  | Vc10 = 1,273      |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Potential Capacity, cp (pcph)  | cp7 = 180    | cp10 = 180        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Impedence Factor, p"  | p"7 = 92%    | p"10 = 92%        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| MjrLft, MinThr Adj Impedence Factor, p' p'7 = 94%  | p'7 = 94%    | p'10 = 94%        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f f7 = 83%   | f7 = 83%     | f10 = 90%         |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
| Movement Capacity, cm (pcph)   | cm7 = 149    | cm10 = 161        |              |                   |            |  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | Major street left turn movements operate at level of service "A".<br>The side street left turning movements operate at LOS "C".<br>Cumulatively, side street vehicles will experience an average delay of about 9.7 seconds and 8.3 seconds per vehicle and LOS "A" respectively for northbound and southbound movements.<br>The Intersection's Average Total Delay is 0.20 seconds per vehicle.<br>These are excellent levels of service. |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |
|  |              |                   |              |                   |            | Name: Dr. Antonio S. Coco  |          |           |            |                |                 |                             |             |              |           |            |            |                               |             |             |           |         |         |                                       |             |             |           |         |         |   |            |             |           |            |            |  |            |             |           |         |         |   |           |            |  |  |  |                          |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.



**INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS**

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/Related Projects' Traffic<br>Date of Count: 07/21/2015 Time Period: 5:00 - 6:00 PM PHF: 1<br>Type of Control: Side Street Stop Average Running Speed: 35 Lanes on Major: 6 |              |                   |              |                   |              | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |          |           |            |                |                 |         |         |
|--|--------------|-------------------|--------------|-------------------|--------------|---|----------|-----------|------------|----------------|-----------------|---------|---------|
| Mvmnt  | Veh/hr (vph) | Adjstd Vol (pcph) | Veh/hr (vph) | Adjstd Vol (pcph) | Movement #   | V (vph)   | v (pcph) | cm (pcph) | csH (pcph) | atd* (sec/veh) | LOS (Excl/Shrd) | Da**    |         |
| Nb Left :  | 2 (V7)       | 2 (v7)            | Eb left :    | 56 (V1)           | 62 (v1)      | MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.  |          |           |            |                |                 |         |         |
| Nb Thru :  | 2 (V8)       | 2 (v8)            | Eb Thru :    | 2,072 (V2)        | 2,072 (v2)   |   |          |           |            |                |                 | sec/veh |         |
| Nb Right:  | 22 (V9)      | 24 (v9)           | Eb right:    | 29 (V3)           | 29 (v3)      | 7 - Nb Left   | 2        | 2         | 139        | N/A            | 26.4 N/A        | D N/A   | 10.0    |
| Sb left :  | 4 (V10)      | 4 (v10)           | Wb left :    | 22 (V4)           | 24 (v4)      | 8 - Nb Thru   | 2        | 2         | 212        | 435            | 17.1 8.3        | C A     | LOS     |
| Sb Thru :  | 3 (V11)      | 3 (v11)           | Wb Thru :    | 1,667 (V5)        | 1,667 (v5)   | 9 - Nb Right  | 22       | 24        | 477        | 435            | 7.9 8.7         | A A     | A       |
| Sb right:  | 63 (V12)     | 69 (v12)          | Wb right:    | 21 (V6)           | 21 (v6)      | MINOR STREET APPROACH - MOVEMENTS 10, 11, 12.   |          |           |            |                |                 |         |         |
| Right from Minor Street  |              |                   | V9           |                   | V12          | 10 - Sb left  | 4        | 4         | 150        | N/A            | 24.6 N/A        | C       | sec/veh |
| Conflicting Flows, Vc (vph)  |              |                   | Vc9 = 686    |                   | Vc12 = 552   | 11 - Sb Thru  | 3        | 3         | 212        | 527            | 17.2 6.9        | C A     | 8.6     |
| Potential Capacity, cp (pcph)  |              |                   | cp9 = 477    |                   | cp12 = 563   | 12 - Sb right   | 63       | 69        | 563        | 527            | 7.2 7.8         | A A     | LOS     |
| Movement Capacity, cm (pcph)   |              |                   | cm9 = 477    |                   | cm12 = 563   |   |          |           |            |                |                 |         | A       |
| Probability of Queue-free State:   |              |                   | Po,9 = 95%   |                   | Po,12 = 88%  | MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.  |          |           |            |                |                 |         |         |
| Left from Major Street   |              |                   | V4           |                   | V1           | 1 - Eb left   | 56       | 62        | 1,191      | 1,191          | 3.2             | A       | 0.1     |
