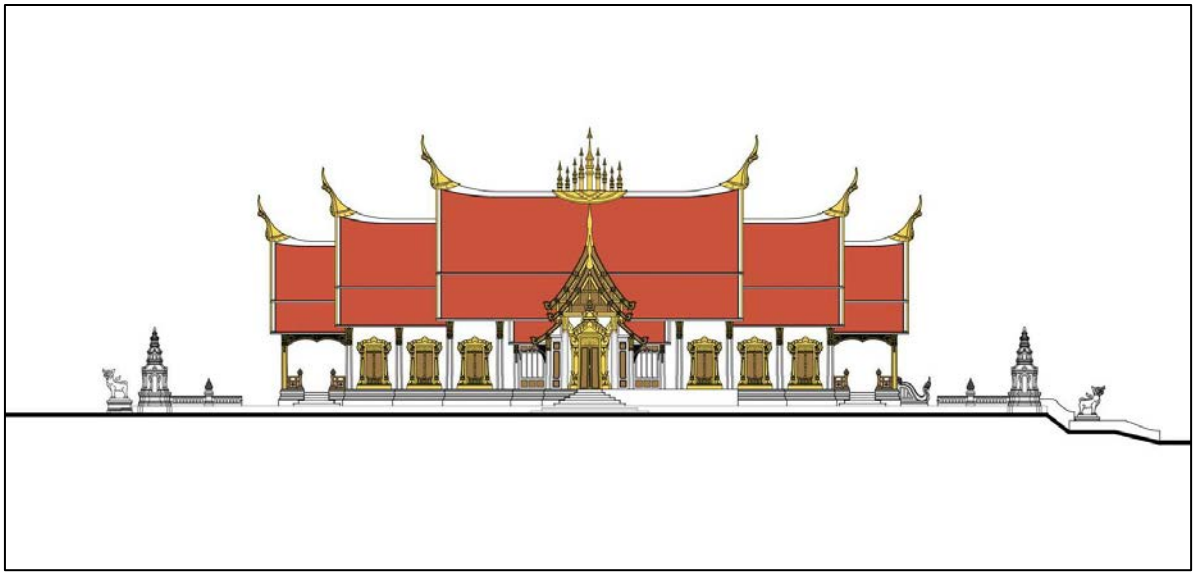

New Buddhist Temple in Chino Hills

Draft

Initial Study – Mitigated Negative Declaration

prepared by
City of Chino Hills
Community Development Department
14000 City Center Drive
Chino Hills, California 91709

prepared with the assistance of
Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

June 2017

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Environmental Scientists Planners Engineers
www.rinconconsultants.com

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Initial Study

1 Project Title

New Buddhist Temple in Chino Hills

2 Lead Agency Name and Address

City of Chino Hills
Community Development Department
14000 City Center Drive
Chino Hills, CA 91709

3 Contact Person and Phone Number

Aaron Lobliner, Contract Planner
(909) 364-2769

4 Project Location

The project site is located at 2948 Chino Hills Parkway at the Wat Phra That Doi Suthep USA temple in the City of Chino Hills (project site). The project site is bound by Chino Hills Parkway to the south, Rustic Drive to the west, a county-maintained municipal storm water channel to the north, and residences to the east. The project site is 7.3 acres and includes the following Assessor's Parcel Numbers (APNs): 1032-261-15, 1032-261-16, and 1032-261-17. Figure shows the project's regional location and Figure shows the project site and its local vicinity.

5 Project Sponsor's Name and Address

Buddhist Temple of Chino Hills
Representative: Lamthong Silpanone
2948 Chino Hills Parkway
Chino Hills, California 91709

6 Existing Setting

The project site is the site of an existing Buddhist Temple which is mostly developed with several existing buildings and structures associated with the current use. According to County records, the original building was built between 1946-1959, which has been remodeled and expanded to 3,520 square feet and is currently used as dorm space. The dorm is a one-story building with the capacity to house five monks. To the east of the dorm, a 5,470 square foot modular building was added to the site between 1980 and 1989 and is used as the meeting hall for the congregation. Both buildings are located in the center of the site and would be demolished during project construction. Typical activity at the project site involves 15 to 20 visitors per day Monday through Saturday and 60 to 80 people on Sunday. The Temple hosts special events ten times per year with 80 to 100 attendees, as

wells as two additional major events (Songkarn Festival and Kathina and Loy Kathong Day) per year with 150 to 200 attendees. These events take place both indoors and outdoors using amplifiers to project the events. The majority of the special events occur on Sunday; however the New Year Day celebration is on January 1st and may occur on a weekday depending on the year.

The grounds surrounding the existing buildings and structures consist of paved driveways and parking lots surrounded by landscaped lawns and gardens. The areas of the project site that are not dominated by development or ornamental landscaping consist of bare dirt with gravel and sparse vegetation. Based on aerial photographs the site has been developed and utilized as a Buddhist Temple since at least 2002. See Figures 3a and 3b for photos of the project site.

Farmers Market

The farmers market occurs at the project site every Sunday from 9:00 AM to 4:00 PM. Members of the Buddhist Temple organize the event and are the vendors. During the winter months, there are typically 3-4 vendors at the farmers market and 6-8 vendors during the summer months. Each vendor sets up temporary tables and chairs on the western portion of the project site to the south of the classroom/office building. The tables and chairs are removed from the site following the end of the farmer's market hours.

7 Existing General Plan Designation

Commercial (C)

8 Existing Zoning

Neighborhood Commercial (C-N)

9 Description of Project

The proposed project involves the development of new structures at the existing Buddhist Temple site to accommodate temple expansion. The project would combine three parcels into one for the proposed development, which would occur in three phases. The proposed site plans are shown in Figures 4a through 4d and the full set of architectural plans are provided in Appendix A. Table 1 shows existing and proposed facilities for the project.

Table 1 Existing and Proposed Facilities

Existing Facilities	Proposed Facilities
Dormitory	Buddhist Temple
Meeting Hall	Kitchen and Restrooms
	Dormitory
	Meditation Area
	Classroom/Office Building

During Phase I, the existing dormitory and meeting hall would remain while construction of the new Buddha Hall and kitchen and restrooms would begin. Phase II would involve construction of the new monk dormitory. Phase III would demolish the pre-existing dormitory and meeting hall. Phase III would involve construction of the classroom/office building and meditation area. Table 2 provides

the activities that currently occur on the project site and the anticipated growth in total number visitors after completion of each phase of the proposed project.

Table 2 Existing and Proposed Activity Use by Phase

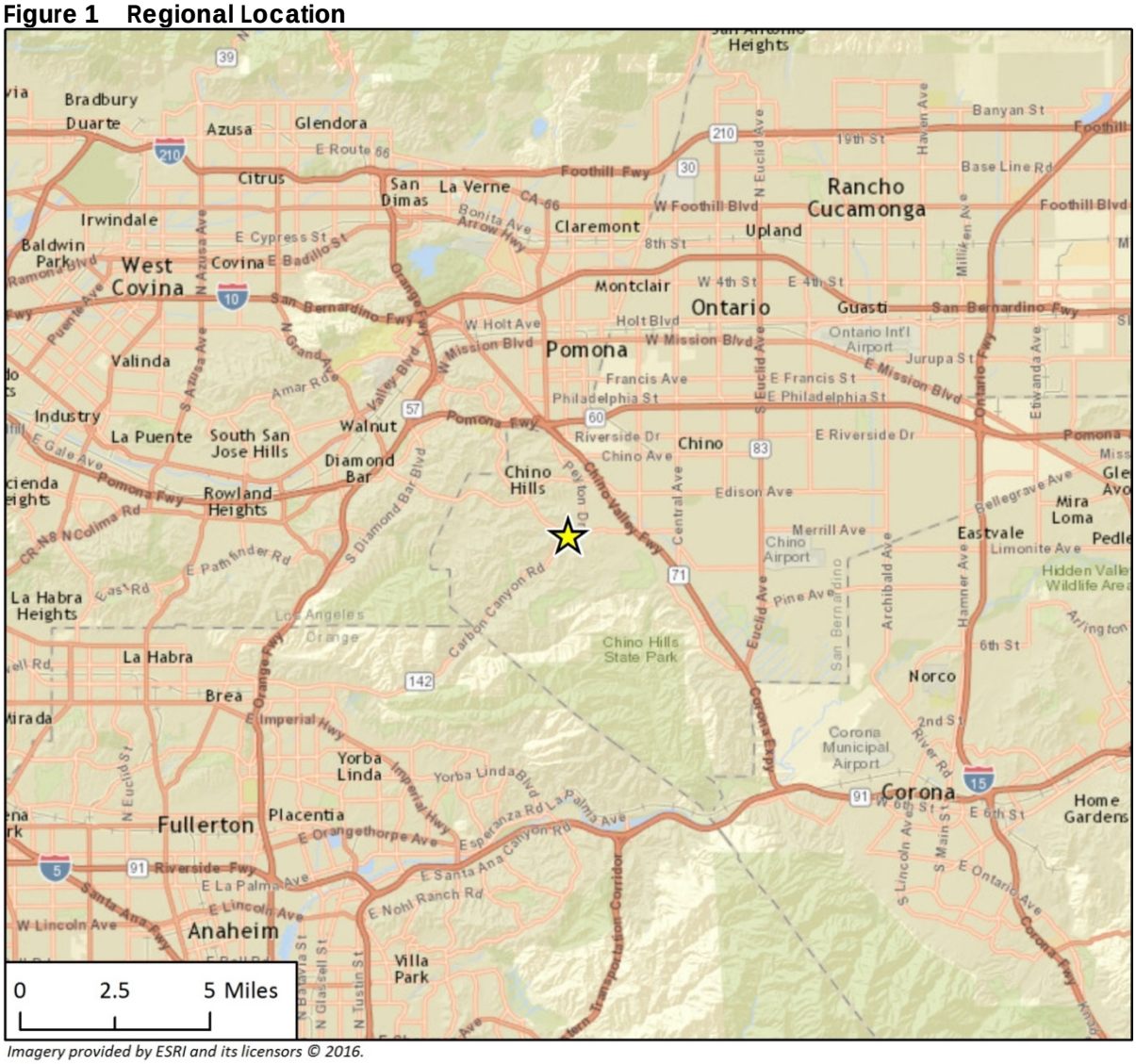
Activity	Existing Conditions (Dormitory, Meeting Hall)	Proposed Phase I[1] (Buddha Hall, Kitchen and Restrooms)	Proposed Phase II[1] (New Dormitory)	Proposed Phase III[2] (Classroom/Office, Meditation Area)
Typical Use	Monday-Saturday: 15 to 20 visitors Sunday: 60 to 80 visitors	Monday-Saturday: 30 to 50 visitors Sunday: 80 to 100 visitors	Monday-Saturday: 30 to 50 visitors Sunday: 80 to 100 visitors	Monday-Saturday: 50 to 60 visitors Sunday: 100 to 110 visitors
Special Events (10 per year)	80-100 attendees on special Sundays and January 1 from 11:00 AM to 3:00 PM	100-120 attendees on special Sundays and January 1 from 11:00 AM to 3:00 PM	100-120 attendees on special Sundays and January 1 from 11:00 AM to 3:00 PM	120-150 attendees on special Sundays and January 1 from 11:00 AM to 3:00 PM
Songkarn Festival (yearly in April) Kathina & Loy Kathong Day (yearly in October/November)	150 to 200 attendees on festival Sundays from 11:00 AM to 5:00 PM	200-300 attendees on festival Sundays from 11:00 AM to 5:00 PM	200-300 attendees on festival Sundays from 11:00 AM to 5:00 PM	250-350 attendees on festival Sundays from 11:00 AM to 5:00 PM

[1] Existing dormitory and meeting hall to remain during construction of Phase I and Phase II.

[2] Existing dormitory and meeting hall to be demolished during Phase III, therefore, full buildout of the proposed Buddhist Temple structures would occur at completion of Phase III.

The special events (including the Songkarn Festival and Kathina and Loy Kathong Day) are subject to the City of Chino Hills Special Events requirements pursuant to Chapter 12.36 of the Chino Hills Municipal Code (CHMC).

Figure 1 Regional Location



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Project Location

N

Fig 1 Regional Location

Figure 2 Project Site and Vicinity

Figure 3a Site Photos

Photo 1: View from center of site facing west, north of existing meeting hall (the truck in the background was temporarily parked onsite)

Photo 2: View from center of site facing west, south of existing dormitory

Figure 4b Site Photos

Photo 3: View from center of the site, facing south toward Chino Hills Parkway, the structure is a pagoda (an architectural feature in the Buddhist religion) with signage in the background

Photo 4: Facing south from northwest portion of site, view of the parking area and existing dormitory

The following is a description of the new facilities during each phase of construction. Construction of the proposed project would begin in 2018 and would last an estimated 5 years.

Phase I of Construction

Construction during Phase I, which would occur over three years, would include the one-story Buddha Hall that would be a 3,100-square foot structure. The new Buddha Hall would be located on the eastern portion of the project site surrounded by a plaza. The maximum occupancy of the Buddha Hall would be 80 persons with 60 visitors every Sunday and 20 monks in the hall daily. The building would range in height from 39 feet to approximately 50 feet at the highest point of the architectural spires. Site plans showing the proposed Buddha Hall are provided Figure 4b, the elevations of Buddha Hall are shown in Figures 5a and 5b, and the full architectural plans are provided in Appendix A.

The kitchen and restroom would be within a 1,900-square foot structure located between the northern portion of Buddha Hall and the proposed meditation area of the multipurpose building. Activities in the kitchen and restrooms would occur daily.

Phase II of Construction

Phase II of construction, which would occur over 18 months, would include a new dormitory that would be a 9,025 square foot, two-story building approximately 28 feet in height, located on the western portion of the center of the project site. The first and second floor would each include 12 rooms and two guest rooms for a total of 24 rooms and four guest rooms. The building would also contain a lobby area on each floor. Site plans showing the proposed dormitory are provided in Figure 4c, the elevations of the dormitory are shown in Figure 5c, and the full architectural plans are provided in Appendix A.

Phase III of Construction

The existing dormitory and meeting hall would be demolished during Phase III. Construction, which would occur over 15 months, would include the meditation area that would be a 3,600-square foot building located in the center of the site (between the dormitory and the building with the kitchen and bathrooms). The maximum occupancy of the meditation area would be 120 persons, with activity occurring only on Sundays.

The classroom/office building would consist of six dance classrooms (3,100 square feet) and one office room (1,180 square feet). The building would be located in the center of the site approximately 24 feet in height. The dance classrooms would have a max occupancy of 40 persons with activity occurring only on Sundays, while the offices would have a total max occupancy of four persons with activity occurring daily. The building would also contain men's and women's restrooms. The site plan showing the proposed construction under Phase III is provided in Figure 4d, the elevations of the multipurpose room shown in Figure 5d, and the full architectural plans are provided in Appendix A.

Parking

The project site would contain a total of 300 parking spaces, including seven handicapped-accessible spaces. All parking spaces would be located around the exterior of the site with a 15-foot parking setback. Racks for bicycle parking would be provided on-site. Table 3 shows required and proposed

parking for the project. The following is a breakdown of the new and existing parking stalls per phase of construction:

- Phase I – construction of 131 new parking stalls and use of 49 existing stalls
- Phase II – no parking area would be developed
- Phase III – demolition of the 49 existing stalls and construction of an additional 169 parking stalls for a total of 300 parking stalls

To determine the number of parking spaces required for the proposed project, the parking demand was calculated using the parking codes per CHMC 16.34.060. The CHMC specifies the parking requirements for multiple uses and the following park ratios were utilized for the proposed project:

- Fraternity/Sorority/Rooming House – 1 space per bed
  - Monks Dormitory – 28 spaces
- Church, chapel, religious facility, cemetery, mortuary (Buddha Hall) – 1 space per 3 fixed seats, or 1 space per 25 square feet of assembly area where there are no fixed seats
  - Buddha Hall – 124 spaces (calculated at 1 per 25 square feet)
- Private Elementary and Junior High Schools – 1.5 space per classroom plus 1 space per 5 fixed seats in auditorium, gymnasium or similar public assembly facility; or 1 space per 35 square feet of assembly area where there are no fixed seats
  - Multi-Purpose Building – 103 spaces (3,600 sq. ft. building; calculated at 1 per 35 sq. ft.)
- Business and Professional (except medical offices) up to 2,000 square feet – 1 space per 200 square feet
  - Offices – 6 spaces
- Dance Studio – 1 space per 100 square feet
  - Dance Classroom – 31 spaces

Per CHMC 16.34.060, the maximum required parking spaces from the proposed project is 292 spaces. With a proposed on-site parking supply of 300 spaces, the project satisfies the City's parking requirements with a surplus of eight spaces, as shown in Table 3.

Table 3 Required and Proposed Parking

Project Phase	Required Parking Stalls	Proposed Parking Stalls
Phase I	124	180
Phase II	152	180
Phase III	292	300

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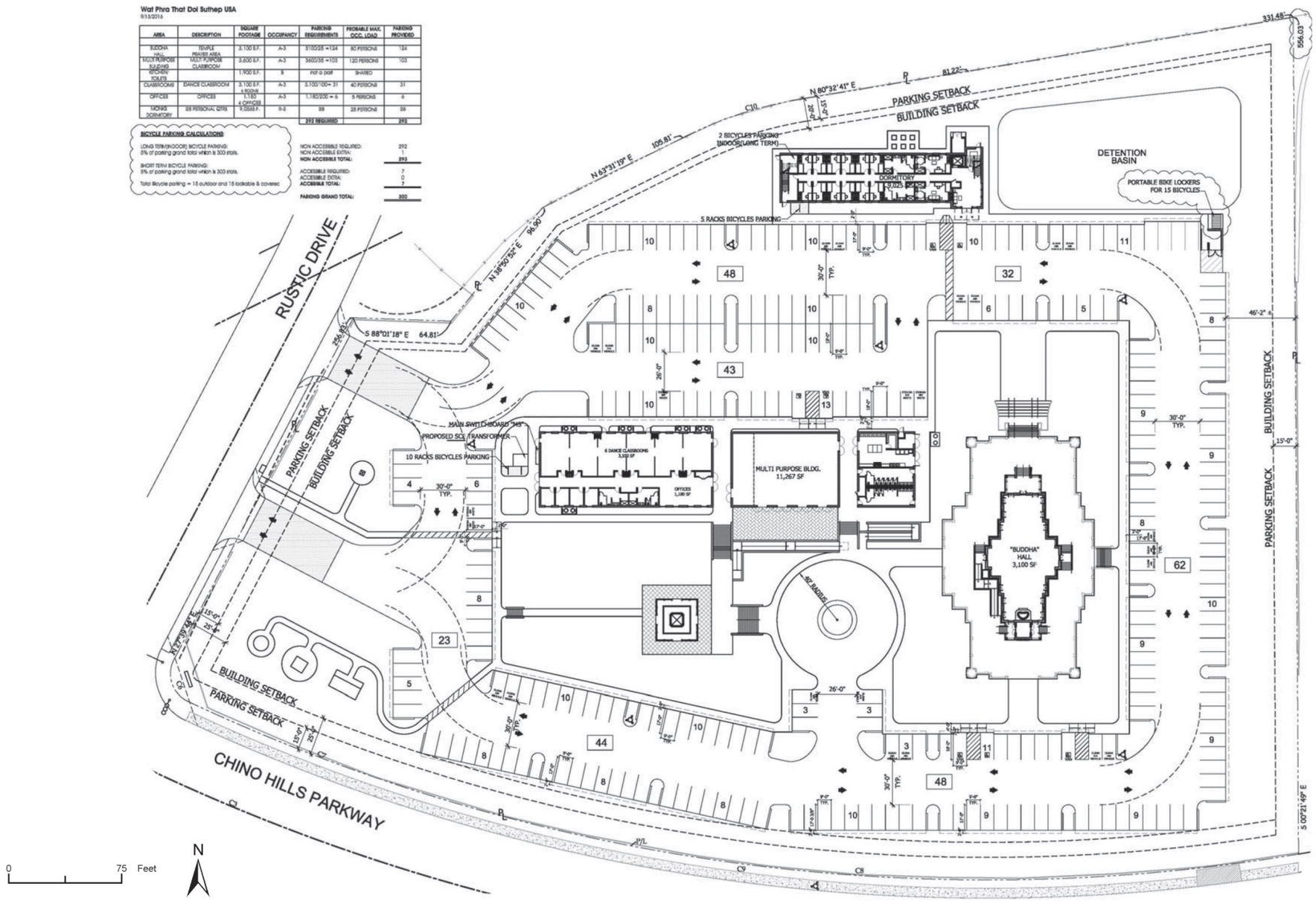
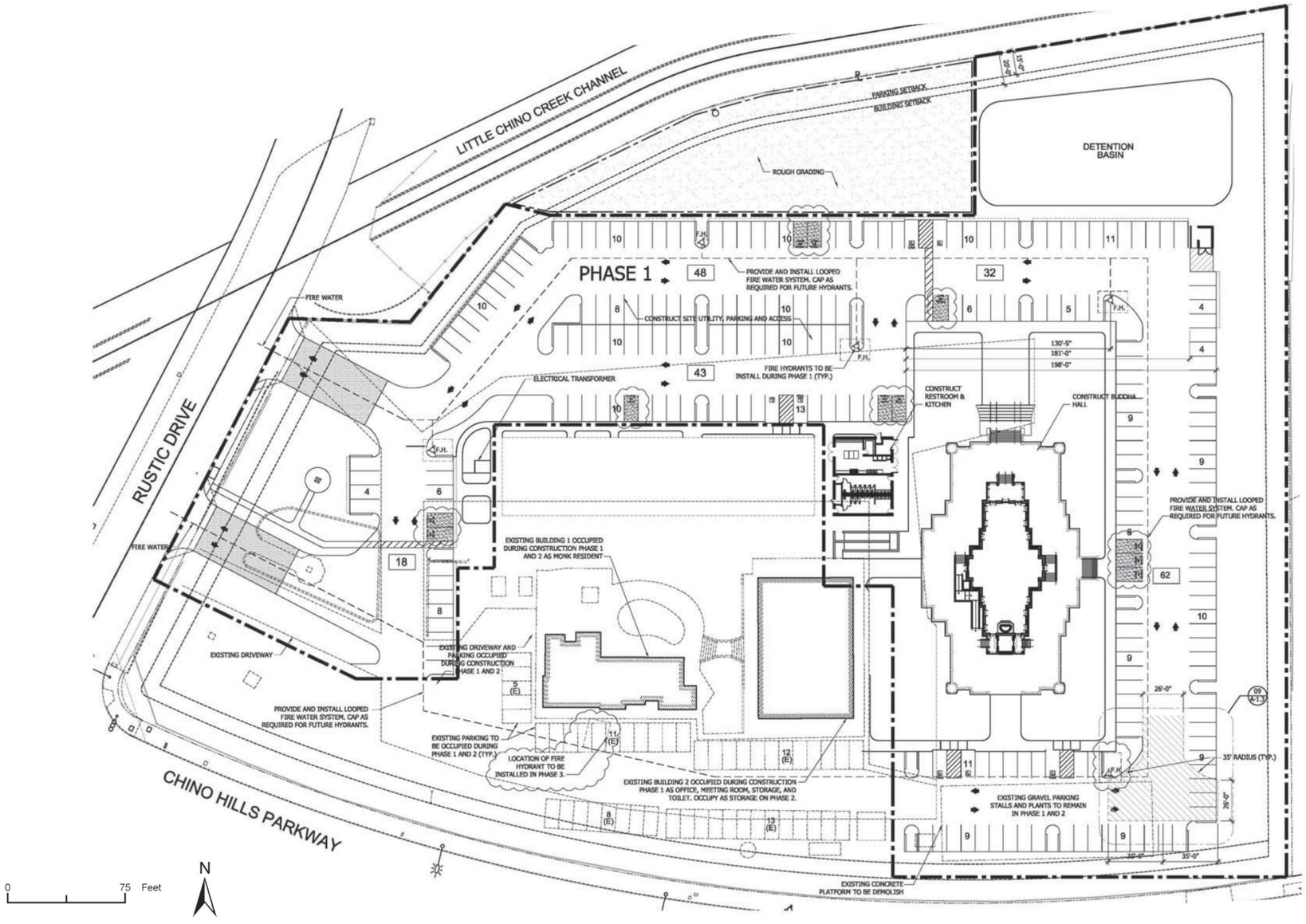
Figure 4a Site Plan