| Conflicting Flows, Vc (vph)  |              |                   | Vc4 = 700    |                   | Vc1 = 563    | 4 - Wb left   | 22       | 24        | 1,101      | 1,101          | 3.3             | A       | 0.0     |
| Potential Capacity, cp (pcph)  |              |                   | cp4 = 1,101  |                   | cp1 = 1,191  |   |          |           |            |                |                 |         | sec/veh |
| Movement Capacity, cm (pcph)   |              |                   | cm4 = 1,101  |                   | cm1 = 1,191  | Average Total Delay for the Intersection  |          |           |            |                |                 |         |         |
| Probability of Queue-free State:   |              |                   | Po,4 = 98%   |                   | Po,1 = 95%   | Di = 0.2 sec/veh  |          |           |            |                |                 |         |         |
| Thru from Minor Street   |              |                   | V8           |                   | V11          | C O M M E N T S :   |          |           |            |                |                 |         |         |
| Conflicting Flows, Vc (vph)  |              |                   | Vc8 = 1,316  |                   | Vc11 = 1,316 | Major street left turn movements operate at level of service "A".<br>The side street left turning movements operate at LOS "D" and "C".<br>Cumulatively, side street vehicles will experience an average delay of about 10.0 seconds and 8.6 seconds per vehicle and LOS "A" respectively for northbound and southbound movements.<br>The Intersection's Average Total Delay is 0.20 seconds per vehicle.<br>These are excellent levels of service. |          |           |            |                |                 |         |         |
| Potential Capacity, cp (pcph)  |              |                   | cp8 = 229    |                   | cp11 = 229   |   |          |           |            |                |                 |         |         |
| Cpcty Adj Factor for Impending Mvmnts  |              |                   | f8 = 93%     |                   | f11 = 93%    |   |          |           |            |                |                 |         |         |
| Movement Capacity, cm (pcph)   |              |                   | cm8 = 212    |                   | cm11 = 212   |   |          |           |            |                |                 |         |         |
| Probability of Queue-free State:   |              |                   | P0,8 = 99%   |                   | P0,11 = 99%  |   |          |           |            |                |                 |         |         |
| Left from Minor Street   |              |                   | V7           |                   | V10          | Name: Dr. Antonio S. Coco   |          |           |            |                |                 |         |         |
| Conflicting Flows, Vc (vph)  |              |                   | Vc7 = 1,318  |                   | Vc10 = 1,317 |   |          |           |            |                |                 |         |         |
| Potential Capacity, cp (pcph)  |              |                   | cp7 = 169    |                   | cp10 = 169   |   |          |           |            |                |                 |         |         |
| Mjrlft, MinThr Impedence Factor, p"  |              |                   | p"7 = 91%    |                   | p"10 = 92%   |   |          |           |            |                |                 |         |         |
| Mjrlft, MinThr Adj Impedence Factor, p' p'7 = 93%  |              |                   | p'7 = 93%    |                   | p'10 = 94%   |   |          |           |            |                |                 |         |         |
| Cpcty Adj Factor for Impending Mvmnt, f f7 = 82%   |              |                   | f7 = 82%     |                   | f10 = 89%    |   |          |           |            |                |                 |         |         |
| Movement Capacity, cm (pcph)   |              |                   | cm7 = 139    |                   | cm10 = 150   |   |          |           |            |                |                 |         |         |

\* Average Total Delay, sec/veh. \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

## INTERSECTION CAPACITY ANALYSIS : WORKSHEET FOR 4-LEG & "T" TWSC INTERSECTIONS

Location: Palm Drive / Olympic Boulevard - Beverly Hills

| Background (2017) Traffic Volumes w/ Site Traffic<br>Date of Count: 07/21/2015    Time Period: 5:00 - 6:00 PM    PHF: 1<br>Type of Control: Side Street Stop    Average Running Speed: 35    Lanes on Major: 6  |                      |                      |                 |                      |            | MOVEMENTS DELAY AND LEVELS OF SERVICE CALCULATION   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|---|----------------------|----------------------|-----------------|----------------------|------------|---|-------------------|-----------------------------|----------------------|-------------------------------|--------------------|---------------------------------------|-------------------|---|----------------------|---|-------------------|--|-----------|--|--|-----|------------|-----------------------------|--------------|-------------------------------|--------------|-------------------------------|--------------|---------------------------------------|-------------|---|------------|---|-------------|---|-----------|------------------------------|------------|-------------------|--|--|--|--|--|