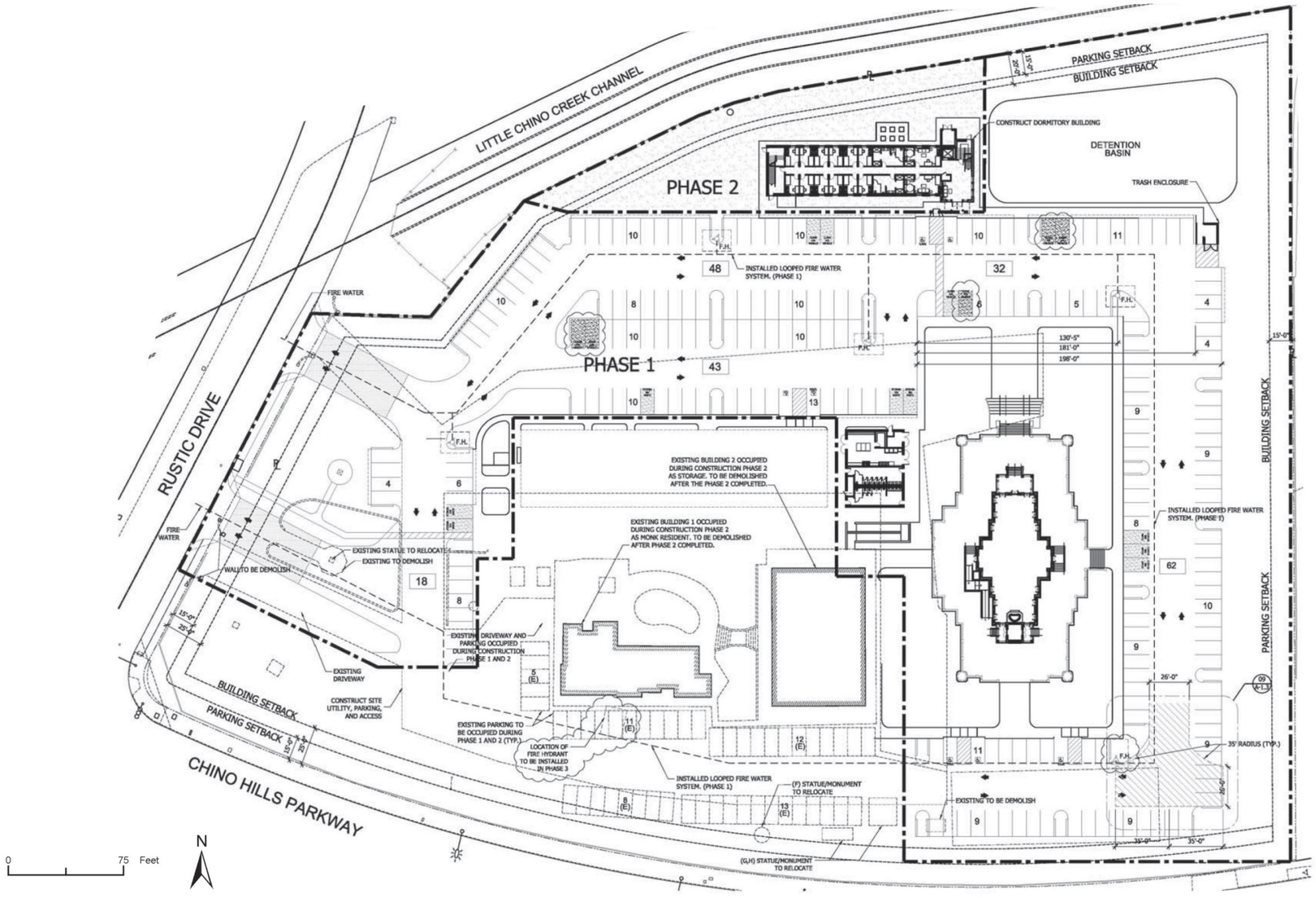
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 4b Phase I of Construction



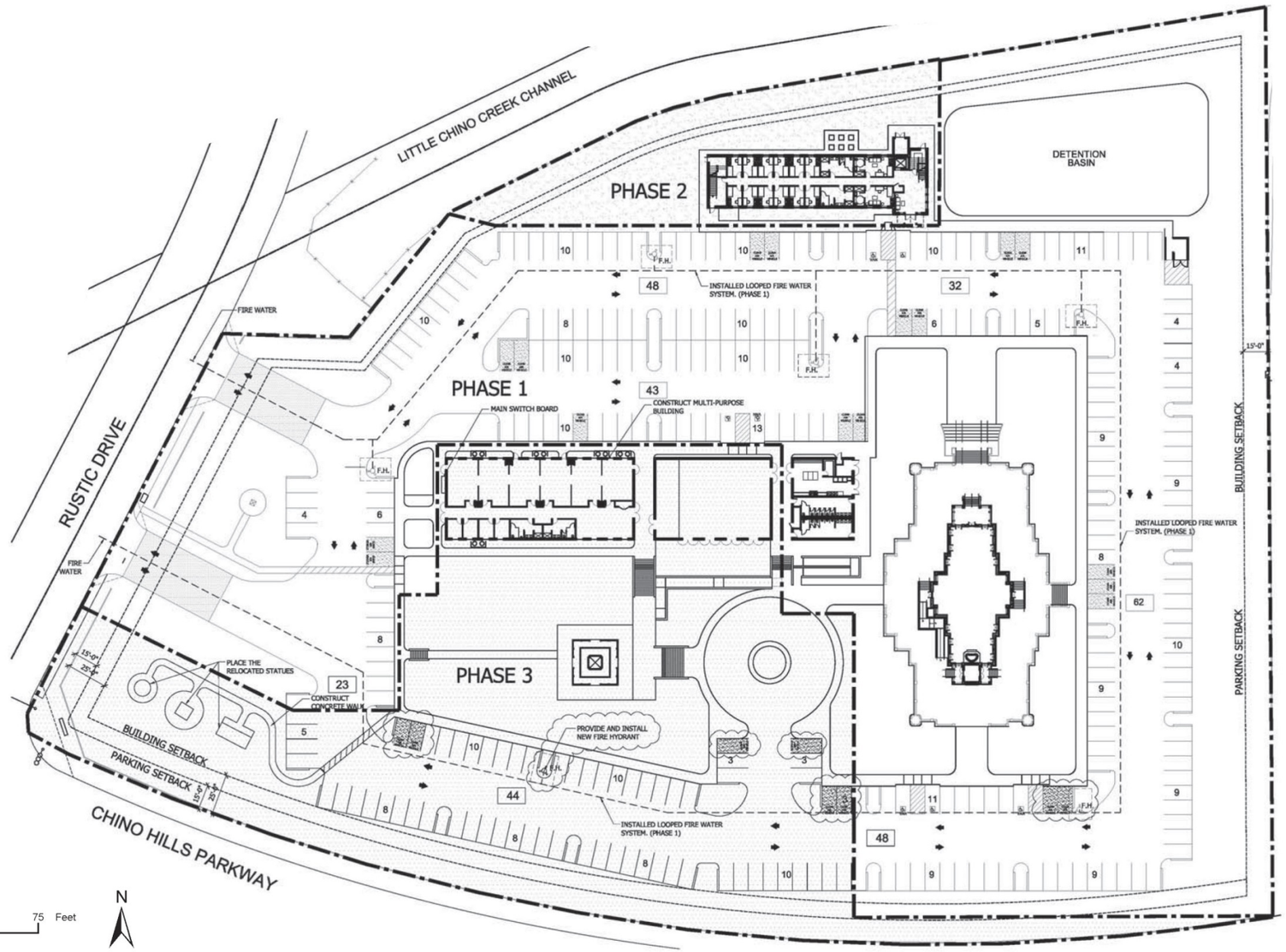
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 4c Phase II of Construction



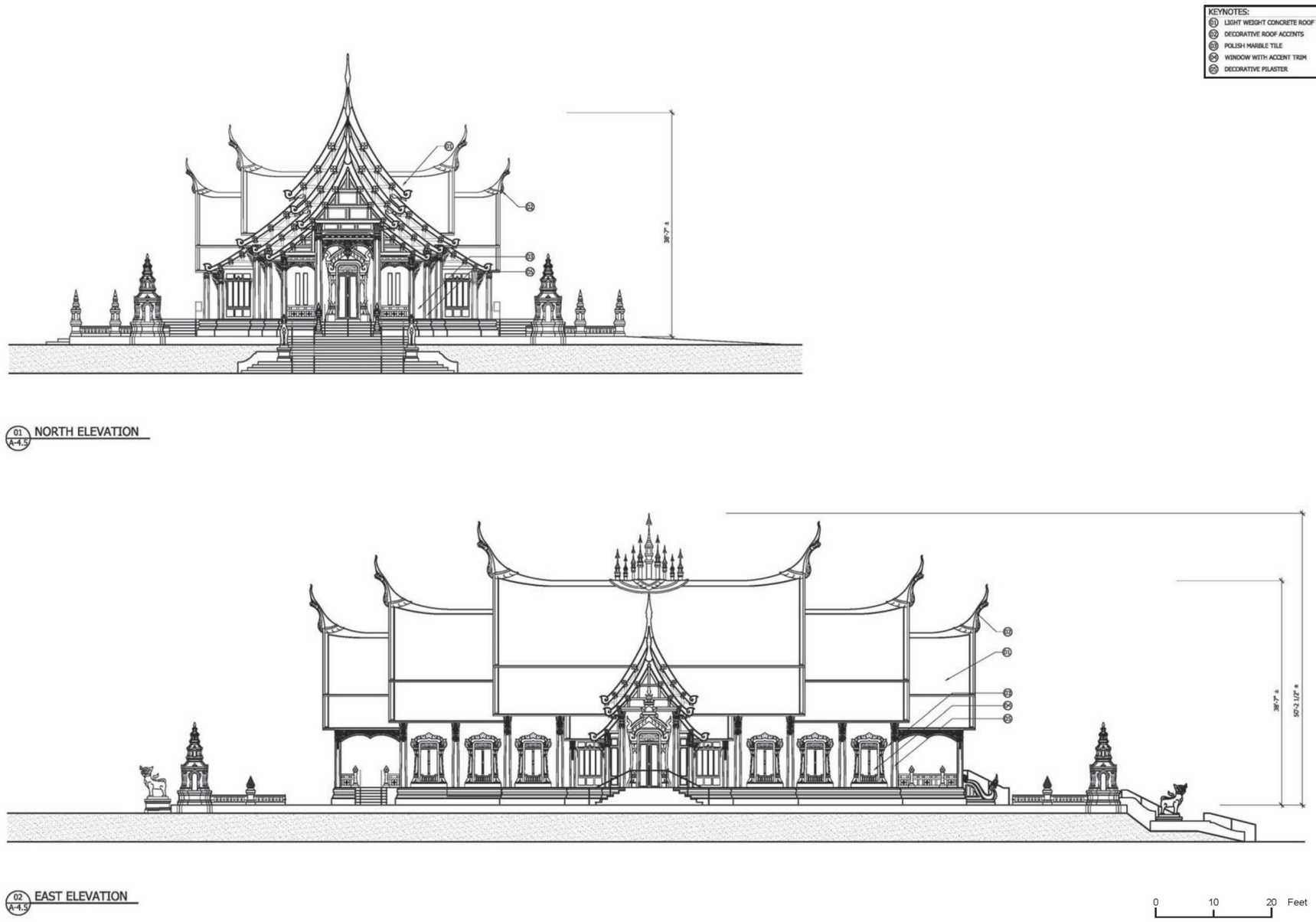
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 4d Phase III of Construction



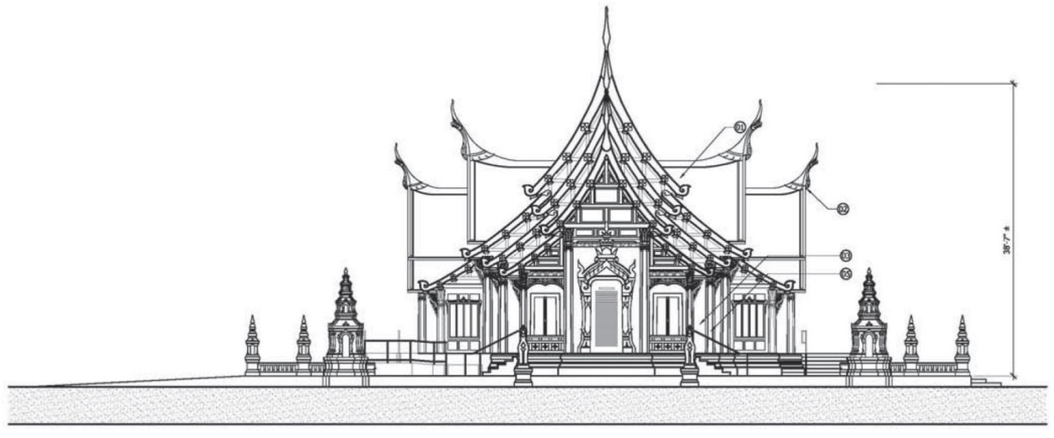
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 5a Buddha Hall East Elevations



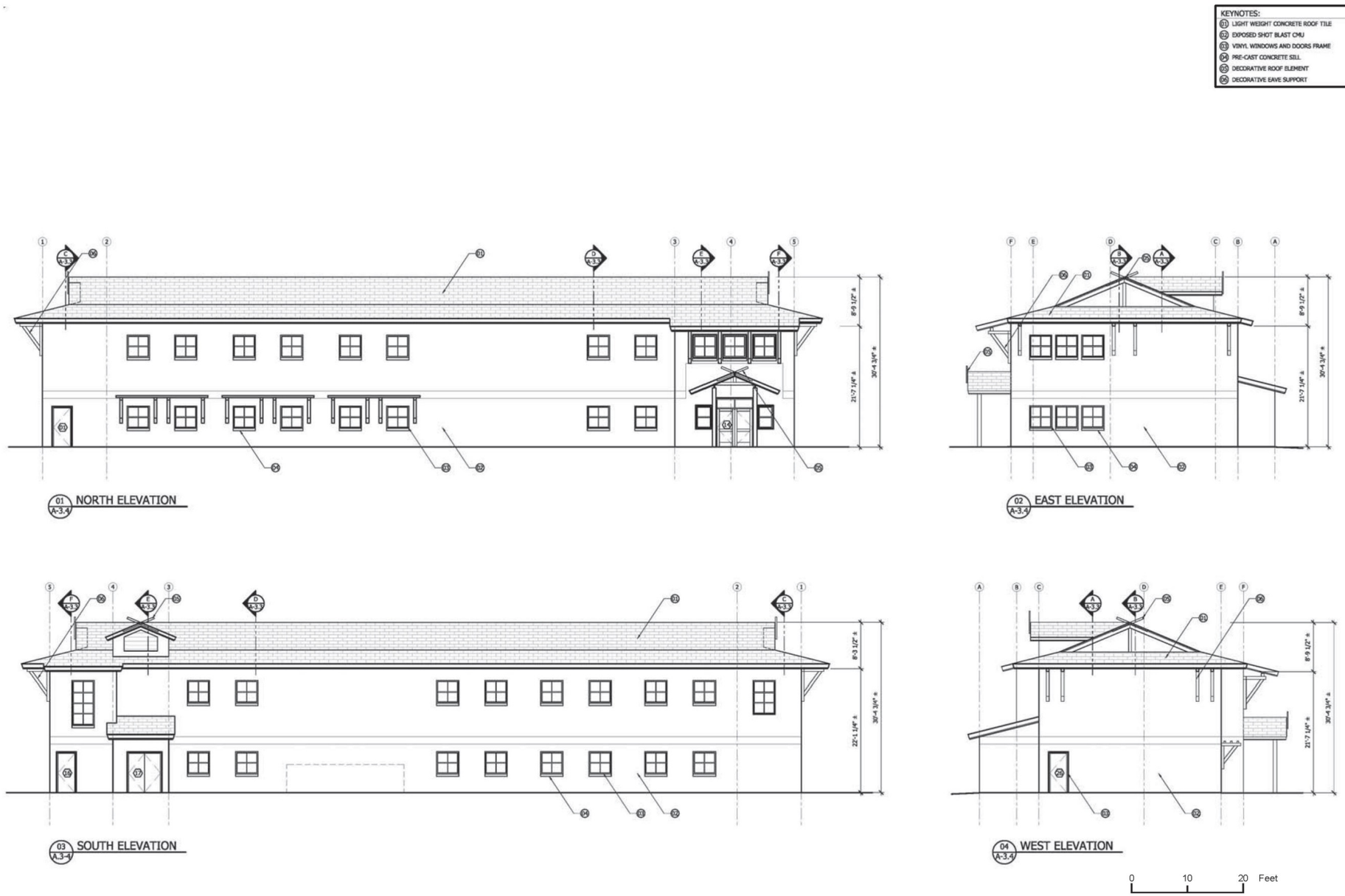
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 5b Buddha Hall West Elevations



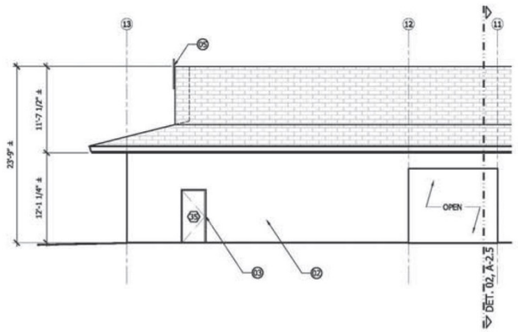
Source: Gillis + Panichapan Architects, Inc. 2015

Figure 5c Dormitory Elevations

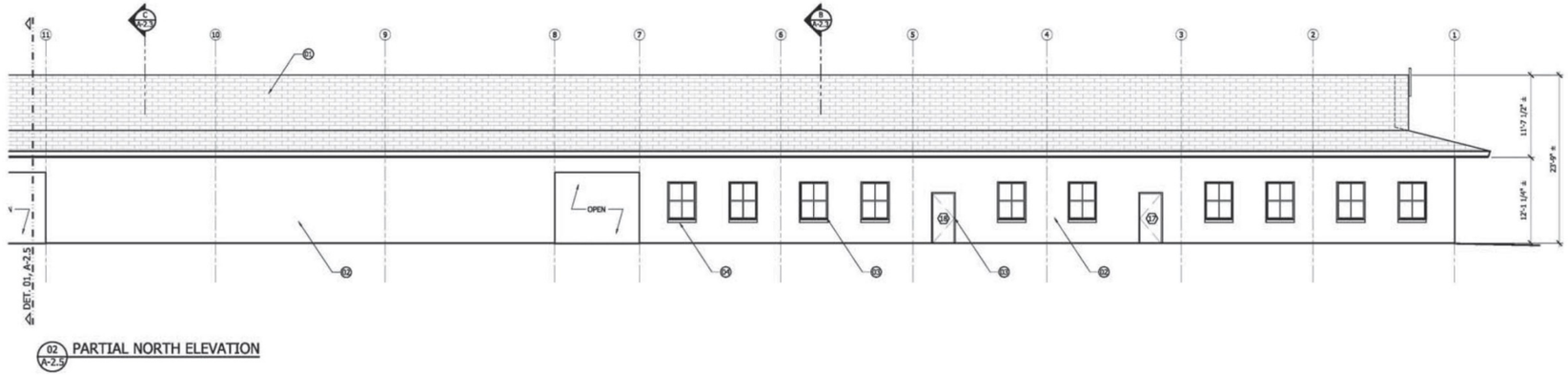


Source: Gillis + Panichapan Architects, Inc. 2015

Figure 5d Multi-Purpose Building Elevations



01 A-2.5 PARTIAL NORTH ELEVATION



02 A-2.5 PARTIAL NORTH ELEVATION

KEYNOTES:
01 LIGHT WEIGHT CONCRETE ROOF TILE
02 EXPOSED SHOT BLAST CMU
03 VINYL WINDOWS AND DOORS FRAME
04 PRE-CAST CONCRETE SILL
25 DECORATIVE ROOF ELEMENT

0 10 20 Feet

Source: Gillis + Panichapan Architects, Inc. 2015

Farmers Market

The farmers market would continue to occur at the project site every Sunday from 9:00 AM to 4:00 PM. The farmer's market would continue to be held on Sundays during construction and operation, since construction is not allowed to occur on Sundays per CHMC Section 8.08.020.

Landscaping

The project site would be landscaped around the exterior as well as throughout the site and would include ornamental tree species such as pink dawn chitalpa, Chinese flame tree, evergreen pear, and deodar cedar. Approximately 39% of the entire project site would be landscaped and an additional 7.5% of the parking area would be landscaped. The following is a breakdown of project landscaping per phase of construction:

- Phase I – 25,871 square feet of site and 4,655 square feet of parking area landscaping
- Phase II – 6,029 square feet of site, no parking landscaping would be included during this phase
- Phase III – 93,018 square feet of site and 4,343 square feet of parking area landscaping Detention Basin

In addition to the proposed pervious surfaces (i.e. project landscaping), the project would also include a detention basin located in the northeast portion of the site, adjacent to Little Chino Creek, which would further manage excess urban runoff and downstream erosion by storing water for a limited period of time. Detailed information is provided in Section 9, Hydrology and Water Quality.

10 Required Approvals

The following approvals are required for the proposed project:

- General Plan Amendment 13GPA01 to change the project site on the General Plan Land Use Map from Commercial (C) to Institutional (I)
- Zone Change 13ZC01 to change the zoning designation from Neighborhood Commercial (C-N) to Institutional-Private (I-1)
- Conditional Use Permit 13CUP08 to establish a religious institution
- Tentative Parcel Map 19377 to combine three existing parcels into one parcel
- Site plan review 13SPR01 for developing a new Buddhist Temple

11 Surrounding Land Uses and Setting

The project site encompasses the existing Buddhist Temple, located in northern Chino Hills in an urban setting. The project site is adjacent to residential uses to the east, zoned High Density Residential (RM-2). Residential uses to the north are zoned Low Density Residential (R-S). An existing county-maintained municipal storm water channel bordering the site to the north is zoned Institutional Public (I-2). The south of the project site, across Chino Hills Parkway, is a Planned Development (PD) zone and an existing park. Residential development is present east of the site in an area zoned PD as shown in Figure 6.

12 Other Public Agencies Whose Approval is Required

The City of Chino Hills is the lead agency with responsibility for approving the proposed project. In addition, approval from the San Bernardino Flood Control District is required to connect the detention basin to the flood channel.

Figure 6 Surrounding Land Uses

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages. However with the implementation of mitigation measures presented in this Initial Study, each of the potentially significant factors would be reduced to less than significant levels.

☐ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
■ Biological Resources	■ Cultural and Tribal Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
■ Transportation/Traffic	☐ Utilities/Service Systems	■ Mandatory Findings of Significance

Determination

Based on this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Joann Lombardo
Signature

6-28-17
Date

Joann Lombardo
Printed Name

Community Development Director
Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Substantial adverse effect on a scenic vista	☐	☐	☐	■
b. Substantial damage to scenic resources, including but not limited to trees, rock outcroppings, and historic buildings along a state scenic highway	☐	☐	☐	■
c. Substantially degrade the existing visual character or quality of the site and its surroundings	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

NO IMPACT

Important visual resources in Chino Hills are defined in Title 16, Chapter 8 of the Chino Hills Municipal Code (CHMC). In particular, CHMC 16.08 is designed to protect public views from designated transportation corridors of “exceptionally prominent ridgelines,” which “provide the City with its distinct image and serve as the City's most recognizable skyline backdrop” (Chino Hills, Municipal Code, 2015a). As described in CHMC 16.08.03A, Exceptionally Prominent Ridgelines, by virtue of their scale, mass, and visual presence form the limits of the most exceptional viewsheds of the City, and are typically four hundred (400) feet above their associated primary view point(s). Defined by CHMC 16.08.03D, an associated primary viewpoint is a specifically designated location from which a specific ridgeline may be viewed. Primary view points for any given ridgeline are selected as points from which large numbers of people are likely to be able to view the ridgeline, which commonly include designated transportation corridors. The designated transportation corridor identified in the CHMC 16.08 closest to the project site is State Route 71, which is located approximately 1.3 miles northwest of the project site. As shown in Figure 77, the closest exceptionally prominent ridge is at an elevation of approximately 1,176 feet and located approximately 1.2 miles south of the project site.

Views of Prominent Ridgelines are also protected. As described in CHMC 16.08.03B, Prominent Ridgelines form the limits of significant viewsheds and provide a natural backdrop when viewed from primary view point(s). Although they vary considerably in scale, width, scope, length, alignment, accessibility, and relationship to adjacent land uses, they are typically 200 feet above their associated primary view point(s). Also shown in Figure 77, the closest prominent ridge rises at an elevation of up to approximately 845 feet and located approximately 0.9 mile south of the project site. In addition, the ridgeline in the Chino Hills State Park closest to the project site is at an elevation of approximately 997 feet, and is located approximately 2.7 miles of the project site.

The elevation of the project site is approximately 735 feet. Due to its location, elevation, and maximum building height of 39 feet, the proposed project would not obstruct scenic views of exceptionally prominent ridgelines, prominent ridgelines, or the ridgelines and knolls of Chino Hills State Park. Therefore, the proposed project would have no impact on scenic vistas.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings in a state scenic highway?

NO IMPACT

The project site is not within view of a state scenic highway since there are no scenic highways in the City and State Route 71 is not listed as eligible for such a designation (California Department of Transportation [Caltrans], California Scenic Highway Mapping System, 2011). Further, the project site has already been developed with several buildings and structures (i.e., dormitory, gathering hall, paved driveways, and parking lots) associated with its current use as a Buddhist Temple. Figure 3a and 3b provide photos which show the existing site conditions. As described in Section 4, *Biological Resources*, the project site primarily consists of developed areas associated with the Buddhist Temple, landscaped ornamental vegetation, and recently disturbed bare ground. The site is relatively devoid of native vegetation, as it is dominated by landscaped lawns and gardens and sparse ruderal vegetation; therefore, there are no scenic biological resources on-site. In addition, according to Section 5, *Cultural Resources*, no historical resources are present on the project site. Therefore, the proposed project would have no impact on scenic resources or historic buildings along a state scenic highway.

c. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

LESS THAN SIGNIFICANT IMPACT

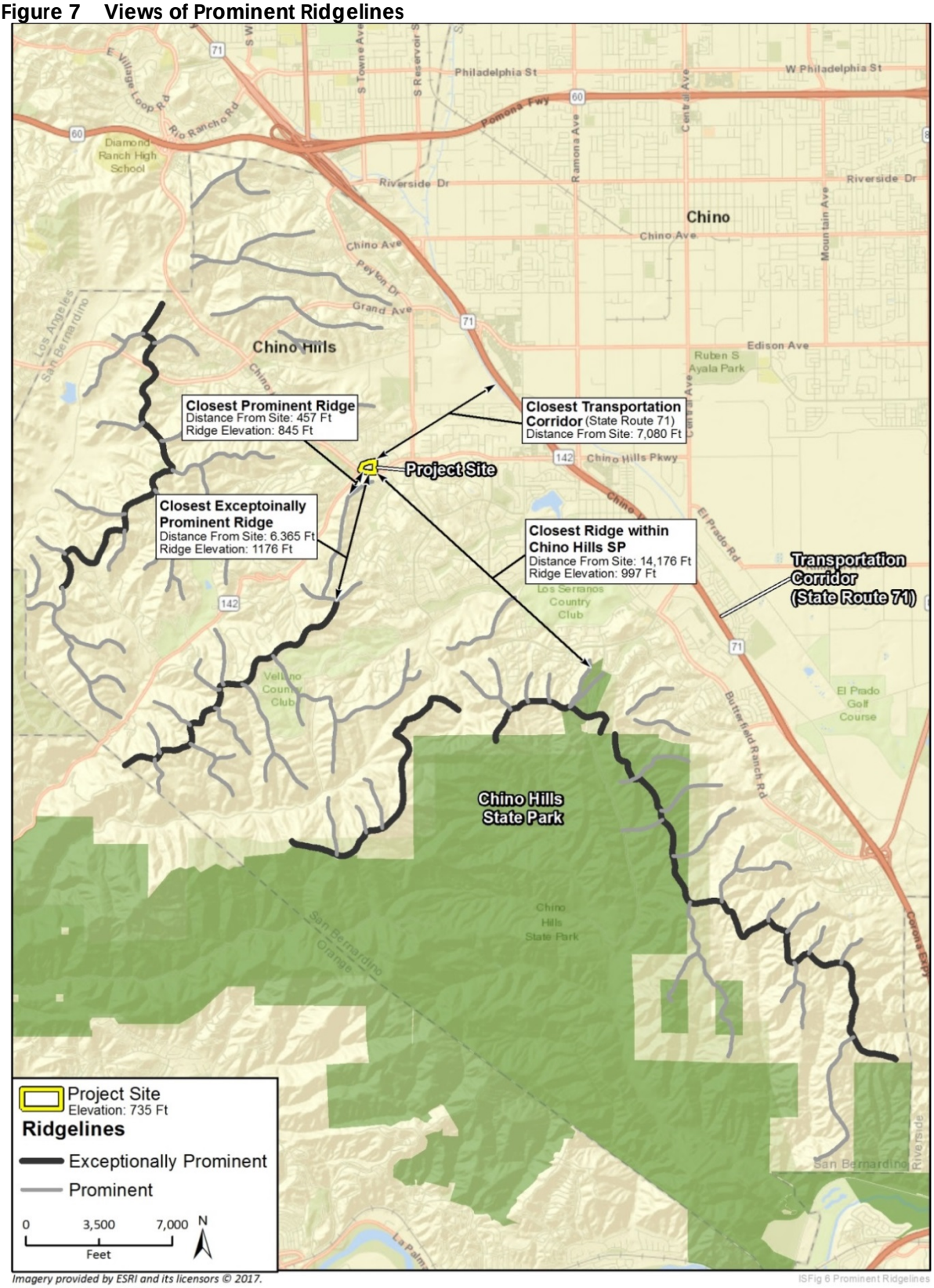
The proposed project would include construction of a Buddha Hall that would be 3,100 square feet and approximately 50 feet tall located in the eastern portion of the project site. The Buddha Hall would have spires with decorated elements of fiber glass cast with gold finishing. Although the Buddha Hall would reach 50 feet 2-inches in height, which is the height of the highest spire (see Figure 5b), the bulk of temple would be approximately 39 feet in height. The temple would have several ornamental features including a door fiberglass cast with gold leaf finishing, decorative arch, and decorative roof and window trims (Figures 5a and 5b show the elevations for the temple). As shown in Figures 3a and 3b, the current visual character of the project site consists of several buildings and features (i.e., dormitory, gathering hall, paved driveways, and parking lots) associated with its current use as a Buddhist Temple. The project includes demolition of existing structures for construction of a Buddha Hall, meditation area, classroom/office building, kitchen and restrooms, dormitory, and parking lots (Figures 5a through 5d show the elevations of the proposed buildings, and the full site plans are provided in Appendix A).

Although the proposed temple would look different than the existing buildings, the Buddhist Temple would be a visual improvement on the project site providing an attractive setting compared to the square concrete building that the temple would replace. When compared to existing conditions, the proposed facilities would utilize more of the vacant space on the site and provide a more cohesiveness site configuration. In addition, the proposed parking lot would replace the dirt areas that are currently used for parking. The project site would also be landscaped around the exterior as well as throughout the site to include ornamental trees, improving the on-site aesthetics.

The proposed classroom/office (multi-purpose) building, meditation area, and Buddha Hall would be located at the center of the project site, while the proposed dormitory would be located at the northern boundary of the site. The project site is located below the surrounding land uses that are at a higher elevation than the project site. As such, changes to the site would be visible, particularly the tall spire. However, the depressed elevation of the site would reduce the perceived maximum height of the project from the viewpoints of surrounding properties. However, the tall spire would not be a large obstruction that would degrade the existing visual character of the project site and surroundings. As discussed above the proposed project would create visual improvements on the site with a consistent visual theme.

Although the project would expand the existing development at the project site, it would not substantially degrade the site or its surroundings because it would maintain the existing use, and would replace dirt surfaces and temporary structures with landscape and architecturally designed new structures. As such, the proposed project would not expose the surrounding neighborhood to an incompatible use. Further, the project would add landscaping in the areas that would border the project site. Therefore, the impact to visual character would be less than significant.

Figure 7 Views of Prominent Ridgelines



d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

LESS THAN SIGNIFICANT IMPACT

The proposed project would increase light and glare on the project site due to an increase in on-site activity and visitation. Lighting for the proposed project would include parking lot lights that would be on a timer and would be used as needed on Sundays only, particularly during the winter months when the sun sets early. Outdoor lighting during nighttime hours would be included on the proposed buildings that would be used daily for safety purposes. Additional sources of light or glare would include headlights from cars entering and leaving the site at night due to added parking areas, as well as the presence of windows on cars and new buildings, which could reflect sunlight during certain times of the day. However, project lighting would not have a significant impact on the night sky because it would incrementally add to background light levels already present as a result of the existing Buddhist Temple buildings and surrounding residential development.

In addition, the nearest sensitive uses would not be directly adjacent to proposed buildings. Sensitive uses closest to the project site include single-family residences located 165 feet to the north across Little Chino Creek, additional single-family residences located 100 feet to the west across Rustic Drive, and an apartment complex adjacent to the project site located 50 feet to the east.

These sources of light and glare would potentially be experienced by motorists along Chino Hills Parkway. However, the proposed buildings would be setback from Chino Hills Parkway. The proposed setbacks, 46 feet on the eastern border, 20 feet on the northern border, and 25 feet on the southern and western borders, would minimize direct impacts associated with light and glare on Chino Hills Parkway and surrounding uses. In addition, the depressed topography of the site would also reduce the perceived light and glare coming from the proposed project. In addition, the proposed project would be of low intensity, slightly above the grade of adjacent streets, and with operational activities generally limited to daytime hours, which would minimize direct impacts associated with light and glare that would be experienced by adjacent residents during recognized hours of sleep. Furthermore, the majority of the surrounding residential development would be shielded from the project site by existing trees and retaining walls.

As required by performance standards in the City's Development Code, for new development project, "all lights and glare associated with operations and illuminated signs shall be shielded or directed so as to not illuminate adjacent properties or cause glare to motorist" (CHMC 16.08.040). Adherence to the CHMC requirements would reduce potential light and glare impacts to a less than significant level.

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract	☐	☐	☐	■
c. Conflict with existing zoning for or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

NO IMPACT

The California Department of Conservation (DOC) Important Farmland Finder identifies the project site as "Urban and Built-up Land" and surrounded primarily by additional "Urban and Built-up Land" with a small patch of "Prime Farmland" approximately 4,650 feet northeast of the site (California DOC, California Important Farmland Finder, 2014). The project site is designated "Commercial" by the Chino Hills 2015 General Plan and zoned (C-N) Neighborhood Commercial. There is no agricultural zoning or Williamson Act contract adjacent to the site (Chino Hills, General Plan, 2015b). Consequently, the proposed project would have no effect on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance nor would it conflict with existing zoning for agricultural use or a Williamson Act contract (California DOC, California Important Farmland Finder, 2014). Neither the project site nor surrounding areas contain any forest land or timberland nor are they zoned for forest land use; therefore, the project would not result in the rezoning, conversion, or loss of forest land. The proposed project would not involve changes in the existing environment that would result in the conversion of Farmland to non-agricultural use. As such, the proposed project would have no impact to agricultural or forest resources.

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Conflict with or obstruct implementation of the applicable air quality plan	☐	☐	■	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation	☐	☐	■	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)	☐	☐	■	☐
d. Expose sensitive receptors to substantial pollutant concentrations	☐	☐	■	☐
e. Create objectionable odors affecting a substantial number of people	☐	☐	☐	■

Rincon Consultants, Inc. prepared an Air Quality/Greenhouse Gas Emissions Study for the proposed project in February 2017. This report is included as Appendix B of this document.

The project site is within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, substantial vehicular traffic, and industry.

Air pollutant emissions within the SCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction

equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

The South Coast Air Quality Management District (SCAQMD) is the designated air quality control agency in the SCAB. Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in nonattainment. Every 3 years, the SCAQMD prepares a new Air Quality Management Plan (AQMP), which updates the previous plan and has a 20-year horizon. The SCAQMD adopted the Final 2012 AQMP on December 7, 2012 and forwarded it to the ARB for review in February 2013. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Currently, the SCAQMD has released a revised Draft 2016 AQMP, which is a comprehensive and integrated plan primarily focused on addressing the ozone standards. The draft plan is a regional and multi-agency effort (SCAQMD ARB, Southern California Association of Governments [SCAG], and U.S. EPA). State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The Draft 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and updated emission inventory methodologies for various source categories. The Draft 2016 AQMP is currently being considered for adoption, but has not been adopted by the SCAQMD Board at this time

The SCAQMD's *CEQA Air Quality Handbook* (1993) includes thresholds for emissions associated with both construction and operation of the project. The SCAQMD recommends the following quantitative regional significance thresholds for temporary construction activities and long-term project operation within the SCAB:

- 75 pounds per day of ROG
- 100 pounds per day of NO_X
- 550 pounds per day of CO
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$

The SCAQMD recommends the following quantitative regional significance thresholds for long-term project operation within the South Coast Air Basin:

- 55 pounds per day of ROG
- 55 pounds per day of NO_X
- 550 pounds per day of CO
- 150 pounds per day of SO_X
- 150 pounds per day of PM_{10}
- 55 pounds per day of $PM_{2.5}$

In addition to regional thresholds, the 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 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 consideration 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. LSTs have been developed for NOX, CO, PM10, and PM2.5. LSTs are not applicable to mobile sources such as cars on a roadway (SCAQMD, Final Localized Significance Threshold Methodology, 2003). As such, LSTs for operational emissions do not apply to on-site development, as the majority of emissions would be generated by cars on the roadways

LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site encompasses approximately 7.3 acres. It is unlikely that more than five acres would be under active construction at one time; therefore, this analysis utilizes the five-acre LSTs. The five-acre LSTs provide a more stringent threshold for construction emissions compared to the analysis of emissions over a larger area. According to the SCAQMD's publication, Final Localized Significant Thresholds Methodology, the use of LSTs is voluntary, to be implemented at the discretion of local agencies. Because the project site is located in SRA-33 (Southwest San Bernardino Valley), LSTs for construction in SRA-33 are shown in Table 4. LSTs are provided for receptors at a distance of 82 to 1,640 feet from the project site boundary. Construction activity would occur approximately 50 feet (15.2 meters) west from the closest sensitive receptor, which is a three-story apartment complex. According to the SCAQMD's publication Final Localized Significant (LST) Thresholds Methodology, projects with boundaries located closer than 82 feet to the nearest receptor should use the LSTs for receptors located at 82 feet.

Table 4 SCAQMD LSTs for Construction (SRA 33)

Pollutant	Allowable emissions (lbs/day) from a 5-are site in SRA-33 for a receptor 82 feet away
Gradual conversion of NO_X to NO_2	270
CO	2,193
PM_{10}	16
$PM_{2.5}$	9

Source: SCAQMD, Appendix C: Mass Rate Look-up Tables, 2009.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

LESS THAN SIGNIFICANT IMPACT

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding forecasts used in the development of the AQMP. The 2012 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates local city general plans and SCAG's 2012 RTP socioeconomic forecast projections of regional population, housing and employment growth.

As required by Mitigation Measure LU-1 of the Final Program Environmental Impact Report (FEIR) General Plan Update, certified in February 2015 (SCH# 2013051082), the City coordinated with the San Bernardino Association of Governments and SCAG to ensure that growth forecasts for the City, based on the 2015 General Plan Update, were properly incorporated into the regional planning programs (Chino Hills, FEIR General Plan Update, 2015c). Therefore, the local and regional forecasts are consistent. The updated growth forecasts in SCAG's 2016 RTP/SCS estimate that the Chino Hills population will be 89,000 in 2035 and 94,900 in 2040.

The proposed project would involve expansion of the temple and construction of a dormitory. The dormitory would be two stories in height and would include a total of 24 rooms and four guest rooms, providing accommodation for a total of 28 people. This increase in population would be within the SCAG's projected 2040 population for the City of 94,900. Therefore, the project would not conflict with the population forecasts contained in the 2012 AQMP and this impact would be less than significant.

b. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

LESS THAN SIGNIFICANT IMPACT

Project construction would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. It is assumed that all construction equipment used would be diesel-powered. The project's construction emissions were calculated using the California Emissions Estimator Model (CalEEMod) software version 2016.3.1 using model defaults for the types and number of pieces of equipment that would be used on-site during each of the construction phases. The construction schedule was based on project information, and the architectural coating phase was changed to overlap with building construction, representing more realistic construction practices. For the demolition phase, the square footage of demolition was based on the existing square footage of the buildings on the project site.

Construction of the project would involve demolition of existing buildings, site grading, excavation, construction, and other construction-related activities. The two buildings that would be demolished during project construction are currently in use; therefore, their operational emissions were also modeled and accounted for in the Air Quality/Greenhouse Gases Emissions Study (refer to Appendix B).

Operational emissions associated with the proposed project were also estimated using CalEEMod. Operational emissions include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of on-site development. Proposed project traffic generation rates from the Traffic Impact Analysis prepared by Linscott Law & Greenspan Engineers (LLG) were used for the traffic analysis in order to provide an estimate of the potential traffic generation emissions (this study is included as Appendix E). Emissions attributed to energy use include natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coating.

The project would comply with all applicable regulatory standards. In particular, the project would comply with 2013 CALGreen Code, in addition to SCAQMD Rules 403 and 1113 and all other applicable provisions of the SCAQMD. Rules 403 and 1113 were added as mitigation in CalEEMod, as discussed below. Cal Green standards include indoor water usage reduction, regulation of outdoor water usage, and construction waste reduction

The grading phase involves the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of construction emissions modeling, it was assumed that the project

would comply with the SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the SCAB. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

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. In addition, a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide, shall be utilized to remove bulk material from tires and vehicle undercarriages before vehicles exit the site. 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 continuously 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.

The architectural coating phase involves the greatest release of ROG. The emissions modeling also includes the use of low-VOC paint (50 g/L for non-flat coatings) as required by SCAQMD Rule 1113.

Construction Emissions

Table 5 summarizes maximum daily emissions of pollutants associated with construction of the proposed project. Maximum daily estimates account for compliance with the above described requirements, but do not include any additional mitigation. As shown, project-generated emissions would not exceed SCAQMD recommended thresholds for reactive organic gases (ROG), nitrogen oxides (NO_X), carbon monoxide (CO), and particulate matter (PM_{10} or $PM_{2.5}$).

Table 5 Estimated Project Construction Maximum Daily (lbs/day) Emissions

	Maximum Emissions[1] (lbs/day)				
Construction	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum lbs/day	3.2	33.1	21.2	10.4	6.1
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**

	Maximum Emissions[1] (lbs/day)				
Construction	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum on-site lbs/day	3.1	33.1	20.6	10.2	6.0
Localized Significance Thresholds[2] (LSTs) (On-site only)	*N/A*	*270*	*2,193*	*16*	*9*
Threshold Exceeded?	**N/A**	**No**	**No**	**No**	**No**

Notes: All calculations were made using CalEEMod. See Appendix B for calculations. Demolition, Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust. Emission data is pulled from "mitigated" results that include compliance with regulations and project design features that will be included in the project.

[1] Grading phases incorporate anticipated emissions reductions from the conditions listed above, which are required by SCAQMD Rule 403 to reduce fugitive dust. The architectural coating phases incorporate anticipated emissions reductions from the conditions listed above, which are required by Rule 1113.

[2] LSTs are for a 5-acre project in SRA-33 within a distance of 82 feet from the site boundary.

As shown in Table 5, emissions of CO, PM_{10}, $PM_{2.5,}$ NO_X, and ROG would not exceed SCAQMD regional thresholds or LSTs, assuming adherence to the conditions listed above required by SCAQMD Rule 403.

Operational Emissions

Table 6 summarizes the project's operational emissions minus operational emissions of the existing buildings that are to be demolished. The majority of project-related operational emissions would be due to vehicle trips to and from the site. Project-generated emissions would not exceed SCAQMD recommended thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Table 6 Estimated Project Operational Maximum Daily (lbs/day) Emissions

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	0.6	<0.1	2.3	<0.1	<0.1	<0.1
Energy	<0.1	0.2	0.1	<0.1	<0.1	<0.1
Mobile	1.0	4.1	11.3	<0.1	3.9	1.1
Project Total	1.6	4.3	13.7	<0.1	3.9	1.1
Current Emissions	0.8	2.4	6.8	<0.1	1.2	0.3
Net Change	0.8	1.9	6.9	<0.1	2.7	0.8
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

See Appendix B for CalEEMod computer model output. Note: Numbers may not add up due to rounding.

d. Would the project expose sensitive receptors to substantial pollutant concentrations?

LESS THAN SIGNIFICANT IMPACT

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Sensitive receptors are defined as land uses that are more likely to be used by these population groups and include health care facilities, retirement homes, school and playground facilities, and residential areas.

The California Air Resources Board's (ARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (California ARB, Air Quality Land Use Handbook, 2005). The primary concern with respect to heavy-traffic roadway adjacency is the long-term effect of toxic air contaminants (TACs), such as diesel exhaust particulates, on sensitive receptors. The primary source of diesel exhaust particulates is heavy-duty trucks on freeways and high-volume arterial roadways. The project site is over one miles west of Highway 71 and is not within 500 feet of a freeway. According to the traffic study prepared for the proposed project, there are 383 average daily trips on Rustic Drive and 29,253 average daily trips on Chino Hills Parkway adjacent to the project site. (LLG, Traffic Impact Analysis, 2017) Thus, the proposed project would not introduce sensitive receptors to an urban road with 100,000 vehicles per day, and the proposed project would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.

e. Would the project create objectionable odors affecting a substantial number of people?

NO IMPACT

The 1993 SCAQMD *CEQA Air Quality Handbook* identifies land uses associated with odor complaints. Because religious institution uses are not identified as land uses associated with odor complaints by SCAQMD, the project would not generate objectionable odors affecting a substantial number of people. There would be no impact.

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	☐	■	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	☐	☐	☐	■
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	☐	☐	☐	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	☐	☐	■	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	☐	☐	☐	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

On October 3, 2016 Rincon Consultants, Inc. conducted a site visit to document the existing site conditions and plant and wildlife species. The project site is a disturbed and mostly developed lot with several existing buildings and structures associated with its current use as a Buddhist Temple. The grounds surrounding the existing buildings and structures consist of paved driveways and parking lots surrounded by landscaped lawns and gardens. The areas of the project site that are not dominated by development or ornamental landscaping consist of bare dirt with gravel and sparse ruderal vegetation. Based on aerial photographs the site has been developed and utilized as a Buddhist Temple since at least 2002, and was graded as early as 1994.

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

POTENTIALLY SIGNIFICANT UNLESS MITIGATION INCORPORATED

Special-status species are those plants and animals 1) listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS and National Marine Fisheries Service (NMFS) under the Federal Endangered Species Act (FESAC); 2) listed or proposed for listing as Rare, Threatened, or Endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA); 3) recognized as Species of Special Concern (SSC) by the CDFW; 4) afforded protection under Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code (CFGC); and 5) occurring on lists 1 and 2 of the CDFW California Rare Plant Rank (CRPR) system per the following definitions:

- List 1A = Plants presumed extinct in California
- List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened)
- List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known)
- List 2 = Rare, threatened or endangered in California, but more common elsewhere

In addition, special-status species are ranked globally (G) and subnationally (S) 1 through 5 based on NatureServe's (2010) methodologies:

- G1 or S1 - Critically Imperiled Globally or Subnationally (state)
- G2 or S2 - Imperiled Globally or Subnationally (state)
- G3 or S3 - Vulnerable to extirpation or extinction Globally or Subnationally (state)
- G4 or S4 - Apparently secure Globally or Subnationally (state)
- G5 or S5 - Secure Globally or Subnationally (state)
- ? - Inexact Numeric Rank
- T - Infraspecific Taxon (subspecies, varieties, and other designations below the level of species)
- Q – Questionable taxonomy that may reduce conservation priority

Special-Status Plants

The project site primarily consists of developed areas associated with the Buddhist Temple, landscaped ornamental vegetation, and disturbed bare ground. The site is relatively devoid of native vegetation, as it is dominated by landscaped lawns and gardens and sparse ruderal vegetation. Four

vegetation communities or land cover types were observed within the project site, including ornamental landscaping, ruderal/disturbed, bare ground, and urban/developed lands.

Ornamental Landscaping

The majority of vegetation on-site consists of ornamental trees and shrubs planted for landscaping. Ornamental landscaping is scattered throughout the project site and includes bougainvillea (*Bougainvillea spectabilis*), ornamental rose (*Rosa* sp.), African fern pine (*Afrocarpus falcatus*), bamboo (*Bambusa* sp.), citrus (*Citrus* sp.), eucalytpus (*Eucalyptus* sp.), jacaranda (*Jacaranda mimosifolia*), apple (*Malus domestica*), ornamental pine (*Pinus* sp.), pomegranate (*Punica granatum*), and Washington fan palm (*Washingtonia robusta*).

Ruderal/Disturbed

Sparse ruderal species were observed scattered throughout the site. Species observed in this community are primarily non-native, and include pigweed (*Amaranthus albus*), horehound (*Marrubium vulgare*), and Russian thistle (*Salsola tragus*). Native rattlesnake weed (*Chamaesyce albomarginata*), croton (*Croton setiger*), jimsonweed (*Datura wrightii*), and telegraph weed (*Heterotheca grandiflora*) were also observed in this community.

Bare Ground

This land cover type is characterized by unvegetated and mostly compacted dirt. Bare ground is scattered throughout the project site between areas of development and ornamental landscaping, often covered by gravel. No vegetation was observed within this land cover type.

Urban/Developed Lands

Urban/developed lands are areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation

The project site is located in an urbanized area and has been previously graded and is surrounded by pavement, bare ground, and developed structures. Because of the historic and existing disturbance form development as a Buddhist Temple and prevalence of non-native species, the site is not suitable for sensitive plant species. Impacts would be less than significant

Special-Status Wildlife

Ornamental trees and existing buildings/structures may provide suitable roosting habitat for special-status bat species. In addition, the ornamental landscaping may provide suitable foraging habitat for special-status bat species and in trees for special-status avian species. Roosting and foraging habitat is considered low quality due to the historic and existing disturbance from development as a Buddhist Temple. The proposed project would involve removal of trees and demolition of existing buildings that may provide low quality roosting and/or foraging habitat for sensitive bat and avian species. The sensitive bat and avian species with potential to occur on-site are not geographically restricted to the vicinity of the project area and the loss of low quality roosting and/or foraging habitat would not significantly affect the species. Furthermore, loss of habitat or injury/death to limited individuals would not contribute towards a trend toward federal listing or a loss of viability of sensitive bat or avian species. Given the low potential for occurrence on-site, small disturbance

footprint and the location of the project site adjacent to disturbed/developed areas, the proposed project is not likely to have population-wide negative effects on sensitive bat or avian species.