| Mvmnt   | Veh/hr<br>(vph)      | Adjstd Vol<br>(pcph) | Veh/hr<br>(vph) | Adjstd Vol<br>(pcph) | Movement # | V<br>(vph)  | v<br>(pcph)       | cm<br>(pcph)                | csH<br>(pcph)        | atd*<br>(sec/veh)             | LOS<br>(Excl/Shrd) | Da**                                  |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Nb Left : 2 (V7)</td> <td style="width: 50%;">Eb left : 56 (V1)</td> </tr> <tr> <td>Nb Thru : 6 (V8)</td> <td>Eb Thru : 2,072 (V2)</td> </tr> <tr> <td>Nb Right: 64 (V9)</td> <td>Eb right: 29 (V3)</td> </tr> <tr> <td>Sb left : 4 (V10)</td> <td>Wb left : 37 (V4)</td> </tr> <tr> <td>Sb Thru : 4 (V11)</td> <td>Wb Thru : 1,667 (V5)</td> </tr> <tr> <td>Sb right: 63 (V12)</td> <td>Wb right: 21 (V6)</td> </tr> </table>   |                      |                      |                 |                      |            | Nb Left : 2 (V7)  | Eb left : 56 (V1) | Nb Thru : 6 (V8)            | Eb Thru : 2,072 (V2) | Nb Right: 64 (V9)             | Eb right: 29 (V3)  | Sb left : 4 (V10)                     | Wb left : 37 (V4) | Sb Thru : 4 (V11)                       | Wb Thru : 1,667 (V5) | Sb right: 63 (V12)  | Wb right: 21 (V6) | MINOR STREET APPROACH - MOVEMENTS 7, 8, 9.   |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Nb Left : 2 (V7)  | Eb left : 56 (V1)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Nb Thru : 6 (V8)  | Eb Thru : 2,072 (V2) |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Nb Right: 64 (V9)   | Eb right: 29 (V3)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Sb left : 4 (V10)   | Wb left : 37 (V4)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Sb Thru : 4 (V11)   | Wb Thru : 1,667 (V5) |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Sb right: 63 (V12)  | Wb right: 21 (V6)    |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    | sec/veh                               |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 7 - Nb Left   | 2                 | 2                           | 133                  | N/A                           | 27.5               | N/A                                   | D    N/A          | 10.0                                    |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 8 - Nb Thru   | 6                 | 7                           | 206                  | 426                           | 18.0               | 8.6                                   | C    A            | LOS                                     |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 9 - Nb Right  | 64                | 70                          | 477                  | 426                           | 8.7                | 9.9                                   | A    A            | A                                       |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Right from Minor Street</td> <td style="width: 50%;">V9</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc9 = 686</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp9 = 477</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm9 = 477</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,9 = 85%</td> </tr> </table>   |                      |                      |                 |                      |            | Right from Minor Street   | V9                | Conflicting Flows, Vc (vph) | Vc9 = 686            | Potential Capacity, cp (pcph) | cp9 = 477          | Movement Capacity, cm (pcph)          | cm9 = 477         | Probability of Queue-free State:        | Po,9 = 85%           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V12</td> <td style="width: 50%;">Vc12 = 552</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc12 = 552</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp12 = 563</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm12 = 563</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,12 = 88%</td> </tr> </table> |                   |  |           |  |  | V12 | Vc12 = 552 | Conflicting Flows, Vc (vph) | Vc12 = 552   | Potential Capacity, cp (pcph) | cp12 = 563   | Movement Capacity, cm (pcph)  | cm12 = 563   | Probability of Queue-free State:      | Po,12 = 88% | MINOR STREET APPROACH - MOVEMENTS 10, 11, 12. |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Right from Minor Street   | V9                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc9 = 686            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp9 = 477            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm9 = 477            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | Po,9 = 85%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| V12   | Vc12 = 552           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc12 = 552           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp12 = 563           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm12 = 563           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | Po,12 = 88%          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 10 - Sb left  | 4                 | 4                           | 128                  | N/A                           | 29.0               | N/A                                   | D                 | sec/veh                                 |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 11 - Sb Thru  | 4                 | 4                           | 206                  | 514                           | 17.8               | 7.1                                   | C    A            | 9.0                                     |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 12 - Sb right   | 63                | 69                          | 563                  | 514                           | 7.2                | 8.0                                   | A    A            | LOS                                     |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       | A                 |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Left from Major Street</td> <td style="width: 50%;">V4</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc4 = 700</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp4 = 1,101</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm4 = 1,101</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,4 = 96%</td> </tr> </table>  |                      |                      |                 |                      |            | Left from Major Street  | V4                | Conflicting Flows, Vc (vph) | Vc4 = 700            | Potential Capacity, cp (pcph) | cp4 = 1,101        | Movement Capacity, cm (pcph)          | cm4 = 1,101       | Probability of Queue-free State:        | Po,4 = 96%           | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V1</td> <td style="width: 50%;">Vc1 = 563</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc1 = 563</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp1 = 1,191</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm1 = 1,191</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>Po,1 = 95%</td> </tr> </table>   |                   |  |           |  |  | V1  | Vc1 = 563  | Conflicting Flows, Vc (vph) | Vc1 = 563    | Potential Capacity, cp (pcph) | cp1 = 1,191  | Movement Capacity, cm (pcph)  | cm1 = 1,191  | Probability of Queue-free State:      | Po,1 = 95%  | MAJOR STREET LEFT TURN - MOVEMENTS 1, 4.      |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Left from Major Street  | V4                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc4 = 700            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp4 = 1,101          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm4 = 1,101          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | Po,4 = 96%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| V1  | Vc1 = 563            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc1 = 563            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp1 = 1,191          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm1 = 1,191          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | Po,1 = 95%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 1 - Eb left   | 56                | 62                          | 1,191                | 1,191                         | 3.2                |                                       | A                 | 0.1                                     |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | 4 - Wb left   | 37                | 41                          | 1,101                | 1,101                         | 3.4                |                                       | A                 | 0.1                                     |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       | sec/veh           |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Thru from Minor Street</td> <td style="width: 50%;">V8</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc8 = 1,331</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp8 = 226</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td> <td>f8 = 91%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm8 = 206</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>P0,8 = 97%</td> </tr> </table>  |                      |                      |                 |                      |            | Thru from Minor Street  | V8                | Conflicting Flows, Vc (vph) | Vc8 = 1,331          | Potential Capacity, cp (pcph) | cp8 = 226          | Cpcty Adj Factor for Impending Mvmnts | f8 = 91%          | Movement Capacity, cm (pcph)            | cm8 = 206            | Probability of Queue-free State:  | P0,8 = 97%        | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V11</td> <td style="width: 50%;">Vc11 = 1,331</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc11 = 1,331</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp11 = 226</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnts</td> <td>f11 = 91%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm11 = 206</td> </tr> <tr> <td>Probability of Queue-free State:</td> <td>P0,11 = 98%</td> </tr> </table> |           |  |  |     |            | V11                         | Vc11 = 1,331 | Conflicting Flows, Vc (vph)   | Vc11 = 1,331 | Potential Capacity, cp (pcph) | cp11 = 226   | Cpcty Adj Factor for Impending Mvmnts | f11 = 91%   | Movement Capacity, cm (pcph)                  | cm11 = 206 | Probability of Queue-free State:        | P0,11 = 98% | Average Total Delay for the Intersection<br><b>Di = 0.3 sec/veh</b> |           |                              |            |                   |  |  |  |  |  |