The project site contains ornamental trees and other vegetation. While these areas would not provide suitable nesting habitat for sensitive avian species, they may provide suitable nesting habitat for several common avian species that occur within the project site and the immediate vicinity. Nesting birds are protected by the California Fish and Game Code (CFGC) 3503 and the Migratory Bird Treaty Act (MBTA). Vegetation removal and construction activities associated with the proposed project could result in the inadvertent destruction of nests, eggs, or nestlings of common bird species. Because no special-status bird species are expected to occur within the project site, this impact would not rise to the level of significance under CEQA. Furthermore, impacts of this nature are prohibited by the MBTA and applicable sections of the CFGC, and must be avoided. As such, the proposed project would be required to comply with the MBTA and applicable sections of the CFGC which would include limiting vegetation trimming and removal activities to be conducted outside of the nesting bird season, pre-construction nesting bird surveys during the nesting bird season, and establishment of no-work buffers if nests are identified.

Compliance with the MBTA would further reduce impacts to avian species, by ensuring that no actual mortality of birds occurs as a result of development facilitated by the proposed project. However, if project vegetation removal and grading occurs during the nesting season, typically January 15 to August 31, it may impact protected avian species. The project site would not provide suitable habitat for any other sensitive wildlife species. Impacts would be less than significant with mitigation incorporated.

BIO-1 **Pre-construction Nesting Bird Survey.** To avoid disturbance of nesting and special-status birds, including raptor species protected by the MBTA and CFGC, project activities including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season (typically January 15 through August 31). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the Project Boundary, including a 300-foot buffer (500-foot for raptors). The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in northern California natural communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined by the qualified biologist and demarcated with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/ nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

NO IMPACT

Plant communities are considered sensitive biological resources if they have limited distributions, have high wildlife value, include sensitive species, or are particularly susceptible to disturbance. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their

occurrences. The project site contains the following habitats: ornamental landscaping, ruderal/disturbed, bare ground, and urban/developed lands. The project site does not contain riparian habitat or other sensitive natural communities. There would be no impact.

c. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

LESS THAN SIGNIFICANT IMPACT

The project site does not contain potentially jurisdictional drainages or wetlands. A county-maintained municipal storm water channel traverses adjacent to the property along the northern border of the site. The storm water channel is separated from the project site and is not proposed to be impacted by the proposed project. Impacts would be less than significant.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

LESS THAN SIGNIFICANT IMPACT

The CDFW Biogeographic Information and Observation (BIOS) database does not include any mapped essential habitat connectivity areas within the immediate vicinity of the project site (CDFW, BIOS, 2017). The closest mapped essential habitat connectivity area is located approximately 2.5 miles south of the project site in the vicinity of Chino Hills State Park. The project site is separated from this habitat connectivity area by urban development and paved roadways. Furthermore, the project site is surrounded by residential development and heavily travelled transportation corridors, including SR-142. Thus, it is not within a location that serves or would serve as a native resident or migratory wildlife corridor. Impacts would be less than significant.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

NO IMPACT

Chino Hills Municipal Code Chapter 16.90 Tree Preservation and Chapter 12.26 City-Owned Trees make it unlawful for any person, firm, partnership, corporation or other legal entity to destroy or remove any protected tree on undeveloped property or on designated developed properties within the City without a Tree Removal Permit. Protected trees include both native and heritage trees as defined in the Municipal Code as a tree with a cumulative diameter of 44 inches or greater diameter breast height (DBH) and of significant age, health, and quality to be deemed valuable to the aesthetics of the community. Trees excluded from protection include; invasive trees as defined by the California Invasive Plant Council; protected trees not located within the Fire Hazard Overlay District; protected trees within the Fire Hazard Overlay District not visible from adjacent public or private right-of-ways, streets, parks, or trails; trees determined to create a safety hazard or are damaging to public improvements; and City trees removed pursuant to a valid tree permit. The majority of trees present on-site are not native species and none of the trees present on-site have cumulative diameters of forty-four (44) inches or greater DBH. Therefore, none of the trees present on-site would be protected as native trees or heritage trees under the Municipal Code. Implementation of the proposed project would not conflict with local policies protecting biological resources identified in the General Plan. There would be no impact.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

NO IMPACT

The project site is not located within the coverage area of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. No impacts would occur.

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5	☐	■	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				
d. Disturb any human remains, including those interred outside of formal cemeteries	☐	■	☐	☐
e. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	■	☐	☐
f. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 2024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American tribe.	☐	■	☐	☐

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

NO IMPACT

The proposed project includes the development of new structures at the existing Buddhist Temple in Chino Hills and demolition of the existing dormitory and meeting hall on the project site. The site is characterized by existing development and surrounding development of urban character. Existing structures, the dormitory and meeting hall, at the project site are not identified as historical resources as defined in §15064.5. The California Code of Regulations defines a historic resource in §15064.5 as the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historic Resources
- A resource included in a local register of historical resources or identified as significant in an historical resource survey meeting
- Any object, building, structure, site, area, place, record, or manuscript which a lad agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historic resource, provided the lead agencies determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    2. Is associated with the lives of persons important in our past
    3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    4. Has yielded, or may be likely to yield, information importation to prehistory.

A single-family residence, constructed between 1946-1959 is located on the property. The residence is a modest post-war style Ranch home with visible alterations that include replacement of original windows, doors, siding and roofing materials. As a result of these alterations, the residence does not retain sufficient integrity to warrant potential historic designation. Therefore there are no historical resources present on the site. In addition, expansion of existing structures at the Buddhist Temple site that would occur under the proposed project would be consistent in visual characteristics of existing on-site development, and would not affect potentially historic resources in the surrounding area, such as through alterations in the existing aesthetic environment. Therefore, no impact to historical resources would occur.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d. Would the project disturb any human remains, including those interred outside of formal cemeteries?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Chino Hills contains 121 recorded cultural resources, 26 of which are prehistoric-era sites, 55 are historic-era sites, 38 are prehistoric isolates, and two are historic isolates. There are five areas in the City that represent notable parts of the history of Chino Hills: Boys Republic, Tres Hermanos, Carbon Canyon, Los Serranos, and Laband. Known paleontological resources in the City consist of Miocene and Pleistocene fossils. Over 2,860 specific fossil remains have been documents by past paleontological investigations in various parts of the City. Based on the numerous fossil findings in Chino Hills, the entire City is considered sensitive for paleontological resources (City of Chino Hills, FEIR General Plan Update, 2015c).

The project site is flat, is currently developed, and does not contain identified unique geologic features. The project site has been previously graded and paved; therefore, the likelihood that intact archaeological resources, paleontological resources, or human remains are present is low. Although the entire City is considered sensitive for paleontological resources, the site has been developed previously and the project would result in limited grading; therefore, any surficial archaeological or paleontological resources that may have been present at one time have likely been disturbed. Therefore, the topmost layers of soil on the project site are not likely to contain intact archaeological deposits or fossils. Although excavation and grading is not expected to uncover archaeological resources, paleontological resources, or human remains, the possibility for such resources to be encountered cannot be completely ruled out, depending on the amount of required soil disturbance under the proposed project compared to the depth and type of disturbance that has previously occurred to accommodate the existing development. Therefore, impacts associated with the potential to encounter undiscovered archaeological resources, paleontological resources, or human remains would be potentially significant.

Mitigation Measure

Mitigation Measure CR-1 would reduce potential impacts to unknown resources to a less than significant level by providing a process for preserving such resources if they are uncovered.

CR-1 **Resource Recovery.** If unknown cultural resources are discovered during project construction, all work in the area of the find shall cease, and a qualified archaeologist or paleontologist shall be retained by the project sponsor to assess the significance of the find, make recommendations on its disposition, and prepare appropriate field documentation, including verification of the completion of required mitigation.

If human remains are encountered during construction, all work shall cease and the Los Angeles County Coroner's Office shall be contacted pursuant to procedures set forth in Section 7050.5 of the Health and Safety Code. If the remains are identified as prehistoric, a Native American representative shall be consulted to participate in the recovery and disposition of the remains.

e. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is (a) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

f. Would the project cause a substantial adverse change in the significance of a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 2024.1?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

Tribal cultural resources are defined in Public Resources Code 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1

The project site has been previously graded and does not contain any known tribal cultural resources. However, the proposed project would require excavation below the surficial soil layers for the construction of an underground parking level. This could potentially uncover previously unknown tribal cultural resources. As such, impacts would be potentially significant unless mitigation is incorporated.

In addition, California Assembly Bill 52 (AB 52) requires that Native American Tribes must be consulted by lead agencies when a proposed project would occur in an area in which the tribe can prove affiliation. Per this requirement, the City of Chino Hills initiated the consultation process on December 13, 2016, and received a letter from the Gabrieleno Band of Mission Indians on December 14, 2016. The letter is attached as Appendix F, and Mitigation Measure CR-2 addresses the concerns regarding potential unanticipated discoveries during the construction period.

Mitigation Measure

The following mitigation measure would reduce potential impacts to a less than significant level by providing for a monitor and avoidance of impacts to any tribal cultural resources that may be uncovered during grading.

CR-2 **Unanticipated Discovery of Tribal Cultural Resources.** In the event that archaeological resources of Native American origin are identified during project construction, all work in the area of the find shall cease and a qualified archaeologist will consult with the City to begin Native American consultation procedures. Construction activities can continue in areas 50 feet away from the find and not associated with the tribal cultural resource location. As part of this process, it may be determined that archaeological monitoring may be required. In addition to the archaeologist, a Native American monitor may also be required to participate in the recovery and disposition of the remains.

6 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault	☐	☐	■	☐
2. Strong seismic ground shaking	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction	☐	☐	■	☐
4. Landslides	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil	☐	☐	■	☐
c. Be located on a geologic unit or soil that is made unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the *Uniform Building Code*, creating substantial risks to life or property	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater	☐	☐	☐	■

a.1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

LESS THAN SIGNIFICANT IMPACT

Based on the fault maps from the California Department of Conservation, the project sit is not located on or adjacent to an Alquist-Priolo designated active fault area, nor are there known active or potentially active faults trending toward or through the site (California DOC, State of California Earthquake Fault Zones, Prado Dam Quadrangle Official Map, 2003). The closest active fault is the Chino Fault approximately two miles east of the site. Since no active faults cross the site, the possibility of damage due to ground rupture is low. Therefore, potential impacts related to surface rupture would be less than significant.

a.2. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

LESS THAN SIGNIFICANT IMPACT

The project site is located in the highly seismic Southern California region within the influence of several fault systems that are considered to be active or potentially active. An active fault is defined by the State of California as a "sufficiently active and well defined fault that has exhibited surface displacement within the Holocene time (the last 11,000 years)." A potentially active fault is defined by the State as a "fault with a history of movement within the Pleistocene time (between 11,000 and 1.6 million years ago)." As mentioned above, no faults have been mapped across the project site. However, as with all properties in the seismically active Southern California region, the project site is susceptible to ground shaking during a seismic event. Chino Hills, along with all of Southern California, is within Seismic Zone 4 and subject to seismic ground shaking from faults in the region. Within the United States, Seismic Zones range from 1 to 4, with the latter representing the highest earthquake danger (California Seismic Safety Commission, Homeowner's Guide to Earthquake Safety, 2005). Since the Chino Fault is approximately two miles away from the project site, ground shaking would occur in the event of an earthquake. In general, the City regulates development (and reduced geologic and seismic impacts) through the requirements of the California Building Code (CBC), local land use policies and zoning, and compliance with the CHMC. Thus, the effects can be minimized by implementing seismic requirements specified by the City's Buildings and Construction Code, which adopts the CBC by reference in Title 15, Chapter 15.04, of the CHMC. The CBC requires various measures of all construction in California to account for hazards from seismic shaking. As such, impacts related to seismically-induced surface rupture or ground shaking would be less than significant.

a.3. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

LESS THAN SIGNIFICANT IMPACT

Liquefaction is a phenomenon in which saturated silty to cohesionless soil below the groundwater table are subject to a temporary loss of strength due to the buildup of excess pore pressure during cyclic stresses induced by an earthquake. These soils may acquire a high degree of mobility and lead to structurally damaging deformations. Liquefaction begins below the water table, but after liquefaction has developed, the groundwater table will rise and cause the overlying soil to mobilize. Liquefaction typically occurs in areas where groundwater is less than 30 feet from the surface and where the soils are composed of poorly consolidated fine- to medium-grained sand. In addition to the necessary soil conditions, the ground acceleration and duration of the earthquake must also be of a sufficient level to initiate liquefaction.

According to the Department of Conservation Division of Mines and Geology Seismic Hazard Zones Map, the area has not been evaluated to determine if the project site is/is not located within a State Seismic Hazard Zone for liquefaction (California DOC, State of California Seismic Hazard Zones, Prado Dam Quadrangle Official Map, 2001). However, Figure 5-3, *Liquefaction Susceptibility Seismically-Induced Landslide Hazard Zone*, of the General Plan Safety Element indicates that the project site is in an area of moderate liquefaction potential (Chino Hills, General Plan, 2015b). According to Section 16.24.030 of the CHMC, "a detailed geologic study prepared by a registered geologist shall be submitted with all land use applications and development permits proposed within the geologic hazard overlay district. The Building Official shall determine the scope of the study, depending upon the geologic hazards affecting the subject property." A Geotechnical Engineering Evaluation report was prepared for the proposed project by Geo-Advantec, Inc. (GAI), on June 2012, and is included in Appendix C (GAI, Geotechnical Engineering Evaluation Report, 2012). GAI conducted a 50-foot deep boring to evaluate likelihood of liquefaction for the project site and determined that, due to the type of soils/earth materials encountered, liquefaction is not a potential hazard for the site. As such, potential impacts due to liquefaction would be less than significant.

a.4. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

LESS THAN SIGNIFICANT IMPACT

The geologic character of an area determines its potential for landslides. Steep slopes, the extent of erosion, and the rock composition of a hillside all contribute to the potential for slope failure and landslide events. In order to fail, unstable slopes need to be disturbed; common triggering mechanisms of slope failure include undercutting slopes by erosion or grading, saturation of marginally stable slopes by rainfall or irrigation; and, shaking of marginally stable slopes during earthquakes.

The project site is comprised of flatly graded areas that moderately alter in vertical elevations with a general slop gently descending toward the Chino Creek Channel. According to GAI, the subject site's elevation varies approximately between 728 and 756 feet above mean sea level (GAI, Geotechnical Engineering Evaluation Report, 2012). As shown in the Department of Conservation Seismic Hazard Zones Map for the Prado Dam Quadrangle, the State of California has not evaluated the project site for landslide potential (California DOC, State of California Seismic Hazard Zones, Prado Dam Quadrangle Official Map, 2001). However, Figure 5-5 of the General Plan Safety Element, *Landslide Susceptibility*, indicates that the project site is in an area that is marginally susceptible to landslides (Chino Hills, General Plan, 2015b). According to GAI, no evidence for landslide potential was observed on or in the immediate vicinity of the project site. The project site has been graded to large-size relatively level pads and the proposed locations for the buildings are relatively flat. Therefore, and due to the lack of significant topographic changes at the proposed site, GAI determined that landslides are not considered to be a potential problem (see Appendix C). (GAI, Geotechnical Engineering Evaluation Report, 2012) As such, impacts due to landslides would be less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

LESS THAN SIGNIFICANT IMPACT

The proposed project would involve demolition of an existing Buddhist Temple buildings and structures for construction of a new Buddha Hall, meditation area, classroom/office building, and dormitory for temple expansion. As discussed in Section III, *Air Quality*, dust control measures would

be implemented during construction as required by the SCAQMD Rule 403 to minimize fugitive dust emissions. Measures to minimize fugitive dust emissions may include watering exposed surfaces and covering soil stockpiles. These measures are also effective for reducing soil erosion. Because the project site is relatively flat (reducing the potential for high speed storm water flows during construction) and would comply with SCAQMD Rule 403, project development would not have the potential to cause substantial erosion or the loss of topsoil. In addition, the proposed project would be required to comply with Section 16.54.050 of the CHMC, which states that no land clearing or grading shall occur unless proven compliant with an approved soil erosion and sediment control plan or issued permit. Compliance with SCAQMD and CHMS regulations would result in a less than significant impact related to soil erosion and loss of topsoil.

c. *Would the project be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*

LESS THAN SIGNIFICANT IMPACT

As discussed, the project site would be subject to less than significant impacts related to landslides and liquefaction. Lateral spreading is the horizontal movement or spreading of soil toward an open face. Lateral spreading may occur when soils liquefy during an earthquake event, and the liquefied soils with overlying soils move laterally to unconfined spaces. Subsidence is the sudden sinking or gradual downward settling of the earth's surface with little or no horizontal movement. Subsidence is caused by a variety of activities, which include, but are not limited to, withdrawal of groundwater, pumping of oil and gas from underground, the collapse of underground mines, liquefaction, and hydrocompaction.

Since liquefaction is not a potential hazard for the site, impacts related to lateral spreading and subsidence would also be less than significant. In addition, according to the General Plan Safety Element, future subsidence due to groundwater withdrawal is not anticipated to occur in the City of Chino Hills (Chino Hills, General Plan, 2015b). Nonetheless, the proposed project must comply with CBC requirements related to subsidence, lateral spreading, and collapse. With compliance with CBC requirements, impacts associated with lateral spreading, subsidence, and collapse would be less than significant.

d. *Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial risks to life or property?*

LESS THAN SIGNIFICANT IMPACT

Expansive soils are soils that have the ability to shrink or swell as its water content changes. According to Figure 5-6, *Expansive Soils*, of the City of Chino Hills General Plan Safety Element, the project site is located within an area of low shrink-swell potential (Chino Hills, General Plan, 2015b). However, according to the Geotechnical Engineering Evaluation Report (Geotechnical Report) prepared by GAI, low- to moderate expansive soils were encountered at the project site (GAI, Geotechnical Engineering Evaluation Report, 2012). GAI determined that development of the proposed project is feasible provided the following geotechnical recommendations related to expansive soils and backfill materials are followed. Although the Geotechnical Report does not present specific recommendations for the proposed dormitory, it is assumed that excavation and backfill activity for development of this building would be similar to the specifications described for the Buddha Hall. Construction plans would be reviewed by the City's Building Official for consistency with current building codes and implementation of recommendations contained in the Geotechnical Report (see Appendix C). In addition, the proposed project would be required to

comply with CBC requirements related to expansive soils. Foundation and structural design would be required to incorporate measures prescribed in the CBC to address these design considerations and minimize related project impacts. Therefore, implementation of the recommendations in the geotechnical report and other applicable regulations would reduce potential impacts related to expansive soils to a less than significant level.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

NO IMPACT

The proposed project would be served by the City's existing sewer system. Since the project is not proposing a septic system or any other alternative waste water disposal systems, there is no potential for adverse effects due to soil incompatibility. Therefore, the project would have no impact.

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7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	☐	☐	■	☐
b. Conflict with any applicable plan, policy, or regulation adopted to reduce the emissions of 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. Climate change is the result of numerous, cumulative sources of greenhouse gases (GHG) that contribute to the "greenhouse effect," 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 into space and re-radiate it in all directions. This process is essential to support 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 and contribute to an average increase in Earth's temperature.

GHGs occur naturally and from human activities. Human activities that produce GHGs include fossil fuel burning (coal, oil, and natural gas for heating and electricity, gasoline and diesel for transportation); methane generated by landfill wastes and raising livestock; deforestation activities; and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF6). Since 1750, estimated concentrations of CO2, CH4, and N2O 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. Changes to the land surface indirectly affect the atmosphere by changing the way in the Earth absorbs gases from the atmosphere. Potential impacts in California of global warming may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (California Energy Commission [CEC], Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California, 2009).

CEQA Guidelines provide regulatory direction for the analysis and mitigation of GHG emissions appearing 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 San Bernardino County Regional Greenhouse Gas Reduction Plan provided San Bernardino Associated Governments (SANBAG) and the 21 participating cities with an inventory of GHG

emissions, targets, and reduction strategies for each City. The City of Chino Hills has not adopted a Climate Action Plan (CAP); however, Chino Hills is included in the San Bernardino Regional Greenhouse Gas Reduction Plan. This reduction plan also summarizes the actions that each city has selected in order to reduce GHG emissions, and each city's progress towards their selected GHG reduction goal (SANBAG, San Bernardino County Regional Greenhouse Gas Reduction Plan, 2014).

The City selected a goal to reduce emissions to a level that is 20% below its projected emissions level in 2020. The City will meet and exceed this goal subject to reduction measures that are technologically feasible and cost-effective per AB 32 through a combination of State (92%) and local (8%) efforts. The City actually exceeds this goal with only state/county level actions (112% of goal), but has committed to additional local measures and to support applicable regional measures. Additional reduction is achieved through local measures including solar installation for existing housing, equipment upgrades at wastewater treatment plants, and SB X7-7 for water reduction. The City's emissions target for 2020, which has already been achieved, is 384,542 MT CO2e (SANBAG, San Bernardino County Regional Greenhouse Gas Reduction Plan, 2014).

In guidance provided by the SCAQMD's GHG CEQA Significance Threshold Working Group in September 2010, SCAQMD considered a tiered approach to determine the significance of residential and commercial projects. The draft tiered approach is outlined in meeting minutes dated September 29, 2010.

Tier 1 - If the project is exempt from further environmental analysis under existing statutory or categorical exemptions, there is a presumption of less than significant impacts with respect to climate change. If not, then the Tier 2 threshold should be considered.

Tier 2 - Consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines section 15064(h)(3), 15125(d) or 15152(a). Under this Tier, if the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If there is not an adopted plan, then a Tier 3 approach would be appropriate.

Tier 3 - Establishes a screening significance threshold level to determine significance. The Working Group has provided a recommendation of 3,000 metric tons (MT) of CO_2e per year for mixed use projects.

Tier 4 - Establishes a service population threshold to determine significance. The Working Group has provided a recommendation of 4.8 MT of CO_2e per year for land use projects.

Because the City of Chino Hills has not adopted a qualified GHG reduction plan, the proposed project is evaluated based on the SCAQMD's recommended Tier 3 significance threshold of 3,000 MT of CO_2e per year. The Tier 3 screening level threshold is intended to assess small and average sized projects and is the most appropriate threshold for the proposed project.

This analysis is based on the methodologies recommended by the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* (2008) white paper. The analysis focuses on CO_2, N_2O, and CH_4 as these are the GHG emissions that on-site development would generate in the largest quantities.

Methodology

CO2, CH4, and N2O emissions were calculated to identify the magnitude and nature of the project's potential GHG emissions and environmental effects. The analysis focuses on CO2, CH4, and N2O because these make up 98.9% of all GHG emissions by volume (IPCC, Summary for Policymakers, 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF6, were also considered for the analysis, but because the project is a residential development, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent GWP in MT CO2e. Small amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would also be emitted; however, these other GHGs would not substantially add to the total GHG emissions. Calculations are based on the methodologies discussed in the California Air Pollution Control Officers Association (CAPCOA) *CEQA and Climate Change* white paper (CAPCOA, CEQA and Climate Change, 2008) and included the use of the California Climate Action Registry (CCAR) *General Reporting Protocol* (CCAR, General Reporting Protocol, 2009).

GHG emissions associated with the project were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1 (Appendix B).

Operational Emissions

CalEEMod provides operational emissions from the proposed project, which include CO_2, N_2O, and CH_4. Emissions from energy use include emissions from electricity and natural gas use. The emissions factors for natural gas combustion are based on EPA's AP-42, (Compilation of Air Pollutant Emissions Factors) and CCAR. Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (SCAQMD, CalEEMod User's Guide, 2016).

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from ARB, U.S. EPA, and district supplied emission factor values (SCAQMD, CalEEMod User's Guide, 2016).

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (SCAQMD, CalEEMod User's Guide, 2016). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater use calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Southern California.

For mobile sources, CO_2 and CH_4 emissions from vehicle trips to and from the project site were quantified using CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the CCAR *General Reporting Protocol* (2009) direct emissions factors for mobile combustion (see Appendix B for calculations). The estimate of total daily trips associated with the project was based on CalEEMod defaults. Emission rates for N_2O emissions were based on the vehicle fleet mix output generated by CalEEMod and the emission factors found in the CCAR General Reporting Protocol.

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA, CEQA and Climate Change, 2008). In accordance with SCAQMD's recommendation, GHG emissions from construction of the project are amortized over a 30-year period (the assumed life of the project) and added to annual operating emissions.

Construction of the proposed project would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. CalEEMod was used to estimate emissions associated with the construction period, based on the construction schedule supplied by the City of Chino Hills. Complete results from CalEEMod and assumptions can be viewed Appendix B.

The volume of demolition material was estimated based on the square footage and height of the buildings to be demolished. The acres graded were estimated in CalEEMod based on the number of passes that would need to occur on the project site for grading. The construction schedule was based on the schedule supplied by the project applicant, and the architectural coating phase was changed to overlap with building construction, representing a more realistic construction practices.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

LESS THAN SIGNIFICANT IMPACT

For the purpose of this analysis, it is assumed that construction activity would occur over approximately five years, with completion by the end of 2023 and full operation by the start of 2024. As shown in Table 7 construction activity for the project would generate an estimated 1,778 metric tons (MT) of CO_2e. When amortized over a 30-year period, construction of the project would generate about 59 MT of CO_2e per year.

Table 7 Estimated Construction GHG Emissions

Construction Year	Annual Emissions MT/yr CO_2e
2018	240.1
2019	366.8
2020	391.2
2021	179.8
2022	325.1
2013	275.2
Total	1,788.2
Amortized over 30 Years	**59.3**

See Appendix B for CalEEMod worksheets.