| Thru from Minor Street  | V8                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc8 = 1,331          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp8 = 226            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts   | f8 = 91%             |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm8 = 206            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | P0,8 = 97%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| V11   | Vc11 = 1,331         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc11 = 1,331         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp11 = 226           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnts   | f11 = 91%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm11 = 206           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Probability of Queue-free State:  | P0,11 = 98%          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Left from Minor Street</td> <td style="width: 50%;">V7</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc7 = 1,333</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp7 = 165</td> </tr> <tr> <td>Mjrlft, MinThr Impedence Factor, p"</td> <td>p"7 = 89%</td> </tr> <tr> <td>Mjrlft, MinThr Adj Impedence Factor, p'</td> <td>p'7 = 92%</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f</td> <td>f7 = 81%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm7 = 133</td> </tr> </table> |                      |                      |                 |                      |            | Left from Minor Street  | V7                | Conflicting Flows, Vc (vph) | Vc7 = 1,333          | Potential Capacity, cp (pcph) | cp7 = 165          | Mjrlft, MinThr Impedence Factor, p"   | p"7 = 89%         | Mjrlft, MinThr Adj Impedence Factor, p' | p'7 = 92%            | Cpcty Adj Factor for Impending Mvmnt, f   | f7 = 81%          | Movement Capacity, cm (pcph)   | cm7 = 133 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">V10</td> <td style="width: 50%;">Vc10 = 1,334</td> </tr> <tr> <td>Conflicting Flows, Vc (vph)</td> <td>Vc10 = 1,334</td> </tr> <tr> <td>Potential Capacity, cp (pcph)</td> <td>cp10 = 165</td> </tr> <tr> <td>Mjrlft, MinThr Impedence Factor, p"</td> <td>p"10 = 88%</td> </tr> <tr> <td>Mjrlft, MinThr Adj Impedence Factor, p'</td> <td>p'10 = 91%</td> </tr> <tr> <td>Cpcty Adj Factor for Impending Mvmnt, f</td> <td>f10 = 78%</td> </tr> <tr> <td>Movement Capacity, cm (pcph)</td> <td>cm10 = 128</td> </tr> </table> |  |     |            |                             |              | V10                           | Vc10 = 1,334 | Conflicting Flows, Vc (vph)   | Vc10 = 1,334 | Potential Capacity, cp (pcph)         | cp10 = 165  | Mjrlft, MinThr Impedence Factor, p"           | p"10 = 88% | Mjrlft, MinThr Adj Impedence Factor, p' | p'10 = 91%  | Cpcty Adj Factor for Impending Mvmnt, f                             | f10 = 78% | Movement Capacity, cm (pcph) | cm10 = 128 | C O M M E N T S : |  |  |  |  |  |
| Left from Minor Street  | V7                   |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc7 = 1,333          |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp7 = 165            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Mjrlft, MinThr Impedence Factor, p"   | p"7 = 89%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Mjrlft, MinThr Adj Impedence Factor, p'   | p'7 = 92%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f   | f7 = 81%             |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm7 = 133            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| V10   | Vc10 = 1,334         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Conflicting Flows, Vc (vph)   | Vc10 = 1,334         |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Potential Capacity, cp (pcph)   | cp10 = 165           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Mjrlft, MinThr Impedence Factor, p"   | p"10 = 88%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Mjrlft, MinThr Adj Impedence Factor, p'   | p'10 = 91%           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Cpcty Adj Factor for Impending Mvmnt, f   | f10 = 78%            |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
| Movement Capacity, cm (pcph)  | cm10 = 128           |                      |                 |                      |            |   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | Major street left turn movements operate at level of service "A".   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | The side street left turning movements operate at LOS "D".  |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | Cumulatively, side street vehicles will experience an average delay of about 10.0 seconds and 9.0 seconds per vehicle and LOS "A" respectively for northbound and southbound movements. |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | The Intersection's Average Total Delay is 0.30 seconds per vehicle.   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | These are excellent levels of service.  |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |
|   |                      |                      |                 |                      |            | Name: Dr. Antonio S. Coco   |                   |                             |                      |                               |                    |                                       |                   |   |                      |   |                   |  |           |  |  |     |            |                             |              |                               |              |                               |              |                                       |             |   |            |   |             |   |           |                              |            |                   |  |  |  |  |  |

\* Average Total Delay, sec/veh.    \*\* Approach Average Total Delay, sec/veh.

Note: PHF = Peak Hour Factor; vph = volume per hour; pcph = passenger car per hour; csh = capacity of shared lane.