Table 8 combines the construction, operational, and mobile GHG emissions associated with development of the project minus the current operational emissions of the two exiting buildings on the project site. As shown, annual emissions from the proposed project would total approximately 536 MT of CO_2e per year. These emissions do not exceed the 3,000 MT per year threshold.

Table 8 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions MT/yr CO_2e)
Construction	59.3
Operational	
Area	0.5
Energy	167.5
Solid Waste	47.8
Water	31.3
Mobile	
CO_2 and CH_4	409.3
N_2O	20.7
Minus Existing Operational	200.6
Net Total	**535.8**
Threshold	*3,000*
Exceeds Threshold?	**No**

See Appendix B for CalEEMod worksheets.

In September 2016, SB 32 was signed into law, formally codifying the 40% GHG emission reduction target adopted by Governor Brown in April 2015 through an executive order (B-30-15) into California legislation. SB 32 became effective on January 1, 2017 and requires the ARB to develop technologically feasible and cost effective regulations to achieve the targeted 40%GHG emission reduction. The ARB is currently working to update the Scoping Plan to provide a framework for achieving the 2030 target. While the current San Bernardino County Regional Greenhouse Gas Reduction Plan does not have a 2030 target, Chino Hills does demonstrate a 2020 reduction which is 7% greater than that required by AB 32. As such, Chino Hills has shown substantial progress towards meeting the 2030 target and when combined with state reduction strategies will result in a fair share contribution towards meeting the states 2030 goal. Furthermore, this project has shown consistency with the applicable RTP/SCS GHG reduction strategies. Therefore, the project would not conflict with the State's 2030 GHG reduction goals as outlined in SB 32.

b. Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

LESS THAN SIGNIFICANT IMPACT

Although the City of Chino Hills has not adopted a local CAP or another form of a GHG Reduction Plan, there are a number of General Plan policies that were established to reduce the citywide levels of GHG over time, which were summarized under Local Regulations above. The project would be consistent with the San Bernardino County Regional Greenhouse Gas Reduction Plan, because Chino Hills has already achieved the 20% below 1990 levels by 2020 with State and local plans and

measures. The proposed project is consistent with pertinent General Plan policies, specifically Policy CN-3.1 where the City should endorse green building design in new and existing construction. The design and implementation of the proposed project would comply with Cal Green Building Standards, which includes measures to reduce emissions. The project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/L. Table 9 illustrates the project's consistency with relevant goals and strategies embodied in the 2016 RTP/SCS. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The RTP/SCS charts a course for closely integrating land use and transportation, and outlines more than $556.5 billion in transportation system investments through 2040. The preparation process includes input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. (SCAG, RTP/SCS, 2016)

Table 9 Consistency with Applicable SCAG RTP/SCS GHG Emission Reduction Strategies

Goal RS-2	Project Consistency
Land Use Actions and Strategies	
Focus new growth around transit The 2016 RTP/SCS land use pattern reinforces the trend of focusing growth in the region's HQTAs. Concentrating housing and transit in conjunction concentrates roadway repair investments, leverages transit and active transportation investments, reduces regional life cycle infrastructure costs, improves accessibility, avoids greenfield development, and has the potential to improve public health and housing affordability. HQTAs provide households with alternative modes of transport that can reduce VMT and GHG emissions.	**Consistent** Although the primary use of the proposed project would be private-institutional, the project would also include a residential use (the proposed dormitory). The proposed project would be approximately 0.4 mile west from a bus stop and would include bicycle parking as well as parking for clean air vehicles. This would incentivize modes of transport that reduce both VMT and GHG emissions.
Plan for growth around livable corridors The Livable Corridors strategy seeks to create neighborhood retail nodes that would be walking and biking destinations by integrating three different planning components: 1. Transit improvements 2. Active transportation improvements (i.e. improved safety for walking and biking) 3. Land use policies that include the development of mixed-use retail centers at key nodes and better integrate different types of ritual uses.	**Consistent** The proposed project would be located in an urban area and in close proximity to commercial and residential uses. The site is transit-oriented as it is located approximately 0.4 miles west form a bus stop, which provides for public access to retail, commercial uses, and services throughout the City of Chino Hills. The project would also provide bicycle racks, which would incentivize greater use of alternative transportation to access public transit. As such, temple patrons and monks residing on Temple grounds would have accessibility to public transit.
Provide more options for short trips 38% of all trips in the SCAG region are less than three miles. The 2016 RTP/SCS provides two strategies to promote the use of active transport for short trips. Neighborhood Mobility Areas are meant to reduce short trips in a suburban setting, while "complete communities" support the creation of mixed-use districts in strategic growth areas and are applicable to an urban setting.	**Consistent** The proposed project would involve construction of a religious facility adjacent to residential development and approximately 0.4 mile west from a bus stop. The project would also include parking for clean air vehicles as well as bicycle parking. As such, alternative means of transportation (i.e. biking, walking, and busing) would be available for accessibility to the project site.
Transportation Strategies	
Preserve our existing transit system Ensuring that the existing transportation system is	**Consistent** The project site is located in an area surrounded by existing

Goal RS-2	Project Consistency
operating efficiently is critical for the success of HQTAs, Livable Corridors, and other land use strategies outlined in the 2016 RTP/SCS.	development. The proposed project would be infill development near existing transit roadways; however, construction is not expected to result in temporary roadblocks.
Transit Initiatives	
Develop first-mile/last-mile strategies on a local level to provide an incentive for making trips by transit, bicycling, walking, or neighborhood electric vehicle or other ZEV options.	**Consistent** The proposed project would be located approximately 0.4 mile west of a bus stop and would include bicycle parking, which would incentivize greater use of alternative transportation to access public transit.
Other Initiatives	
Reduce emissions resulting from a project through implementation of project features, project design, or other measures. Incorporate design measures to reduce energy consumption and increase use of renewable energy.	**Consistent** The design and implementation of the proposed project would comply with CALGreen Building Standards, which includes measures to reduce emissions. The proposed project would also include parking for clean air vehicles as well as several racks of bicycle parking. The project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/ L.

Source: SCAG, RTP/SCS, 2016.

The project would be constructed in accordance with the California Green Business Standards, which require energy efficiency, water efficiency, and material conservation and resource efficiency. The project proposed project would include bicycle parking to support an alternative means of transportation to the project site. The project would also include landscaped areas open to all patrons of the Buddhist Temple and would reduce trips to parks in the vicinity.

The project would be consistent with applicable land use and zoning designations upon approval of the proposed General Plan amendment to change the project site from Commercial to Institutional, and zone change to change the zoning designation from Neighborhood Commercial to Institutional-Private. The project would not conflict with any State regulations intended to reduce GHG emissions statewide, and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the project would not conflict with any plan, policy, or legislation related to GHG emissions and impacts would be less than significant.

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8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area	☐	☐	☐	■
f. For a project near a private airstrip, would it result in a safety hazard for people residing or working in the project area	☐	☐	☐	■
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	☐	☐	■	☐
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands	☐	☐	■	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
are adjacent to urbanized areas or where residences are intermixed with wildlands				

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

LESS THAN SIGNIFICANT IMPACT

The project site is currently occupied by the Buddhist Temple and does not use, dispose of, or transport hazardous materials. The project would include demolition of the existing one-story dormitory building originally built between 1946 and 1959, and the one-story meeting hall built between1980 and 1989. The Occupational Safety and Health Administration (OSHA) identify structures built before 1981 as potential asbestos hazards and structures built in the mid-1980s as potential hazards for lead-based paint. Based on the date of construction, there would be no impacts associated with asbestos and lead-based paint associated with the meeting hall. The age of the dormitory building indicates that there is the potential for asbestos and or lead. The applicant would be required, before obtaining a demolition permit, to have the buildings evaluated for asbestos and lead paint. If the buildings are found to contain such materials, the applicant must provide proof of the SCAQMD's acceptance of notification Form 1403, as required by SCAQMD Rule 1403. Demolition permits may then be issued upon submittal of an asbestos abatement completion certificate by qualified contractors. Lead-based materials exposure is regulated by CalOSHA regulations. The California Code of Regulations, §1532.1, requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed CalOSHA standards. Compliance with the above regulations relating to asbestos and lead would reduce impacts to less than significant levels.

The project involves construction of new buildings and structures, which would include a Buddha Hall, meditation area, kitchen and restrooms, classroom/office building, and dormitory for temple expansion. The project site would also be landscaped around the exterior as well as throughout the site to include ornamental trees. Operation of the project would not involve regular handling or storage of large quantities of hazardous materials. Therefore, the proposed project would not create a significant hazard to the public or environment through the routine handling of hazardous materials.

Potentially hazardous materials such as fuels, lubricants, and solvents would be used by heavy machinery during construction of the project. However, the transport, use, and storage of hazardous materials during construction of the project would be conducted in accordance with all applicable state and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation and Recovery Act, the California Hazardous Material Management Act, and the California Code of Regulations, Title 22. The project would not release hazardous materials into the environment as a result of the operational land use. However in the event of an unanticipated spill or related accident during the construction of the project, the applicant and any contractors would

be required to comply with applicable local, state, and federal laws for responding to spills or handling potentially hazardous materials. Adherence to these requirements would reduce impacts to a less than significant level.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

NO IMPACT

The school nearest to the project site is the Loving Savior of the Hills, located approximately 0.35 mile east of the site. In addition, the proposed project would not involve the use of large quantities of hazardous materials. Therefore, no schools would be exposed to hazardous materials, substances, or waste during construction or operation of the proposed project, and there would be no impact.

d. Would the project be located on a site included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

NO IMPACT

The following databases and listings compiled pursuant to Government Code Section 65962.5 were checked for known hazardous materials contamination at the project site:

- United States Environmental Protection Agency (U.S. EPA)
  - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) / Superfund Enterprise Management System (SEMS) / Envirofacts database search
- State Water Resources Control Board (SWRCB)
  - GeoTracker search for leaking underground storage tanks (LUST) and other cleanup sites
- Department of Toxic Substances Control (DTSC)
  - Envirostor database for hazardous waste facilities or known contamination sites
  - Cortese list of Hazardous Waste and Substances Sites

The project site is not located on or adjacent to any known hazardous or contaminated sites. The EPA is retiring the CERCLIS database and is replacing it with SEMS. The SEMS database search did not produce any results associated with the project site, indicating that the site is free of known hazards and contaminants (U.S. EPA, SEMS Search, 2017). A search of the Envirostor database did not identify any hazardous waste facilities or other cleanup sites within one mile of the project site. The Envirostor listing nearest to the site is approximately 2.5 miles southeast at Bird Farm Elementary School for possible agricultural contamination; however, a “no further action” determination was approved by the DTSC in 2001. (DTSC, Envirostor Database, 2007a). In addition, there are no hazardous waste and substance sites in the City of Chino Hills according to the Cortese list (DTSC, Cortese List, 2007b). According to GeoTracker, there is one LUST cleanup site approximately 215 feet north of the project site listed for potential contamination from diesel in the soil; however, the case was closed as of November 1994 and no leaks have since been reported (SWRCB, GeoTracker Database, 2015). Therefore, given the results of the database searches, there would be no impact related to hazardous material sites.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f. For a project near a private airstrip, would it result in a safety hazard for people residing or working in the project area?

NO IMPACT

The project site is not located within two miles of a public airport. The airport nearest to the project site is the Chino Airport in the City of Chino, located approximately 5.5 miles east of the site. The project site is not located within an Airport Safety Impact Area or Referral Area designated by the City of Chino's Airport Comprehensive Land Use Plan (ACLUP) for the Chino Airport. The ACLUP identifies three Referral Areas (A, B and C) which are designated areas consisting of various noise, safety and height restriction impacts, grouped together by the level of intensity of the associated impacts (San Bernardino County, Chino Airport Comprehensive Land Use Plan, 1991). As the project site is not within the boundaries of the Referral Areas, these restrictions do not apply. In addition, there are no private airstrips in the vicinity of the project site and the site is not located within a designated airport hazard area. Therefore, the project would not result in safety hazards related to airports for people residing or working at the project site and its vicinity. No impact would occur.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

LESS THAN SIGNIFICANT IMPACT

No roads would be permanently closed as a result of the construction or operation of the project, and the project would not involve the development of structures that could potentially impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Implementation of the proposed project would not interfere with existing emergency evacuation plans or emergency response plans in the area. The project would include two driveways along Rustic Drive that would provide sufficient ingress/egress for the standard vehicles that would frequent the project site.

In addition, the Chino Valley Independent Fire District (CVIFD) works in conjunction with the Cities of Chino, Chino Hills, and the San Bernardino County Building and Planning Department for all new construction and tenant improvements in the Chino Valley. Plans are required for all new buildings and for changes to existing buildings in the Chino Valley. The CVIFD reviews these plans to ensure compliance with state and local codes, as they pertain to fire and life safety. As such, implementation of the proposed project would not interfere with existing emergency evacuation plans or emergency response plans in the area. Therefore, impacts would be less than significant.

h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

LESS THAN SIGNIFICANT IMPACT

The project site is within a Non-Very High Fire Severity Zone as designated by Cal FIRE and within a No Hazard Zone for wildfires as designated by the City of Chino Hills General Plan Safety Element (Cal Fire, Very High Fire Hazard Severity Zones in LRA, 2008; Chino Hills, General Plan, 2016b). The open space area south of the project site is designated as a Fire Hazard District; however, the CVIFD would review site plans to ensure compliance with state and local codes, as they pertain to fire and

life safety. As the fire authority within the City, the CVIFD also provides fire suppression, fire prevention, and paramedic services to the area. The fire station nearest to the project site is Station 61 located approximately 1.5 miles north of the project site at 13707 Peyton Avenue. Therefore, potential impacts associated with exposing people or structures to a significant risk of loss, injury or death involving wildland fires would be less than significant.

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9 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Violate any water quality standards or waste discharge requirements	☐	☐	■	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	■	☐
d. Substantially alter the existing drainage pattern of the site or area, including the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite	☐	☐	■	☐
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff	☐	☐	■	☐
f. Otherwise substantially degrade water quality	☐	☐	■	☐
g. Place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map	☐	☐	☐	■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
h. Place structures in a 100-year flood hazard area that would impede or redirect flood flows	☐	☐	☐	■
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including that occurring as a result of the failure of a levee or dam	☐	☐	☐	■
j. Result in inundation by seiche, tsunami, or mudflow	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements?

e. Would the project create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

f. Would the project otherwise substantially degrade water quality?

LESS THAN SIGNIFICANT IMPACT

The project site is developed with several existing buildings and structures associated with its current use as a Buddhist Temple. The project would introduce new hardscape surfaces associated with the new temple and its associated facilities and parking areas. Per Chapter 13.16.200 of the CHMC, any construction in the City shall, whenever possible, provide filter materials at the catch basin to retain any debris and dirt flowing into the storm water system to control the volume and rate of storm water runoff from new developments and minimize the discharge and transport of non-storm water. The CHMC also includes a Landscape Ordinance, listed in Title 16, Chapter 7, which applies to any new construction for discretionary private development projects with a net landscape area of at least 2,500 square feet. Pursuant to CHMC Chapter 16.07.050, "all irrigation systems shall be designed to prevent runoff, over-spray, low head drainage and other similar conditions." In addition, CHMC Chapter 16.07.100 recommends on-site storm water management practices "to minimize runoff and water waste to recharge groundwater, and to improve water quality." In addition, the applicant would be responsible for implementing Best Management Practices (BMPs) to reduce water quality impacts.

The proposed project would involve the expansion of developed and impervious areas (i.e. temple structures and parking lots). However, proposed landscaping would make up approximately 39% of the project site, with additional proposed landscaped pockets within the parking lots, which would allow movement of storm water through the surface and add to groundwater recharge. Therefore, the project would not significantly contribute to surface runoff. In addition the proposed project would also include a detention basin located in the northeast portion of the site, adjacent to Little Chino Creek, which would further manage excess urban runoff and downstream erosion by storing water for a limited period of time. Therefore, impacts would be less than significant.

b. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

LESS THAN SIGNIFICANT IMPACT

As discussed in Section 18, *Utilities and Service Systems*, the project would result in a net increase in water demand estimated at approximately 2,782 gallons per day (gpd), or 3.1 acre feet per year (AFY). The City's water supply is derived from imported water, local groundwaer, local surface water, and recycled water. Imported water from the Water Facilities Authority and Metropolitan Water District of Southern California comprised 64% of the water supply, in addition to 17% as desalted groundwater from the Chino Basin Desalter Authority, 10% as groundwater from local wells, and approximately 8% as recycled water from the Inland Empire Utilities Agency (IEUA). The project would be served by an available water supply and would be consistent with the Urban Water Management Plan (UWMP). Therefore, the proposed project would not result in an exceedance of safe yield or a significant depletion of groundwater supplies. In addition, although the proposed project would involve the expansion of developed areas (i.e., temple structures and parking lots), approximately 39% of the project area would be landscaped with lawns and gardens, which would allow infiltration of storm water and aid in groundwater recharge. Impacts related to groundwater would be less than significant.

c. Would the project substantially alter the existing drainage pattern of the site or area, including by altering the course of a stream or river, in a manner that would result in substantial erosion or siltation on or offsite?

d. Would the project substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite?

LESS THAN SIGNIFICANT IMPACT

The project would not alter the course of any stream or other drainage and would not increase the potential for flooding. The proposed project would require connections to the City's storm drain system to provide adequate drainage. As discussed above, adherence to the City's urban runoff programs would reduce the quantity and level of pollutants within runoff leaving the site. In addition, the project would maintain consistency with CHMC Chapter 16.54.060, Runoff Control. The project would also include pervious pavement and infiltration areas which would allow the movement of storm water through the surface. In addition to reducing runoff, pervious pavers trap suspended solids and filters pollutants from the water. Therefore, impacts related to erosion, siltation, and flooding would be less than significant.

g. Would the project place housing in a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary, Flood Insurance Rate Map, or other flood hazard delineation map?

h. Would the project place in a 100-year flood hazard area structures that would impede or redirect flood flows?

NO IMPACT

According to Federal Emergency Management Agency (FEMA) Flood hazard Boundary of Flood Insurance Rate Map, the project site is not located within a 100-year flood zone. The project site is

located in Zone X, an area of minimal flood hazard potential (FEMA, FIRM #06071C9330H, 2008). Because the project would not be located within a 100-year flood hazard area, development of the proposed project would not expose people or structures to significant flood hazards and would not impede or redirect flood flows.

i. Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding including that occurs as a result of the failure of a levee or dam?

NO IMPACT

A provisionally accredited levee (PAL), the Chino Creek 1 Levee system, is located approximately 2.75 miles southeast of the project site and is owned and operated by the United States Army Corps of Engineers (USACE, Chino Creek I Levee System, 2012). As defined by FEMA, a provisionally accredited levee is a levee shown on the Digital Flood Insurance Rate Maps ("DFIRMS) as providing protection from a 100-year storm event, but all the documentation necessary to gain full accreditation is not yet readily available. To assist owners who cannot provide FEMA with the documentation, including the required professional engineer-certified data and/or documentation to show the levee continues to provide protection from at least the base flood (100-year), FEMA established the PAL designation to facilitate the levee accreditation process (FEMA, FEMA Provisionally Accredited Levees Brochure, 2012).

The PAL levee is across SR-71, southeast of the project site. The levee allows road transportation across the Chino Creek, connecting the City of Chino Hills and the City of Chino. This PAL provides protection from the 1%- annual-chance flood. To maintain accreditation, the levee owner (i.e., the USACE) is required to submit documentation necessary to comply with 44 CFR Section 65.10. Due to this this accreditation requirement and the distance from the levee, there would be no impact to the project site associated with the potential for flooding due to dam failure.

j. Would the project result in inundation by seiche, tsunami, or mudflow?

LESS THAN SIGNIFICANT IMPACT

A seiche is a standing wave in an enclosed or partially enclosed body of water. The project site is not located near any lakes or other major bodies of surface water; therefore, impacts from seiches are not expected. The project site is located approximately 28 miles from the Pacific Ocean and would not be inundated by a tsunami (CEMA, Tsunami Inundation Map for Emergency Planning, 2009). Lastly, the project site is relatively flat with a general slope gently descending toward the Chino Creek Channel. Currently, the grounds surrounding the existing buildings and structures on the project site consist of paved driveways and parking lots surrounded by landscaped lawns and gardens. The areas of the project site that are not dominated by development or ornamental landscaping consist of bare dirt with gravel and sparse vegetation. As such, there would be a potential for saturated grounds in these undeveloped areas during heavy storm events, although mudflows would be unlikely. Regardless, the proposed temple expansion would include the extension of paved parking areas and landscaping, which would minimize the undeveloped areas consisting of bare dirt with gravel and sparse vegetation. Therefore, any potential impacts from mudflows would be further reduced by the extension of development on the project site and impacts would be less than significant.

10 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts?				
a. Physically divide an established community	☐	☐	☐	■
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect	☐	☐	■	☐
c. Conflict with an applicable habitat conservation plan or natural community conservation plan	☐	☐	☐	■

a. Would the project physically divide an established community?

NO IMPACT

Based on County property information, the project site was owned by the Chino Hills Baptist Church starting in 1986 (San Bernardino County, 2017). Based on aerial photographs, the project site has been developed and utilized as a Buddhist Temple since at least 2002. As such, the project site has been in use as a religious facility for 30 years. The project would be consistent with the existing use of the site and would not create substantial conflicts with surrounding land uses, which consist of residential uses to the west, north, and east, since it would not introduce new land uses to the site. No new through streets are proposed and all of the project components, including a Buddha Hall, meditation area, classroom/office (multi-purpose) building, and dormitory, would be located within the parcel. Therefore, the project would not divide an established community and there would be no impact.

b. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

LESS THAN SIGNIFICANT IMPACT

The applicant is requesting the approval of a General Plan Amendment 13GPA01 to change the project site on the General Plan Land Use Map from Commercial to Institutional; Zone Change 13ZC01 to change the zoning designation from Neighborhood Commercial (C-N) to Institutional-Private (I-1); Conditional Use Permit 13CUP08 to establish a religious institution; Tentative Parcel Map 19377 to combine three existing parcels into one parcel; and a Site plan review 13SPR01 for

developing a new Buddhist Temple. Per CHMC 16.68.050, the basis for approval of a CUP considers the following principles and standards:

A. That the proposed conditional use is consistent with the General Plan;

B. That the nature, condition, and development of adjacent uses, buildings, and structures have been considered, and that the use will not adversely affect or be materially detrimental to these adjacent uses, buildings, or structures;

C. That the site for the proposed conditional use is of adequate size and shape to accommodate the use and buildings proposed;

D. That the proposed conditional use complies with all applicable development standards of the zoning district; and

E. That the proposed conditional use observes the spirit and intent of this Development Code.

The proposed temple expansion would be an institutional religion use on a site currently designated as Commercial by the General Plan. However, the project site has been developed and utilized as a Buddhist Temple since at least 2002 with a dormitory and meeting hall. Therefore, development of the proposed project would not be out of character when compared to the nature of the existing buildings, structures, and activity on the project site. Since the project is an infill development, all proposed buildings and amenities would be accommodated on-site (see the site plans provided in Appendix A). In addition, the proposed project would not have a detrimental effect on adjacent sensitive uses (i.e., residential development to the west, north and east, south, and east) because the proposed uses on the project site are similar to the exiting land uses as a Buddhist Temple.. As discussed in Section 1, *Aesthetics*, the height and nature of the proposed project would obstruct scenic views of prominent and exceptionally prominent ridgelines. In addition, as discussed in Section 3, *Air Quality*; Section 7, *Greenhouse Gas Emissions*; Section 12, *Noise*, and Section 16, *Transportation*, the project would not conflict with City or regional policies and would not exceed applicable thresholds related to these environmental issues. Upon site plan review and approval of the proposed discretionary actions, the project would not conflict with any applicable land use plan, policy or regulation. Impacts would be less than significant.

c. Would the project conflict with an applicable habitat conservation plan or natural community conservation plan?

NO IMPACT

As discussed in Section IV, *Biological Resources*, the project site is not located within the jurisdiction of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

11 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project have any of the following impacts:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

NO IMPACT

No significant mineral deposits are known to be present in the City of Chino Hills (Chino Hills, General Plan, 2015b). Although minor oil production occurs in the Chino-Soquel Oil Field and the Mahala Oil Field, the existing oil fields are within undeveloped land designated at "Agricultural/Ranches" in the southeastern portion of the city. The "Agricultural/Ranches" zoning conditionally permits oil exploration and drilling. There are no active wells in proximity to the project site. In addition, the project site is not suited for resource extraction given that it is adjacent to residential development and public open space. The project would have no impact related to the loss of availability of a known regional or local mineral resource.

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12 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	☐	☐	■	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels	☐	☐	■	☐
c. A substantial permanent increase in ambient noise levels above those existing prior to implementation of the project	☐	☐	■	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above those existing prior to implementation of the project	☐	☐	■	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels	☐	☐	☐	■
f. For a project near a private airstrip, would it expose people residing or working in the project area to excessive noise	☐	☐	☐	■

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). Because of the way the human ear works, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as construction equipment). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance; while noise from a point source typically attenuates at about 6 dBA per doubling of distance. Noise levels may also be reduced by the introduction of intervening structures. For example, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm that breaks the line-of-sight reduces noise levels by 5 to 10 dBA. The construction style for dwelling units in California generally provides a reduction of exterior-to-interior noise levels of about 30 dBA with closed windows (Federal Highway Administration [FHWA], FHWA Highway Construction Noise Handbook, 2006).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq to Ldn. However, in urban areas near heavy traffic, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn. In less heavily developed areas, such as suburban areas, the peak hourly Leq is often roughly equal to the daily Ldn. For rural areas with little nighttime traffic, the peak hourly Leq will often be 3-4 dBA greater than the daily Ldn value (SWRCB, Appendix G: Background Information on Acoustics, 1999). The project site is located in a suburban area; therefore, the peak hourly Leq at the project site is approximately equivalent to the daily Ldn value.

Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas 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 passing trucks. 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. 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.

Project Site Noise Conditions

The most common and primary sources of noise in the project site vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles) along Carbon Canyon Road and Chino Hills Parkway. Additional vehicle traffic is present on adjacent residential roadways (e.g., Champion Street), but is substantially lower than traffic along Carbon Canyon Road and Chino Hills Parkway. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. Additional sources of noise in the project site vicinity include activities associated with nearby residential uses, including delivery trucks and landscaping equipment. Existing noise on the project site includes noise from current operation of the Buddhist Temple, which has a maximum of 80 attendees on Sundays and a dormitory that houses four monks full time on the site.

In order to determine existing noise levels on the project site, four peak hour weekday evening 15-minute noise measurements (Leq[15] dBA) were taken on and near the project site using an ANSI Type II integrating sound level meter on January 27, 2017. Figure 8 shows the locations of noise measurements. These noise measurements provide existing sound levels, which are primarily due to roadway noise from Chino Hills Parkway and Carbon Canyon Road. The noise monitoring results are summarized in Table 10. The Leq[15] dBA ranged from 70.0 dBA at Noise Measurement Locations 2 and 4 on Chino Hills Parkway to 55.9 Leq[15] dBA at Noise Measurement Location 3 on the project site.

Table 10 Project Vicinity Noise Monitoring Results – PM Peak Hour

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	Leq[15] (dBA)[1]	Lmin (dBA)	Lmax (dBA)
1	Rustic Drive	6:03 PM – 6:18 PM	20 feet[2]	56.4	47.8	72.5
2	Chino Hills Parkway at Buddhist Temple	5:41 PM – 5:56 PM	50 feet[3]	70.0	56.3	84.5
3	Buddhist Temple Site	6:29 PM – 6:44 PM	320 feet[3]	55.9	46.4	67.4
4	Chino Hills Parkway east of Buddhist Temple	5:19 PM – 5:34 AM	45 feet[3]	70.0	48.2	90.6

See **Error! Reference source not found.** 7 for a map of Noise Measurement Locations

[1] The equivalent noise level (Leq) is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). For this measurement, the Leq was over a 15-minute period (Leq[15]).

[2]Distance to centerline of Rustic Drive.

[3]Distance to centerline of Chino Hills Parkway.

Source: Rincon Consultants, field measurements on January 27, 2017 using ANSI Type II Integrating sound level meter.

Figure 8 Noise Measurement Locations

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Typically, noise sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries, and school classroom areas. The predominant noise sensitive land uses in the City are residential uses.

Noise-sensitive receptors closest to the project site include existing multi-family residential development approximately 50 feet east of the project site. Additional single-family residences are located approximately 100 feet to the west across Rustic Drive and 165 feet to the north across the stormwater channel. The new dormitory and the redeveloped temple would be additional noise-sensitive receptors.

Noise Regulation

The Chino Hills General Plan, adopted in February 2015, provides standards for exterior and interior ambient noise levels. In accordance with mandatory guidelines from the State Department of Housing and Community Development, the General Plan states that residential land uses cannot be exposed to outdoor ambient noise levels in excess of 65 dBA CNEL and sufficient insulation must be provided to reduce exterior ambient noise levels to 45 dBA CNEL within interior spaces. Public institutions, such as churches, do not have an exterior ambient noise threshold, however public institutional land uses cannot be exposed to interior noise levels in excess of 45 dBA CNEL. Chapter 16.48.020 of the CHMC restates that the noise standards contained in Table N-1 “Noise/Land Use Compatibility Matrix” in the Noise Element of the General Plan apply to land uses citywide and are to be used to define acceptable and unacceptable noise levels. The proposed project would have a significant impact if it would expose proposed sensitive receptors to noise levels in excess of these standards, which are shown in Table 11.

Table 11 City of Chino Hills Interior/Exterior Noise Standards

Land Use	Maximum Interior Noise Level (dBA CNEL)	Maximum Exterior Noise Level (dBA CNEL)
Residential: Duplex, Single-Family, and Multi-Family	45	65
Mobile Homes	--	65
Commercial		
Hotel, Motel, Transient Lodging Commercial, Retail, Bank, Restaurant, Health Club	45 55	65
Office Building, Research and Development, Professional Offices	50	--
Amphitheater, Concert Hall, Auditorium, Meeting Hall, Movie Theater	45	--
Gymnasium	50	--
Manufacturing, Warehousing, Wholesale, Utilities	65	--
Open Space		
Parks	--	65
Institutional/Public Facility		

Land Use	Maximum Interior Noise Level (dBA CNEL)	Maximum Exterior Noise Level (dBA CNEL)
Hospital, Schools, Classrooms	45	65
Churches, Libraries	45	--

Source: Chino Hills, General Plan, 2015b.

Methodology

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with operation of the project. As discussed above, ambient noise levels at and near the project site were measured for this analysis. Four noise measurements were collected during the PM peak hour. As shown in Table 10, ambient noise in the project area ranged from 55.9 dBA Leq at the eastern portion of the project site to 70.0 dBA Leq along Chino Hills Parkway. As described above, CNEL is approximately equivalent to hourly Leq values in suburban areas. Therefore, the exterior CNEL in the vicinity of the project site ranges from 55.9 dBA to 70 dBA.

Construction of the proposed project could potentially generate construction noise and vibration impacts at nearby sensitive receptors. Construction noise estimates are based upon noise levels reported by the Federal Transit Administration (FTA), Office of Planning and Environment (FTA, Transit Noise and Vibration Impact Assessment, 2006), the distance between construction activity and nearby sensitive receptors, and the equipment to be used during each phase of construction. Equipment used during construction was obtained from the California Emissions Estimator Model (CalEEMod) run prepared for the project. Reference noise levels from the FTA were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Ground absorption adds to the attenuation from distance alone. Excess ground attenuation may vary from zero to ten dBA per doubling of distance, depending on the complexity of terrain (Caltrans, Technical Noise Supplement to the Traffic Noise Analysis Protocol, 2013). Generally, hard, reflective surfaces like parking lots or smooth bodies of water will not substantially increase the attenuation rate from distance alone; whereas, soft, absorptive surfaces like soft dirt, grass, or scattered bushes and trees would increase attenuate from distance alone by 1.5 dBA per doubling of distance. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of distance. Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative estimate of actual construction noise.

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. The vibration thresholds established by the Federal Transit Administration (FTA) are 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). The following thresholds are used for this analysis:

- 72 VdB for residences
- 95 VdB for extremely fragile historic buildings

- 100 VdB for fragile buildings

The City has not adopted specific standards or limits related to construction noise or vibration. The City's noise ordinance (CHMC Section 8.08.020) provides an exception to City noise and vibrations standards for construction provided that such activities take place between 7:00 a.m. and 7:00 p.m. on weekdays, and between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays, excluding federal holidays, unless such activity is necessary for the immediate preservation of life, health, or property (Chino Hills, Municipal Code, 2015a). Construction noise and vibration would be considered significant if it occurred outside of the specified hours.

Noise levels associated with existing and future traffic along area roadways were estimated using the U.S. Department of Transportation Federal Highway Administration's (FHWA) Traffic Noise Model 2.5 (TNM2.5) (FHWA, Traffic Model User's Guide, 2004) (noise model data is provided within Appendix D). The analysis of anticipated noise levels from traffic generated by the project uses data from the traffic study prepared for the project by Linscott, Law, & Greenspan, Engineers (LLG, Traffic Impact Analysis, 2017).

This analysis uses recommendations contained in the FTA's Transit Noise and Vibration Impact Assessment (2006) as guidance to determine whether or not a change in traffic would result in a substantial permanent increase in roadway noise. Using these criteria, the allowable noise exposure increase is based on the existing ambient noise level. Roadways with lower ambient noise levels have a higher allowable increase, while roadways with a higher ambient noise level are allowed a lower noise increase. Traffic-related noise increases would constitute a significant impact if roadway noise levels would increase by more than the levels indicated in Table 12.

Table 12 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Significant Noise Exposure Increase (dBA Ldn or Leq)
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

Source: Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment, 2006.

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

LESS THAN SIGNIFICANT

As shown in Table 10 the existing noise level on the project site is 55.9 dBA Leq in the eastern portion of the site (Measurement Location 3) and 56 dBA Leq at the western edge of the project site adjacent to Rustic Drive (Measurement Location 2). As discussed above in a suburban setting, peak hourly Leq is typically equivalent to the daily CNEL. Therefore, exterior noise levels on the project site range from 55.9 to 70 dBA CNEL. Currently, there are no bells or chimes on the project site.

Operation of the proposed buildings would not add new noise sources (e.g. chiming bells) to the project site compared to existing uses. Exterior noise levels for the dormitory to be constructed on the project site would be below the City's exterior noise threshold of 65 dBA CNEL. There are no City exterior noise standards for places of worship.

The manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FTA, Transit Noise and Vibration Impact Assessment, 2006). For example, a unit exposed to exterior noise levels of 65 dBA would be 40 dBA indoors with the windows shut. As shown in Table 10, exterior noise levels could reach 55.9 dBA CNEL on the project site (Measurement Location 3) since the project site is in a suburban area and peak hourly Leq is equivalent to the daily CNEL (SWRCB, Appendix C: Background Information on Acoustics, 1999). Based on an estimate for noise reduction in interior spaces of approximately 25 dBA, interior noise levels would be approximately 30.9 dBA CNEL. Therefore, on-site residents and the remodeled temple at the project site would not be exposed to interior noise levels in excess of the City's 45 dBA CNEL interior noise standard for residences and places of worship. Potential impacts would be less than significant.

b. Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

LESS THAN SIGNIFICANT

Construction of the proposed project could potentially increase groundborne vibration on the project site, but construction effects would be temporary, occurring in three phases from 2018 to 2023. The nearest sensitive receptors are residences approximately 50 feet east of the project site. As shown in Table 13, these residences would be exposed to maximum vibration levels of approximately 81 Vdb or 0.031 PPV from construction of the proposed project because vibration, like noise, attenuates over distance. For a conservative vibration estimate, it is assumed that a backhoe has vibration levels similar to those of a small bulldozer, paving equipment has vibration levels similar to those of a large bulldozer, and that loaded trucks and a jackhammer would be used on the project site during construction.

Table 13 Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB at Nearest Sensitive Receptors 50 Feet	Approximate inches per second (PPV) at Nearest Sensitive Receptors 50 feet
Large Bulldozer	81	0.031
Loaded Trucks	80	0.027
Jackhammer	68	0.012
Small Bulldozer	52	0.001

Source: FTA, Transit Noise and Vibration Impact Assessment, 2006.

As discussed above, 0.20 inches per second at or beyond the lot line is the City's vibration threshold. During project construction the vibration levels at residences to the east would not exceed the groundborne velocity threshold level of 0.2 inches per second. In addition, the City of Chino Hills exempts vibration associated with construction activities between the hours of 7:00 AM and 7:00 PM during weekdays and 8:00 AM and 6:00 PM on Saturdays (CHMC, Section 8.08.020). The

proposed project would be required to comply with these construction hour restrictions and construction would not occur during recognized sleep hours for residences or on Sundays when temple attendees visit the project site. Construction vibration impacts would be less than significant.

c. Result in a substantial permanent increase in ambient noise levels above levels existing without the project?

LESS THAN SIGNIFICANT

The proposed project would intensify the project site by increasing the size of the temple and dormitory, and adding additional site features. Existing sensitive uses near the project site may periodically be subject to noise associated with operation of the proposed project, including delivery trucks, HVAC systems, increased site use and other general activities.

Direct Operational Noise Impacts

Buddhist Temple Attendance

The Buddhist Temple currently supports 15 to 20 members per day at the temple from Monday to Saturday and 60 to 80 members on Sunday. When the final project phase is finished 50 to 60 members per day would be present from Monday to Saturday and 100 to 110 members would be present on Sunday. Assuming that all members would be on site at once and that the maximum number of members are present, peak activity at the project site would increase by 30 to 45members per day on Monday through Saturday and 20 to 50members on Sunday.

Ambient noise in the project vicinity was measured at 55.9 dBA Leq at the eastern portion of the site and 70 dBA Leq along Chino Hills Parkway (Table 10). The major source of noise in the project site vicinity is traffic noise. This is demonstrated in Table 4, which shows that modeled ambient noise levels, which include only roadway sources, are consistent with the measured ambient noise levels taken in the vicinity of the project site.

The increased attendance of 30 to 45 members on Monday to Saturday and 20 to 50 members on Sunday would result in additional parking lot-related noise. Parking lot related noise would be temporary and intermittent, occurring only when drivers enter and leave the facility and attendees walk from the parking area to the temple. The majority of on-site noise associated with increased attendance would be captured within the temple building and would not affect ambient noise. Table 14 lists noise levels associated with typical activities in parking lots, including talking, driving cars, door slamming, and engine start up. As shown in Table 14, the maximum noise level generated from a parking lot is from car horns and alarms, which generate noise estimated at 69 dBA at a distance of 50 feet, and tire squeals, which generate an estimated 66 dBA at a distance of 50 feet. These sources of parking lot noise are intermittent and spontaneous and while increased attendance would incrementally increase the frequency of such events, these sources would not substantially affect overall ambient noise levels. More typical parking lot noise ranges from 36 dBA Lmax at 50 feet from people talking to 50 dBA Lmax at 50 feet from vehicles traveling on-site. While the project would increase the frequency of conversations and vehicles traveling on-site, noise associated with these sources is lower than ambient noise in the project site vicinity, which ranges from 56 and 70 dBA Leq and is dominated by roadway noise sources. The additional noise sources from increased attendance would add incremental noise and would not double existing noise at the project site. Therefore, increased noise would be less than 3 dBA and imperceptible. Impacts from increased attendance would not have a substantial impact.

Buddhist Temple Events

The Buddhist Temple hosts the following ten special events and two major events:

- New Year Day, January 1
- Makhapuja's Day
- Memorial Ceremony
- Songkarn Festival (major event)
- Visakha Puja's Day
- Anniversary Temple's Celebration
- Asalha Puja Day
- Thai Mother's Day
- Sart Thai's Day
- Rain-Reseat End Day
- Kathina and Loy Dathong Day (major event)
- Thai Father's Day

During special events attendance at the temple would increase by 50 members per day. Such events are anticipated to occur about ten times per year. During major events, the most widely attended holidays of Songkarn Festival Day and Kathina and Loy Kathong, attendance would increase by 150 members per day twice per year. As discussed above, ambient noise levels on the project site are mainly attributed to vehicle traffic and were measured at between 56 dBA and 70 dBA Leq. An increase in attendance during events would result in a noise increase associated with additional people on the project site and consists of conversations and vehicles entering and exiting the property.

An increase of 50 attendees during special events ten times per year and 150 attendees twice per year during major events would result in increased parking lot-related noise on the project site, including vehicles entering and exiting the property. Parking lot-related noise would be temporary and intermittent occurring only when attendees walk from the parking area to the temple. Table 14 lists noise levels associated with typical activities on parking lots, including talking, driving cars, door slamming, and engine start up. As shown in Table 14, the maximum noise level generated from a parking lot is from car horns and alarms estimated at 69 dBA at a distance of 50 feet and tire squeals at 66 dBA at a distance of 50 feet; these sources of parking lot noise are intermittent and spontaneous and while increased attendance at the Buddhist Temple during special and major events would increase the number of visitors on-site, overall existing ambient noise levels would not be affected. More typical parking lot noise ranges from 36 dBA Lmax at 50 feet from people talking to 50 dBA Lmax at 50 feet from vehicles traveling on-site. While the project would increase the frequency of conversations during events (36 dBA Lmax at 50 feet) and vehicles traveling on-site (50 dBA Lmax), these sources of noise are lower than the existing ambient noise in the project vicinity, which ranges from 56 and 70 dBA Leq and is dominated by roadway noise sources. The additional noise sources from increased attendance would add incremental noise and would not double existing noise at the project site. Therefore, increased noise would be less than 3 dBA and imperceptible.

During festivals, attendees could be outside of the Buddhist Temple on project site. Noise from increased conversations during a wedding event was determined to be minimal in a Noise Study for an outdoor wedding event at the Tropical Paradise in Los Angeles County (Rincon Consultants, Noise Study for a Wedding Event at the Tropical Paradise Site Located at 10350 Santa Rosa Road, Ventura County California, 2013). Similar to the project site, ambient noise at the site of the wedding event was dominated by traffic noise. The study concluded that noise from the outdoor wedding event was minimal and intermittently audible from 145 to 940 feet from the event and not audible at other measurement locations from 80 to 3,270 feet; therefore, the wedding event did not materially contribute to ambient noise. Noise from additional attendance at events at the project site would minimally increase ambient noise levels. Events currently occur at the project site and

conservatively assuming that all attendees would be outside at once the addition of 50 to 150 attendees would not result in a perceptible increase in noise.

The loudest noise during events at the Buddhist Temple is from amplifiers. Amplifiers are currently used during major and special events at the project site. Rincon Consultants conducted three field measurements in Ventura County on September 6, 2016 using an ANSI Type-2 Integrating sound level meter to measure amplifier noise (see Appendix C for noise data). The noise level at 75% volume 100 feet from the source was 52.8 dBA Leq, which was 0.8 dBA higher than the ambient noise level. The noise level at 90% volume 100 feet from the source was 58.9 and increased ambient noise level by 6.9 dBA. Amplifiers for the proposed project would continue to be used at the same level and frequency following completion of the proposed site improvements because additional attendance would not require increased amplification. Because amplifiers are the loudest noise source during events, and the noise associated with amplifiers would not increase as part of attendee increase, a substantial increase in ambient noise would not occur. Conversational noise and parking lot noise would be minimal in imperceptible as a result of increased attendance. Therefore, potential noise impacts from special and major events would not have a substantial impact.

Table 14 Typical Parking Lot Noise

Source	Level at 20 Feet (dBA)	Level at 50 Feet (dBA)
Autos at 14 mph	58	50
Car Alarm Signal	77	69
Car Alarm Chirp	62	54
Car Horns	77	69
Door Slams or Radios	72	64
Talking	44	36
Tire Squeals	74	66

Source: Gordon Bricken and Associates, 2012.

Estimates are based on actual noise measurements taken at various parking lots.

Ground-Mounted HVAC Equipment

Noise generated by on-site operations would include noise associated with mechanical equipment such as ventilation and heating systems mounted on the ground. Noise levels from commercial heating, ventilation and air conditioning (HVAC) equipment can reach 100 dBA Leq at a distance of three feet (U.S. EPA, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971). The HVAC units on the project site would have noise shielding screens, reducing noise to no greater than 55 dBA Leq at 50 feet from the source.

Ground-mounted equipment would be placed approximately 200 feet from residences to the east of the project site. At a distance of 200 feet noise from HVAC equipment would be 43 dBA Leq or 47.3 dBA CNEL. Existing noise levels near the sensitive receptors east of the project site are 55.9 dBA Leq or 55.9 dBA CNEL. As discussed above in a suburban setting, peak hourly Leq is typically equivalent to the daily CNEL. The addition of 47.3 dBA Leq would increase noise levels at the sensitive

receptors to 56.5 dBA Leq. This is below the City's exterior noise threshold of 65 dBA CNEL for residential land uses.

The manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FTA, Transit Noise and Vibration Impact Assessment, 2006). Based on an estimate for noise reduction in interior spaces of approximately 25 dBA, interior noise levels for residences east of the project site would be approximately 31 dBA CNEL with operation of ground-mounted HVAC systems. Therefore, residents would not be exposed to interior noise levels in excess of the City's interior noise standard, 45 dBA CNEL and impacts would be less than significant.

Farmers' Market

Currently, the farmers market occurs at the project site every Sundays from 9:00 AM to 4:00 PM. This activity would continue to occur every Sunday during operation of the proposed project. During the winter months, there are typically 3-4 vendors at the farmers market and 6-8 vendors during the summer months. Each vendor sets up temporary tables and chairs on the western portion of the project site to the south of the classroom/office building. The tables and chairs are removed from the site following the end of the farmer's market hours. This will not change as a result of project implementation.

Delivery and Trash Trucks

On-site activities would include the use of delivery trucks and trash hauling. The California Motor Vehicle Code establishes maximum sound levels for trucks operating at speeds less than 35 miles per hour (Section 23130) of 86 dBA at 50 feet. California State law prohibits trucks from idling for longer than 5 minutes. In addition, Chapter 13.20.170 of the CHMC states that the noise level for trash collection vehicles during the stationary compaction process shall not exceed 75 dBA at a distance of 25 feet from the vehicle. Delivery and trash truck trips to the site would be a periodic source of operational noise. Because trash trucks would be required to comply with the CHMC standards for trash collection vehicles, they would not substantially affect ambient noise conditions and impacts would be less than significant.

Roadway Noise Impacts

The project would generate new vehicle trips that would use area roadways. Project-generated vehicle traffic would result in a substantial impact in roadway noise levels if the noise increase would be in excess of the roadway noise increase thresholds shown in Table 12. Table 15 shows the increase in sound levels due to the project-generated traffic.

As shown in Table 15 there would be no increase in project-generated traffic noise at receptor locations 1 and 2 because of the minimal increase in traffic, 12 PM peak hour trips, associated with the proposed project (LLG, Traffic Impact Analysis, 2017).

Cumulative development in the project area in the year 2025 would increase noise levels along area roadways. Cumulative noise levels were modeled with project-generated traffic, as shown in Table 16. The cumulative plus project-generated traffic noise would increase noise between 1.3 and 1.4 dBA above existing noise levels because of increased traffic from the proposed project and other nearby projects. Noise increases at receptor locations along Chino Hills Parkway would exceed the applicable significance threshold of 1 dBA for the cumulative plus project scenario.

As shown in Table 16, the proposed project's contribution to cumulative noise impacts would be below the applicable significance thresholds. Traffic noise from the cumulative plus project scenario would be the same as in the cumulative scenario in the year 2025 because the proposed project would contribute a nominal number of vehicle trips. Therefore, although the cumulative traffic noise increase would exceed the 1 dBA significance threshold, the project's contribution would not be cumulatively considerable and impacts would be less than significant.

Table 15 Existing Noise Levels - Modeled

Receptor	Location[1]	Existing Noise Level (dBA Leq) (1)	Existing Plus Project Noise Level (dBA Leq) (2)	Project Change (2-1)	Significance Threshold	Significant ?
1	Chino Hills Parkway at Buddhist Temple	71.7	71..7	0.0	1	No
2	Chino Hills Parkway east of Buddhist Temple	70.9	70.9	0.0	1	No

Source: TNM2.5, see Appendix D for noise model outputs. Leq is the equivalent noise level over a period of time, typically one hour. Estimates of noise generated by traffic are from the centerlines of northbound/eastbound and southbound/westbound lanes on road segments during PM peak-hour traffic conditions.

[1]Noise receptor locations are shown on Figure 8 as Noise Measurement locations 2 and 4 respectively

Table 16 Cumulative 2025 Traffic Noise on Local Roadways

Sensitive Receptor	Existing Noise Level (dBA Leq) (1)	Cumulative 2025 Noise Level (dBA Leq) (2)	Cumulative 2025 Plus Project Noise Level (dBA Leq) (3)	Cumulative Increase (3-1)	Noise Due to Project Traffic Under Cumulative Conditions (3-2)	Significant?
Chino Hills Parkway at Buddhist Temple	71.7	73.0	73.0	1.3	0.0	No
Chino Hills Parkway east of Buddhist Temple	70.9	72.3	72.3	1.4	0.0	No

Source: TNM2.5, see Appendix D for noise model outputs. Leq is the equivalent noise level over a period of time, typically one hour. Estimates of noise generated by traffic are from the centerlines of northbound/eastbound and southbound/westbound lanes on road segments during PM peak-hour traffic conditions.

[1] Noise receptor locations are shown on Figure 8 as Noise Measurement locations 2 and 4 respectively

d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

LESS THAN SIGNIFICANT IMPACT

Project construction would intermittently generated high noise levels on and adjacent to the project site during the three construction phases. Construction would commence in spring of 2018 and be completed in the summer of 2023. Appendix D shows the typical peak noise levels associated with

common categories of heavy construction equipment. Noise sensitive uses closest to the project site include single-family residences located 50 feet to the east. These sensitive land uses may experience a temporary noise increase during construction activities on the project site. Table 17 shows the maximum expected noise levels at the nearest sensitive receptors for each project phase, Phases I through III, and each phase of construction.

Table 17 Construction Noise Levels by Project Phase and Construction Phase

Construction Phase	Equipment	Estimated Noise at 50 feet (dBA Leq)
Project Phase I		
Site Preparation	Backhoe, Grader, Scraper	85
Grading	Backhoe, Dozer, Grader	83
Building Construction	Backhoe, Crane, Forklift, Generator, Welder	85
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	85
Project Phase II		
Site Preparation	Backhoe, Grader	80
Grading	Backhoe, Dozer, Saw	81
Building Construction	Backhoe, Crane, Forklift	85
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	86
Project Phase III		
Demolition	Dozer, Excavator, Saw	86
Site Preparation	Backhoe, Dozer	85
Grading	Backhoe, Dozer, Excavator, Grader	85
Building Construction	Backhoe, Crane, Forklift, Generator, Welder	86
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	87

Source: See Appendix D for equipment noise impact data sheets and assumptions.

Additional factors to consider are that the estimated construction noise levels analyze a worst-case scenario and do not take into account the fact that equipment is dispersed in various areas of the site in both time and space. Due to site and equipment limitations, a limited amount of equipment can operate near a given location at a particular time. In addition, construction equipment estimates used for the analysis for demolition, grading, building construction, paving, and architectural coating noise levels are representative of worse case conditions, since it is assumed that all the equipment would operate simultaneously and continuously for at least 80% of the work

day. Therefore, the noise levels presented in Table 17 represent a conservative estimate of construction noise.

Construction would increase ambient noise levels to up to about 85 dBA Leq during the site preparation and paving phases of the first phase of project construction; up to about 86 dBA Leq during the paving phase of the second phase of project construction; and up to about 87 dBA Leq during the paving phase of the third phase of project construction. The existing dormitory would be demolished during Phase III of construction and would therefore be exposed to construction noise. Residences to the north, west, and east of the project site would also be exposed to noise exceeding ambient levels during project construction.

The City of Chino Hills exempts noise associated with construction activities between the hours of 7:00 AM and 7:00 PM during weekdays and 8:00 AM and 6:00 PM on Saturdays (CHMC, Section 8.08.020). Based on these hours, construction would not occur during recognized sleep hours for residences or on Sundays when temple attendees visit the project site. The proposed project would be required to comply with construction hour restrictions and construction noise impacts would be less than significant.

e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?

NO IMPACT

The project site is not located within an airport land use plan or area subject to excessive noise levels generated by airport operations. The airport nearest to the project site is Chino Airport, located approximately six miles east of the site. Therefore, the project would not be subject to excessive noise levels associated with airport operations. In addition, there is no private air strip within or adjacent to Chino Hills. Consequently, the project site location is not within the vicinity of any private air strip and would not be subject to excessive noise levels associated with private air strip operations. No impact would occur.

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13 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)	☐	☐	■	☐
b. Displace substantial amounts of existing housing, necessitating the construction of replacement housing elsewhere	☐	☐	☐	■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere	☐	☐	☐	■

a. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

LESS THAN SIGNIFICANT IMPACT

The proposed project would include a dormitory that would house 28 monks; the existing facilities accommodate four monks on-site. The current population of Chino Hills is estimated at 78,866 (California DOF, County/State Population and Housing Estimates, 2016). SCAG projects that the population will increase to 94,900 by 2040, an increase of approximately 16,034 residents (SCAG, RTP/SCS, 2016). The level of population growth associated with the proposed project (24 additional residents) falls within the population growth forecast for the City of Chino Hills anticipated in SCAG's long-term population forecasts. Therefore, impacts would be less than significant.

b. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

NO IMPACT

The proposed project would involve demolition of existing resources on the project site, but includes the construction of a new dormitory to house monks living on-site. There would be no displacement of people or housing and no impact would occur.

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14 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1. Fire protection	☐	☐	■	☐
2. Police protection	☐	☐	☐	■
3. Schools	☐	☐	☐	■
4. Parks	☐	☐	■	☐
5. Other public facilities	☐	☐	■	☐

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

LESS THAN SIGNIFICANT IMPACT

The Chino Valley Independent Fire District (CVIFD) provides fire protection services in the City of Chino Hills. The closest fire station to the project site is Station 61 located 4.3 miles east of the project site at 5078 Schaefer Avenue. Station 61 is a four-bay station that houses a paramedic engine staffed by three personnel, a ladder truck staffed by four personnel, and a paramedic squad staffed by two personnel. There are also multiple specialty pieces of apparatus housed at Fire Station 61 that are cross-staffed by personnel on the ladder truck and paramedic engine. These pieces of equipment include a Hazardous Materials unit, an Urban Search and Rescue unit and Water Tender 61. The on-duty battalion chief is based out of at Fire Station 61 (CVIDF, Facilities, 2017).

The proposed project would construct 24 rooms on the site providing housing for 28 monks living on-site plus four guests. An addition of 28 monks on-site would not require additional fire services

because it would not change the service ratio within the City of Chino Hills since population growth would be nominal. The project would increase the number of people at the temple to 110 people on Sunday, compared to the existing capacity of 80 people. In addition events ten times a year would have an increase in as many as 50 people compared to existing conditions and an increase of 150 people at the April and November holidays. The proposed buildings would be equipped with fixed fire sprinklers, fire alarms, marked exits, and fire extinguishers. The Fire Department would review site plans, site construction, and the actual structure prior to occupancy to ensure that required fire protection safety features, including building sprinklers and emergency access, are implemented. The project site is within a developed area currently served by the CVIFD and the development would not create the need for new or expanded fire facilities during regular operations or special events (CVIFD, personal communication Tim Shackelford, 2017b). In addition, the project site's close proximity to Fire Station 61 would help ensure an adequate response time by the Fire Department in emergency situations. As such, impacts related to fire protection would be less than significant

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

NO IMPACT

The City of Chino Hills contracts with the San Bernardino County Sheriff's Department (SBCSD) to receive law enforcement services (SBCSD, Patrol Stations, 2017). The Chino Hills Police Station is located in the Chino Hills Government Center at 14077 Peyton Drive, located 1.7 miles north of the project site. The Chino Hills Police Station is staffed with 52 sworn personnel and 15 civilian personnel, as well as a large volunteer unit consisting of citizens on patrol, Explorer Pose and reserve Deputy Sheriffs (SBC Sheriff 2016). The project would incrementally increase the demand for police protection services compared to existing conditions due to the addition of an estimated 28 monks. As discussed above an addition of 28 monks on-site would not require additional police services because it would not change the service ratio within the City of Chino Hills since population growth would be nominal. Furthermore, the SBCSD has sufficient resources to accommodate the proposed project, including special events at the temple, and the proposed project would not result in the need to construct new or physically alter existing police protection facilities (SBCSD, personal communication Stone, 2017).

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?

NO IMPACT

Project development would incrementally increase the number of monks on the project site to a maximum of 28. However, monks would move into the single room dormitory without children and would not increase the number of students at local public schools. Therefore, since no children would be added at the dormitory on the project site there would be no impact to schools.

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered

governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?

LESS THAN SIGNIFICANT IMPACT

As identified in the City of Chino Hills Park, Recreation and Open Space Element (Chino Hills, Recreation and Open Space Element, 2008), the City's parks system consists of 307.97 acres of land designated as parks. The City owns and operates 44 parks, pocket parks, open space areas, and recreational facilities (Chino Hills, General Plan, 2015b). Crossroads Park is the city recreational facility closest to the project site. Crossroad Park is a 12.8 acre park divided into two park areas, north and south. The southern portion of the park, located closest to the project site, includes a playground, picnic tables, basketball court, exercise course, two tennis courts, barbeques, restrooms, and a gazebo. It is located adjacent to the project site across Chino Valley Parkway to the west. The northern portion of the park, Veterans Park, includes trail access, par course, basketball court, and restrooms. As shown in the Existing and Proposed Trails map in the Recreation and Open Space Element, existing trails are located along Chino Hills Parkway, as well as north/south trails that provide access from the culvert along the northern border of the site to Crossroads Park. The other recreational facility close to the project site is Morningside Park, a 3.5-acre park that includes picnic tables, located 0.2 mile south of the project site.

The City's current population is estimated at 78,866 people (California DOF, County/State Population and Housing Estimates, 2016). Based on this population and the 307.97 acres of parkland within the City limits, there are 3.91 acres of parkland for every 1,000 residents. The Quimby Act uses the standard ratio of 3 acres of parkland for every 1,000 residents. The City currently meets the standard ratio for parkland in the Quimby Act. However, the City's General Plan goal for parkland acreage is five acres per 1,000 residents.

The proposed project would result in an increase of 28 residents on the project site. The parkland to resident ratio would be 3.90 acres of parkland for every 1,000 residents. Therefore, the project would not create the need for new or expanded park facilities and impacts would be less than significant.

a.5. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

LESS THAN SIGNIFICANT IMPACT

The incremental increase in population associated with the proposed project would not require any additional public services within Chino Hills. Therefore, impacts would be less than significant.

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15 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	□	□	■	□
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment	□	□	■	□

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

LESS THAN SIGNIFICANT IMPACT

The project does not include recreational facilities that would require construction or expansion. In addition, the project would not cause a significant growth in population. Development of the proposed project would not create additional employment opportunities in the project area and, therefore, would not increase use of recreational facilities. During events ten times per year visitors would be contained on the project site and would not affect local recreational facilities. As described above in Section 14, *Public Facilities*, the project area is adequately served by recreational facilities and the construction of the proposed project would not cause substantial physical deterioration of these existing recreational facilities. As such, the impacts related to recreation would be less than significant.

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16 Transportation and Traffic

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	■	☐
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	■	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	■
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	■	☐	☐
e. Result in inadequate emergency access?	☐	☐	■	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	☐	☐	■	☐

a. Would the project conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of

the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?

LESS THAN SIGNIFICANT IMPACT

Linscott, Law, and Greenspan, Engineers (LLG) prepared a traffic impact analysis on January 23, 2017 for the proposed project (LLG, Traffic Impact Analysis, 2017; see Appendix E). Trip generation estimates were developed utilizing trip generation rates and equations from Trip Generation, 9th Edition (Institute of Transportation Engineers [ITE], 2012). Based on the project description, the average trips for ITE Land use 560 (Church) were utilized to forecast the project's trip generation potential.

Table 18 summarizes the trip generation potential, which shows that the project would generate an estimated 200 weekday trips (half arriving, half departing), with 12 trips (7 inbound, 5 outbound) producing during the AM peak hour and 12 trips (6 inbound, 6 outbound) produced during the PM peak hour. Based on a review of the project's activity plan, the majority of the project's weekday activities occur during non-peak hours. Therefore, to provide a conservative assessment, the trip generation forecast presented in Table 18 was utilized to analyze potential traffic impacts due to operation of the proposed project.

Table 18 Estimated Project Traffic Trip Generation with PCE Conversion

	Weekday Peak Hour		
ITE Land Use	**AM**	**PM**	**Total Daily Trips**
560: Church[1] Buddhist Temple (21,936 sf)	12	12	200

Source: LLG, Traffic Impact Analysis, 2017; see Appendix E.

[1] Generation rate for ITE Land Use Code 560: Church has a generation rate of 9.11 with a 1,000 square foot unit of measure.

Seven key study intersections and two future project driveways were selected for evaluation utilizing San Bernardino County Congestion Management Program (CMP) analysis criteria and requirements of the City of Chino Hills. The City of Chino Hills adheres to the SANBAG CMP TIA guidelines, which require analysis of arterial intersection locations in which the proposed project is anticipated to contribute 50 or more peak hour trips. City staff also included several locations where the project contributes less than 50 peak hour trips, or is nearby and in close proximity to the project site. The intersections listed below provide local and regional access to the project area and define the extent of the boundaries for this traffic impact investigation.

1 Peyton Drive at Eucalyptus Avenue
2 Chino Hills Parkway at Grand Avenue
3 Chino Hills Parkway at Eucalyptus Avenue
4 Rustic Drive/Carbon Canyon Road at Chino Hills Parkway
5 Peyton Drive at chino Hills Parkway
6 Pipeline Avenue at Chino Hills Parkway
7 Carbon Canyon Road at Carriage Hills Lane

The following scenarios were evaluated for existing and long-term (2025) conditions:

- AM and PM peak hour capacity analyses for existing conditions
- AM and PM peak hour capacity analyses for existing plus project conditions

- AM and PM peak hour capacity analyses for near-term (Year 2025) conditions without and with project traffic

According to the City of Chino Hills guidelines, a significant traffic impact occurs when an intersection or roadway projected to operate at level of service (LOS) D or better without the project would exceed LOS D with the project. A significant traffic impact would also occur if the project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the project.

Caltrans District 8 has established a LOS D as the operating standard for all Caltrans facilities. Caltrans has determined that all State-owned facilities that operate below LOS D should be identified and improved to an acceptable LOS. The Caltrans *Traffic Impact Study Guidelines* (2002) does state that if an existing State-owned facility operates at less than LOS D, the existing service level should be maintained.

The San Bernardino CMP definition of deficiency is based on maintaining a level of service standard of LOS E or better, except where an existing LOS F condition is identified in the CMP document.

In the event that an intersection is operating at or is forecast to operate at a deficient LOS, the City's guidelines as well as the CMP guidelines have defined a series of steps to be completed to determine the project's contribution to the deficiency of intersections. The steps are as follows:

1 Determine the mitigation measures necessary to achieve an acceptable service level.
2 Calculate the project's share in the future traffic volume projections for the peak hours.
3 Estimate the cost to implement recommended mitigation measures.
4 Calculate the project's fair-share contribution to offset the project's traffic impacts.

Existing Plus Project Traffic Conditions

Table 19 summarizes the peak hour level of service results at the seven key study intersections for existing and existing plus project traffic conditions. The first column (1) of LOS values is a summary of existing AM and PM peak hour traffic conditions while the second column (2) lists plus project traffic conditions. The third column (3) indicates whether traffic associated with the project would have a significant impacts based on the LOS standards and significant impact criteria defined by the City of Chino Hills, San Bernardino County, and Caltrans.

Traffic associated with the proposed project would not directly impact any of the seven key study intersections, when compared to the LOS standards and significant impact criteria. Although the intersections of Peyton Drive at Chino Hills Parkway and Carbon Canyon Road at Carriage Hills Lane are forecast to continue to operate at an unacceptable LOS E under Existing Plus Project traffic conditions, the proposed project adds less than 0.01 to the V/C ratio. Therefore, the projects incremental V/C ratio increase is considered insignificant. As shown in Table 19, the remaining key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of project traffic. Further, the project's impact is considered less than significant since the project contributes less than 50 peak hour trips at these key locations.

Cumulative Plus Project Traffic Conditions

Background traffic growth estimates have been calculated using an ambient growth factor for horizon Year 2025. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area in other jurisdictions. The future growth in traffic

volumes has been calculated at 2%) per year. When applied to the Year 2016 existing traffic volumes, this factor results in an 18% growth in existing volumes to the near-term horizon Year 2025.

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (cumulative projects) in the vicinity of the proposed project has been researched at the City of Chino Hills, City of Chino, and City of Brea. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. Based on research conducted by LLG, there are 23 cumulative projects in the City of Chino Hills, 40 cumulative projects in the City of Chino and, 8 cumulative projects in the City of Brea within the vicinity of the subject site. These 71 cumulative projects are included as part of the cumulative background setting. A full list of all 71 cumulative projects is provided in the Traffic Impact Analysis (see Appendix E).

Table 20 summarizes the weekday AM peak hour and PM peak LOS results at the seven key study intersections for the Year 2025. This table is similar to Table 19; however, the second column (2) lists projected cumulative traffic conditions (existing plus ambient Year 2025 traffic plus cumulative projects traffic), while the third column (3) presents forecast Year 2025 cumulative traffic conditions with the addition of project traffic. The fourth column indicates whether the future traffic associated with the proposed project would have a significant impact in Year 2025 traffic conditions based on the LOS standards and impact criteria identified earlier.

An analysis of future (Year 2025) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative project traffic would cumulatively impact five (Key Intersections 2, 3, 5, 6, and 7) of the seven key study intersections when compared to existing traffic conditions. Although these five key study intersections are forecast to operate at an unacceptable LOS E or F under Year 2025 Plus Project traffic conditions, the proposed project would add less than 0.01 to the V/C ratio. Further, the project's impact is considered less than significant since the project contributes less than 50 peak hour trips at these five intersections. As such, the total forecasted change would not be attributed to traffic generated solely from the proposed project. Therefore, the project's incremental V/C ratio increase at the five intersections forecast to operate at LOS E or F is considered insignificant. The remaining two key study intersections (Key Intersection 1 and 4) are forecast to continue to operate at LOS D or better during the weekday AM and PM peak hours with the addition of ambient traffic growth and cumulative project traffic.

The results of the intersection analyses, summarized in Table 19 and Table 20, indicate that the proposed project would not have a significant impact at any of the key study intersections. As there are no significant impacts, impacts would be less than significant and no traffic mitigation measures are required or recommended for the study intersections.

Table 19 Existing Plus Project Peak Hour Intersection Capacity Analysis

		(1) Existing Traffic Conditions			(2) Existing Plus Project Traffic Conditions			(3) Significant Impact		
Key Intersection	**AM/PM**	**Delay (s/v)**	**V/C**	**LOS**	**Delay (s/v)**	**V/C**	**LOS**	**Delay Increase (s/v)**	**V/C Increase**	**Yes/No**
1. Peyton Drive at Eucalyptus Avenue	AM	29.1	0.452	C	29.1	0.453	C	0.0	0.000	No
	PM	31.5	0.490	C	31.5	0.490	C	0.0	0.000	No
2. Chino Hills Parkway at Grand Avenue	AM	42.4	0.740	D	42.4	0.740	D	0.0	0.000	No
	PM	36.5	0.706	D	36.5	0.707	D	0.0	0.001	No
3. Chino Hills Parkway at Eucalyptus Avenue	AM	44.9	0.885	D	44.9	0.886	D	0.0	0.001	No
	PM	30.8	0.664	C	30.8	0.664	C	0.0	0.000	No
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway	AM	24.7	0.794	C	24.7	0.794	C	0.0	0.000	No
	PM	28.2	0.745	C	28.2	0.745	C	0.0	0.000	No
5. Peyton Drive at Chino Hills Parkway	AM	38.5	0.674	D	38.5	0.675	D	0.0	0.001	No
	PM	72.1	0.920	E	72.3	0.921	E	0.2	0.001	No
6. Pipeline Avenue at Chino Hills Parkway	AM	42.2	0.733	D	42.1	0.734	D	0.0[1]	0.001	No
	PM	49.8	0.791	D	49.8	0.792	D	0.0	0.001	No
7. Carbon Canyon Road at Carriage Hills Lane	AM	39.5	0.218	E	39.7	0.219	E	0.2	0.001	No
	PM	48.8	0.108	E	49.0	0.108	E	0.2	0.000	No

Source: LLG, Traffic Impact Analysis, 2017; See Appendix E.

Notes: s/v = seconds per vehicle (delay); V/C = volume-to-capacity ratio; LOS = level of service

[1] Theoretical negative increase, which is possible with HCM calculations, are denoted as an increase of 0.0 s/v.

Table 20 Year 2025 Peak Hour Intersection Capacity Analysis

		(1) Existing Traffic Conditions			(2) Year 2020 Cumulative Traffic Conditions			(3) Year 2020 Cumulative Plus Project Traffic Conditions			(4) Significant Impact		
Key Intersection	**AM/ PM**	**Delay (s/v)**	**V/C**	**LOS**	**Delay (s/v)**	**V/C**	**LOS**	**Delay (s/v)**	**V/C**	**LOS**	**Delay Increase (s/v)**	**V/C Increase**	**Yes/ No**
1. Peyton Drive at Eucalyptus Avenue	AM	29.1	0.453	C	27.8	0.443	C	27.8	0.443	C	0.0	0.000	No
	PM	31.5	0.490	C	34.6	0.537	C	34.6	0.537	C	0.0	0.000	No
2. Chino Hills Parkway at Grand Avenue	AM	42.4	0.740	D	57.3	0.943	E	57.3	0.943	E	0.0	0.000	No
	PM	36.5	0.706	D	44.8	0.897	D	44.9	0.897	D	0.1	0.000	No
3. Chino Hills Parkway at Eucalyptus Avenue	AM	44.9	0.885	D	56.9	0.941	E	57.0	0.941	E	0.1	0.000	No
	PM	30.8	0.664	C	37.9	0.835	D	37.9	0.836	D	0.0	0.001	No
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway	AM	24.7	0.794	C	36.6	0.932	D	37.3	0.932	D	0.7	0.000	No
	PM	28.2	0.745	C	47.0	0.950	D	48.0	0.951	D	1.0	0.001	No
5. Peyton Drive at Chino Hills Parkway	AM	38.5	0.674	D	45.4	0.877	D	45.4	0.878	D	0.0	0.001	No
	PM	72.1	0.920	E	138.3	1.185	F	138.5	1.186	F	0.2	0.001	No
6. Pipeline Avenue at Chino Hills Parkway	AM	42.2	0.733	D	45.7	0.891	D	45.8	0.892	D	0.1	0.001	No
	PM	49.8	0.791	D	90.7	1.045	F	91.1	1.046	F	0.4	0.001	No
7. Carbon Canyon Road at Carriage Hills Lane	AM	39.5	0.218	E	93.4	0.492	F	93.8	0.493	F	0.4	0.001	No
	PM	48.8	0.108	E	144.7	0.415	F	145.3	0.417	F	0.6	0.002	No

Source: LLG, Traffic Impact Analysis, 2016; See Appendix E.

Notes: s/v = seconds per vehicle (delay); V/C = volume-to-capacity ratio; LOS = level of service

b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

LESS THAN SIGNIFICANT IMPACT

Based on the San Bernardino Congestion Management Program (CMP), a 50 peak hour trip threshold is used by local agencies (including the City of Chino Hills) to establish the study area, determine if an intersection would warrant evaluation, and determine the significance level of an impact. In addition, the CMP requires that all freeway segments within five miles of the project site are analyzed using the Highway Capacity Method (HCM) basic freeway segment analysis where over 100 project-generated trips (two-way) are added to existing and/or future conditions. The nearest freeway to the project site is State Route 71, located approximately 1.75 miles east of the site.

According to the peak hour trips shown in Table 18, the proposed project would generate a maximum of 12 AM peak hour trips and 12 PM peak hour trips, which would not exceed the 50 peak hour trip threshold for adjacent roads. In addition, not all of these trips would flow into the freeway. Because weekday peak hour project generated trips on the key freeway segments would be below the threshold of 100 trips required for a freeway segment analysis, a Freeway Segment (Mainline) CMP Analysis is not required. Project-related traffic impacts to the CMP would be less than significant.

c. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

NO IMPACT

As discussed in Section 8, *Hazards and Hazardous Materials*, and Section 12, *Noise*, because the project site is located approximately 5.5 miles west from the nearest airport (Chino Airport in the City of Chino) and that the project's building height would be a maximum of 39 feet, the project would not present any impediments to air traffic, and would not affect air traffic patterns. Therefore, no impact would occur.

d. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

The traffic impact analysis prepared by LLG also included a site access evaluation, which is comprised of an LOS analysis for project driveways, an internal circulation evaluation (see discussion e. for more information), a sight distance evaluation, and project-specific improvements. Access to the proposed project would be provided via two driveways located on Rustic Drive. Table 21 summarizes the intersection operations for the proposed driveways for Existing Plus Project and Year 2025 Plus Project traffic conditions.

Review of Table 21 shows that both project driveways are forecast to operation at an acceptable LOS under the presented conditions. As such, motorists entering and exiting the project site would be able to do so comfortably, safely, and without undue congestion.

According to the traffic impact analysis, the sight distance evaluation for the proposed project was based on the criteria and procedures set forth by CalTrans in the State's *Highway Design Manual* (HDM) for "Private Road Intersections". The assessment focused on the sight distance requirements for the two project driveways located on Rustic Drive. As determined in the traffic impact analysis, sight distances at the project driveways would be adequate if obstructions along Rustic Drive are minimized. Therefore, any landscaping or hardscapes should be designed such that a driver's clear

line of sight is not obstructed and does not threaten vehicular or pedestrian safety. According to the project site plans (shown in Appendix A), landscaping at the project frontage would consist of on-site decorative vegetation that would not obstruct views of incoming and outgoing drivers nor threaten pedestrian safety.

The proposed project would not introduce any design features such as sharp curves or incompatible uses to the project site that would substantially increase hazards at the site. The proposed project would be subject to evaluation for consistency with City standards for provision of access and the traffic safety (CHMC Title 16, Chapter 34). In addition, implementation of Mitigation Measure TR-1 would ensure consistency with City standards.

Mitigation Measure

The following mitigation measure would ensure driveway safety and would reduce potential impacts to a less than significant level.

TR-1 **Signage and Driveway Safety.** The following improvements are required to be installed prior to the project's first certificate of occupancy. Final plans are subject to the review and approval of the City Traffic Engineer.

a) A "STOP" sign and stop bar shall be installed at Project Driveway No. 1 on Rustic Drive (North), per the City of Chino Hills standards/requirements.
b) A "STOP" sign and stop bar at Project Driveway No. 2 on Rustic Drive (South) shall be installed, per the City of Chino Hills standards/requirements.
c) To ensure driveway safety, the proposed project shall maintain adequate sight distance to all project driveways by minimizing obstructions (i.e. landscaping and/or hardscape) within the "limited use area" on either side of the proposed driveways. Landscaping and/or hardscapes shall be designed such that a driver's clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety. Subject to the review and approval of the City Traffic Engineer, it is recommended that all plants and shrubs within the limited use area be of the type that will grow no higher than 30-inches above the curb.

e. Would the project result in inadequate emergency access?

LESS THAN SIGNIFICANT IMPACT

As mentioned, the traffic impact analysis prepared by LLG also includes a site access evaluation, which determined that both of the project driveways located on Rustic Drive are forecast to operate at an acceptable LOS during the weekday AM and PM peak hour in the Existing Plus Project and the Year 2020 Plus Project traffic conditions. As such, motorists entering and exiting the project site would be able to do so comfortably, safely, and without undue congestion.

As part of the site access evaluation, LLG conducted a circulation evaluation using the *Turning Vehicle Templates*, developed by Jack E. Leisch & Associates, and *AutoTURN for AutoCAD* computer software that simulates turning maneuvers for various types of vehicles. The turning templates were utilized to ensure that a small service/delivery truck and fire engine could properly access the project site. By modeling the turning radii of both types of vehicles (shown in Figure 2-2 of Appendix E), LLG confirmed that a small service/delivery truck and fire engine would properly access and circulate throughout the proposed parking lot (LLG, Traffic Impact Analysis, 2017; see Appendix E). Therefore, the proposed project would have a less than less than significant impact to emergency access.

Table 21 Project Driveway Peak Hour Intersection Level of Service Summary

			Existing Plus Project Traffic Conditions (1)			Year 2025 Cumulative Plus Project Traffic Conditions (2)		
Project Driveway	**AM/PM**	**Intersection Control**	**Delay (s/v)**	**V/C**	**LOS**	**Delay (s/v)**	**V/C**	**LOS**
Project Driveway 1 at Rustic Drive (North)	AM	One-Way Stop	8.5	0.002	A	8.5	0.002	A
	PM		8.5	0.003	A	8.5	0.003	A
Project Driveway 2 at Rustic Drive (South)	AM	One-Way Stop	8.6	0.003	A	8.6	0.003	A
	PM		8.6	0.003	A	8.6	0.003	A

Source: LLG, Traffic Impact Analysis, 2017; See Appendix E.

Notes: s/v = seconds per vehicle (delay); V/C = volume-to-capacity ratio; LOS = level of service

f. Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?

LESS THAN SIGNIFICANT IMPACT

Pedestrian circulation to the project site would be provided via existing public sidewalks along Chino Hills Parkway and Rustic Drive within the vicinity of the project and at project frontage. The proposed project would protect the existing sidewalks bordering the south and west boundaries of the project site, and, if necessary, repair or reconstruct these sidewalks per the City's request. The existing sidewalk system within the project vicinity provides direct connectivity to the major thoroughfares of Rustic Drive/Carbon Canyon Road and Chino Hills Parkway and pedestrian connectivity to the existing residential, recreational, institutional, and commercial development in the surrounding area.

The Chino Hills Bicycle Master Plan identifies Chino Hills Parkway as a Class II bicycle facility, which are bike lanes that provide a striped lane for one-way bike travel on a street or highway adjacent to auto travel lanes (Chino Hills, General Plan, 2016b). Construction of the proposed project would not encroach upon existing bicycle lanes on Chino Hills Parkway nor decrease their performance or safety. In addition, the proposed project would include bicycle racks, which would promote use of the existing bicycle infrastructure.

The project site is approximately 0.4 mile west of an OmniGo Route 365 bus stop (located on the northeast corner of the Chino Hills Parkway/Peyton Drive intersection), which provides transit access to downtown Chino Hills, San Bernardino Valley, and the Chino Transit Center. As such, alternative means of transportation (i.e. walking, biking, and busing) would be available for accessibility to the project site. The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities. Potential impacts would be less than significant.

17 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in any of the following impacts?				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board	☐	☐	■	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	☐	☐	■	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects	☐	☐	■	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	☐	☐	■	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	☐	☐	■	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	☐	☐	■	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste	☐	☐	■	☐

a. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

e. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

LESS THAN SIGNIFICANT IMPACT

The Inland Empire Utilities Agency (IEUA) operates sewer collection systems and wastewater treatment for seven cities in San Bernardino County, including Chino Hills (IEUA, Sewer System Management Plan, 2015). Through the Regional Sewer System, the IEUA conveys primarily domestic wastewater to four water recycling facilities, while wastewater containing high levels of dissolved salts is collected by the Non-Reclaimable Wastewater System. In Chino Hills, sewer infrastructure includes more than 200 miles of sewer lines and 17 pumps and motors (Chino Hills, Sewer Overview, 2016). Preventive maintenance of this system and minor repairs are provided by the City's Public Works Department.

Wastewater from the project site would be conveyed to Regional Water Recycling Plant No. 5 (RP-5), located in the City of Chino (IEUA, Regional Water Recycling Plant #5, 2017). This facility provides primary, secondary, and tertiary treatment, as well as disinfection, after which the recycled water may be reused (IEUA, Regional Water Recycling Plant #5, 2017). The IEUA transfers biosolids that settle out during primary treatment to Regional Solids Plant No. 2, where it is turned into compost for beneficial reuse; this plant also receives biosolids from another IEUA plant, the Carbon Canyon Water Recycling Facility. Recycling Plant No. 5 has a current average daily flow of approximately 9 million gallons per day and a capacity of 16.3 million gallons per day. Thus, the remaining daily capacity is about 7.3 million gallons per day (IEUA, Regional Water Recycling Plant #5, 2017).

Regional Solids Plant No. 2 is within the flood zone upstream of the Prado Dam, on land leased from the United States Army Corps of Engineers; the lease will expire in 2035. The maximum operational water level upstream of the dam is anticipated to be raised to increase the available Orange County water storage. Therefore, the lease is not expected to be renewed upon expiration. The IEUA plans to relocate the solids treatment to the RP-5 Solids Handling Facility, which is out of the flood zone.

The California Emissions Estimator Model (CalEEMod) is a statewide emissions computer model and comprehensive tool for quantifying emissions associated with both construction and operations from a variety of land use projects. Conservatively assuming that wastewater generation would be approximately 80% of water demand, which is based on the CalEEMod result (see Appendix B), the project would generate approximately 14,415 gallons of wastewater per day, as shown in Table 22. This increase would constitute about 0.2% of the existing unused capacities of Regional Water Recycling Plant No. 5 of approximately 7.3 million gallons per day. Therefore, the proposed project would not significantly affect the City's wastewater conveyance system or create the need for the construction of new treatment facilities. Impacts would be less than significant.

Table 22 Estimated Wastewater Generation

Type of Use	Size	Annual Water Demand (gpd)[1]	Wastewater Generation	Amount (gpd)
Existing				
Meeting Hall	5,470 square feet	1,455	80% of Water Demand	1,164
Dormitory	5 dwelling units	1,202	80% of Water Demand	962
			Total existing water demand	*2,126*
Proposed				
Landscaping	2.87 acres	9,369	80% of Water Demand	7,495
Buddhist Temple	14,370 square feet	3,159	80% of Water Demand	2,527
Dormitory	28 dwelling units	8,149	80% of Water Demand	6,519
			Total water demand increase	*16,541*
		Net Increase in Water Demand		**14,415 gpd**

[1] CalEEMod Annual Operational Outputs Appendix B

Notes: gpd = gallons per day. Kitchen and restroom building accounted for in proposed land uses.

c. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

LESS THAN SIGNIFICANT IMPACT

The proposed project would expand the present use of the site which increase impermeable surface area on-site. As discussed in Section 9, *Hydrology and Water Quality*, proposed landscaping would make up approximately 39% of the project site with additional landscaped pockets within the proposed parking lots, which would allow movement of storm water through the surface and add to groundwater recharge. The project would also include a detention basin at the northeast corner of the site, adjacent to Little Chino Creek, which would further manage excess urban runoff and downstream erosion by storing water for a limited period of time. Therefore, the proposed project would not significantly contribute to surface runoff. In addition, the proposed project would be required to comply with the following:

- Chapter 16.54.050 of the CHMC, which states that no land clearing or grading shall occur unless proven compliant with an approved soil erosion and sediment control plan or issued permit.
- Chino Hills Landscape Ordinance (CHMC Chapter 16.07.050) whereby "irrigation systems shall be designed to prevent runoff, over-spray, low head drainage and other similar conditions."
- CHMC Chapter 16.07.100, which recommends on-site storm water management practices "to minimize runoff and water waste to recharge groundwater, and to improve water quality."

Given these measures to reduce storm water runoff, impacts to storm water conveyance facilities would be less than significant.

d. Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

LESS THAN SIGNIFICANT IMPACT

The City's water supply is provided by the Monte Vista Water District. Part of Monte Vista Water District's water supply comes from groundwater, which comes from the Chino Groundwater Basin, is derived from imported water, local wells, local surface water, and recycled water. From Fiscal Years 2005-06 to 2010-11, the City received an average of 17,692 AFY of water from several agencies (Chino Hills, Urban Water Management Plan [UWMP] 2015d). Imported water from the Water Facilities Authority and Metropolitan Water District of Southern California comprised 64% of the water supply, in addition to 17% as desalted groundwater from the Chino Basin Desalter Authority, 10% as groundwater from local wells, and approximately 8% as recycled water from the IEUA. The proposed project would receive water through the City's distribution system, which includes more than 200 miles of water lines and 21,000 individual water connections (Chino Hills, General Plan, 2015b).

As of the winter of 2017, it appears that California is recovering from one of the most severe droughts on record. Regardless, long-term water reliability will continue to be a planning priority. On January, 17, 2014, the governor proclaimed a State of Emergency and directed state officials to take all necessary actions to make water immediately available (California Department of Water Resources [DWR], Governor's Drought Declaration, 2016). The proclamation included several key measures such as requesting all California residents to reduce their water consumption by 20% and the immediate implementation of local water shortage contingency plans by water suppliers. On April 25, 2014, an executive order was issued by the governor to speed up the previous measures and request that residents redouble their efforts to conserve water. A year later, on April 1, 2015, the governor issued Executive Order B-29-15. Key provisions included ordering the State Water Resources Control Board (SWRCB) to impose restrictions to achieve a 25% reduction in potable urban water usage through February 28, 2016; directing the California Department of Water Resources to lead a statewide initiative, in partnership with local agencies, to collectively replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes; and directing the California Energy Commission to implement a statewide appliance rebate program to provide monetary incentives for the replacement of inefficient household devices.

In response to the Governor's state-wide mandatory water-use reductions and the SWRCB's adopted emergency water regulations that require a 28% reduction in water use in Chino Hills, an Urgency Ordinance was adopted and a Stage III High Conservation Alert was declared on May 26, 2015 (Chino Hills, Stage III High Water Conservation Alert is Declared, 2015e). If the City does not meet the new regulations, and the 28% reduction, the WRCB has the authority to fine the City $10,000 per day. The Urgency Ordinance No. 286u and Stage III High Conservation Alert restrict potable water usage of residents and businesses (regulations do not apply to recycled water use). Restrictions include the time, area, frequency, and duration of specified allowable water usages (Chino Hills, Stage III High Water Conservation Alert is Declared, 2015e).

As shown in Table 22 the proposed project would demand an estimated 14,415 gallons of water per day, or 16.2 AFY (based on the estimated water demand from CalEEMod). Table 23 shows actual and projected water supply and demand in the City through 2035.

Despite the current drought conditions, the 16.2 AFY increase in water demand associated with the proposed project can be accommodated with existing and planned supplies. In addition, the

proposed project would be required to comply with any existing or future restrictions on water use that the city implements. Impacts related to water supply would be less than significant.

Table 23 Normal Water Supply and Demand

	Past[1]	2014-2015	2019-2020	2024-2025	2029-2030	2034-2035
Water Supply (AFY)	17,346	27,250	27,250	27,250	27,250	27,250
Water Demand (AFY)	17,346	17,950	18,450	19,280	20,120	20,950
Remaining Supply (AFY) (Supply - Demand)	0	9,300	8,800	7,970	7,130	6,300

Source: Chino Hills, Urban Water Management Plan (UWMP),Table 5.3, 2015d

[1] Past water supply and demand represent averages from Fiscal Year (FY) 2005-06 to FY 2010-11.

f. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

LESS THAN SIGNIFICANT IMPACT

Chino Hills Disposal, a division of Republic Services, Inc., is the city's exclusive franchise waste hauler that services all residential and commercial waste and recycling programs (Chino Hills, General Plan, 2015b). Solid waste from Chino Hills is exported out of San Bernardino County for disposal at the Olinda Alpha Sanitary Landfill in Brea. Table 24 summarizes the permitted daily throughput, estimated average waste quantities disposed, and remaining capacity for this landfill.

Table 24 Solid Waste Disposal Facilities

Facility	Permitted Daily Throughput (tons/day)	2011 Average Daily Waste Quantities Disposed (tons/day)	Estimated Remaining Daily Capacity (tons/day)
Olinda Alpha Sanitary Landfill	8,000	4,355	3,645

Source: Olinda Alpha Landfill, SWANA 2014 Landfill Management Excellence Award, 2014.

Chino Hills has substantially reduced its solid waste stream since the passage of State Law AB 939, which required every city in California to divert at least 50% of its annual waste by the year 2000. As tracked by San Bernardino County's *2007 Countywide Integrated Waste Management Plan,* the city has implemented a wide range of programs to increase its diversion rate (San Bernardino County, Countywide Integrated Waste Management Plan, 2007). The City's diversion rate has climbed from 34% in 1995 to 61% in 2004 (the last measured date of diversion), thereby complying with the standards established by AB 939 and is likely higher than 61% currently.

The handling of all debris and waste generated during construction of the proposed project would be subject to the State's (AB 939) requirements for salvaging, recycling, and reuse of materials from construction activity on the project site. The proposed project has two components (construction and operation) that would result in the generation of solid waste. For purposes of this analysis, the

estimated operational waste is used to determine the net increase in solid waste from the proposed project. Construction of the proposed project would also involve site preparation activities that would generate waste materials, however, construction would be temporary.

As shown in Table 25, project operation would generate approximately 123,000 pounds (61.5 tons) of solid waste per year based on project estimated CalEEMod operational waste generation. The CalEEMod estimate assumes a 50% diversion rate (a conservative estimate, as the City achieved a 61% diversion rate in 2004), and an estimated 337 pounds per day (0.16 tons) would go to a landfill. This would account for approximately 0.004% of the available remaining daily capacity of the Olinda Alpha Sanitary landfill (approximately 3,645 tons), as shown in Table 25.

Table 25 Estimated Solid Waste Generation

Land Use	Size	Waste Generated (lbs/year)	Total (tons/year)
Existing			
Meeting Hall	5,470 square feet	62,400	2.3
Dormitory	5 dwelling units	4,600	31.2
	Total existing waste generation	*67,000*	*33.5*
Proposed			
Landscaping	2.87 acres	400	0.2
Buddhist Temple	14,370 square feet	163,800	81.9
Dormitory	28 dwelling units	25,800	12.9
	Total proposed waste generation	*190,000*	*95*
	Total Increase in Waste Generation	123,000	61.5

Source: CalEEMod Annual Operational Outputs Appendix B

The proposed project would be required to comply with federal, State, and local statutes and regulations related to solid waste, such as AB 939, the County of San Bernardino Integrated Waste Management Plan, and the city's recycling program. Further, the proposed project would be served by landfills with sufficient capacity. Therefore, impacts would be less than significant.

18 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	■	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

a. Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

POTENTIALLY SIGNIFICANT UNLESS MITIGATION INCORPORATED

As noted in Section 4, *Biological Resources*, the CDFW BIOS does not include any mapped essential habitat connectivity areas within the immediate vicinity of the project site (CDFW, BIOS, 2017). The closest mapped essential habitat connectivity area is located approximately 2.5 miles south of the project site in the vicinity of Chino Hills State Park. The project site is separated from this habitat connectivity area by urban development and paved roadways. Therefore, it is not within a location that serves or would serve as a native resident or migratory wildlife corridor. As noted under Section 5, *Cultural Resources*, implementation of the proposed project would have a less than significant impact on known cultural resources with implementation of Mitigation Measures CR-1 and TCR-1,

which would require adherence to existing local, state and federal regulations related to the discovery of any unanticipated cultural resources and human remains during construction activity.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

LESS THAN SIGNIFICANT IMPACT

As described in the discussion of environmental checklist Sections 1 through 18, the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated, with respect to all environmental issues. Cumulative impacts for Noise and Transportation and Traffic have been addressed in Section 12 and Section 13, respectively. As shown in Table 16 in Section 12, *Noise*, the proposed project's contribution to cumulative noise impacts would be below the applicable significance thresholds. In addition, the results shown in Table 20 in Section 13, *Transportation and Traffic*, indicate that the proposed project would not have a significant cumulative impact at any of the key study intersections. Section 3, *Air Quality*, and Section 7, *Greenhouse Gas Emissions*, address long-term air quality and greenhouse gas impacts from the proposed project. Therefore, by their nature, these issues areas relate to the project's potential cumulative impacts. As determined in Section 3, and Section 7, the proposed project would have a less than significant impact regarding air quality and greenhouse gas emissions, thereby resulting in less than significant cumulative impacts. As discussed in Section 2, *Agriculture and Forest Resources*, and Section 11, *Mineral Resources*, the project would have no impact in comparison to existing conditions. Therefore, the project would not contribute to cumulative impacts related to these issue areas. In addition, the Geology and Soils and Hazards and Hazardous Materials issue areas are project-specific and impacts at one location would not add to impacts at other locations, or create additive impacts. The remaining issue areas (Aesthetics, Biological Resources, Cultural Resources, Hydrology and Water Quality, Land Use and planning, Population and Housing, Public Services, Recreation, and Utilities and Services) were found to have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated. As such, cumulative impacts would be less than significant and not cumulatively considerable.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

LESS THAN SIGNIFICANT IMPACT In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in *Air Quality, Hazards and Hazardous Materials*, and *Noise*, the proposed project would not result, either directly or indirectly, in adverse hazards related to air quality, hazardous materials or noise. Compliance with applicable rules and regulations and recommended mitigation measures would reduce potential impacts on human beings to a less than significant level.

References

Bibliography

California Department of Forestry and Fire Protection (Cal Fire). 2008. Very High Fire Hazard Severity Zones in LRA. Accessed January 2017 at: http://www.fire.ca.gov/fire_prevention/fhsz_maps/FHSZ/san_bernardino/Chino_Hills.pdf.

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA). Accessed January 2017 at: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf

California Air Resources Board (California ARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* Accessed January 2017 at: https://www.arb.ca.gov/ch/handbook.pdf.

California Climate Action Registry (CCAR). 2009. General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1. Accessed January 2017 at: https://sfenvironment.org/sites/default/files/fliers/files/ccar_grp_3-1_january2009_sfe-web.pdf

California Department of Conservation (California DOC). 2014. Division of Land Resource Protection. *California Important Farmland Finder*. Accessed January 2017 at: http://maps.conservation.ca.gov/ciff/ciff.html.

_____. 2003. Division of Mines and Geology. *State of California Earthquake Fault Zones, Prado Dam Quadrangle Official Map.* January 2017 at: http://gmw.consrv.ca.gov/shmp/download/quad/PRADO_DAM/maps/PRADO.PDF.

_____. 2001. Division of Mines and Geology. *State of California Seismic Hazard Zones, Prado Dam Quadrangle Official Map*. Accessed January 2017 at: http://gmw.consrv.ca.gov/shmp/download/quad/PRADO_DAM/maps/ozn_prad.pdf .

California Department of Finance (California DOF). 2016. E-5 County/State Population and Housing Estimates. 2016. Accessed October 2016 at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

California Department of Fish and Wildlife (CDFW). Biogeographic Information and Observation (BIOS). Accessed January 2017 at: http://bios.dfg.ca.gov.

California Department of Toxic Substances Control (DTSC). 2007. *EnviroStor Database*. Accessed January 2017 at: http://www.envirostor.dtsc.ca.gov/public/.

_____. 2007b. Hazardous Waste and Substances Site List - Site Cleanup (Cortese List). Accessed January 2017 at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cf.

California Department of Transportation (Caltrans). 2011. *California Scenic Highway Mapping System.* Accessed January 2017 at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

_____. Technical Noise Supplement to the Traffic Noise Analysis Protocol. 2013. Accessed January 2017 at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

_____. *Caltrans Traffic Impact Study Guidelines*. 2002. Accessed January 2017 at: http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

California Department of Water Resources (DWR). 2016. *Governor's Drought Declaration.* Accessed January 2017 at: http://www.water.ca.gov/waterconditions/declaration.cfm.

California Energy Commission (CEC). 2009. Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature. Accessed January 2017 at: http://www.energy.ca.gov/2009publications/CEC-500-2009-038/CEC-500-2009-038-D.PDF

California Emergency Management Agency (CEMA). 2009. Tsunami Inundation Map for Emergency Planning; produced by California Emergency Management Agency, California Geological Survey, and University of Southern California – Tsunami Research Center.

California Seismic Safety Commission. 2005. *Homeowner's Guide to Earthquake Safety.* Accessed January 2017 at: http://www.seismic.ca.gov/pub/CSSC_2005-01_HOG.pdf.

California State Water Resources Control Board. General Waste Discharge Requirements for Bio solids Land Application Draft Statewide Program EIR – Appendix G. Background Information on Acoustics. 1999. Accessed January 2017 at: http://www.waterboards.ca.gov/water_issues/programs/biosolids/deir/appendices/app_g.pdf.

Chino Hills, City of. 2008. *Recreation and Open Space Element.* Accessed January 2017 at: http://www.chinohills.org/DocumentCenter/View/11283.

_____. 2015a. City Municipal Code. Accessed January 2017 at: http://www.chinohills.org/index.aspx?NID=114.

_____. 2015b. City of Chino Hills General Plan. Accessed January 2017 at: http://www.chinohills.org/DocumentCenter/View/11275.

_____. 2015c. *Final Program Environmental Impact Report General Plan Update*. State Clearinghouse No. 2013051082. Accessed January 2017 at: http://www.chinohills.org/DocumentCenter/View/11274.

_____. 2015d. *Urban Water Management Plan 2015.*Accessed January 2017 at: http://www.cityofchino.org/home/showdocument?id=12660

_____. 2015e. Stage III High Water Conservation Alert is Declared. Accessed January 2017 at: http://www.chinohills.org/DocumentCenter/View/11389.

_____. 2016. Sewer Overview. Accessed January 2017 at: http://www.chinohills.org/index.aspx?nid=1034.

Chino Valley Independent Fire District (CVIFD). 2017. Facilities. Accessed January 2017 at: http://chinovalleyfire.org

_____. 2017b. Personal Communication. Shackelford, Tim. Chino Valley Fire District. Fire Chief. January 30, 2017.

FEMA (Federal Emergency Management Agency). 2008. Flood Insurance Rate Map #06071C9330H. Accessed January 2017 at: http://www.fema.gov/flood-insurance-rate-map-firm.

_____. 2012. FEMA Provisionally Accredited Levees Brochure. Accessed January 2017 at: http://www.fema.gov/media-library-data/20130726-1531-20490-1102/provisionally_accredited_levees.pdf.

Federal Highway Administration (FHWA). 2006. FHWA Highway Construction Noise Handbook. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). Accessed January 2017 at: http://www.fhwa.dot.gov/environment/construction_noise/handbook

_____. 2004. Traffic Noise Model User's Guide. Accessed February 2017 at: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/users_manual/v25uga00.cfm

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. Accessed January 2017 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

Geo-Advantec, Inc. (GAI). 2012. Geotechnical Engineering Evaluation Report. Document.Gordon Bricken and Associates. 2012. Acoustical and Energy Engineers. Acoustical Analysis [for the] Bundy Canyon Site [in the] City of Wildomar. Accessed January 2016 at: http://www.cityofwildomar.org/uploads/files/environmental/Appendix%20H%20-%20Accoustical%20Analysis.pdf.

Inland Empire Utilities Agency (IEUA). 2015. *IEUA Sewer System Management Plan*. Accessed January 2017: https://18x37n2ovtbb3434n48jhbs1-wpengine.netdna-ssl.com/wp-content/uploads/2015/04/Unified-SSMP-2015-04-27-Final-with-Appendices.pdf.

_____. 2017. Facilities – Regional Water Recycling Plant #5. Accessed January 2017 at: http://www.ieua.org/facilities/rp-5/ .

Institute of Transportation Engineers (ITE). 2012.*Trip Generation.* 9th Edition.

Intergovernmental Panel on Climate Change [IPCC], 2007: Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Linscott, Law & Greenspan, Engineers Inc. (LLG). 2017. Traffic Impact Analysis. Buddhist Temple. Document. January, 2017.

NatureServe. 2010. Home Website. Accessed January 2017 at: http://explorer.natureserve.org/.

Olinda Alpha Landfill. 2014. SWANA 2014 Landfill Management Excellence Award. Accessed January 2017 at: http://swana.org/portals/0/awards/2014/Landfill%20Management/Orange%20County%20LandfillManagement.pdf. San Bernardino Associated Governments (SANBAG). 2014. *San Bernardino County Regional Greenhouse Gas Reduction Plan*. Accessed January 2017 at: http://www.sanbag.ca.gov/planning2/greenhousegas/Final_SBCRegionalGHGReduction.pdf

San Bernardino Associated Governments (SANBAG). 2014. San Bernardino County Regional Greenhouse Gas Reduction Plan. Accessed February 2017 at: http://www.sanbag.ca.gov/planning2/greenhousegas/Final_SBCRegionalGHGReduction.pdf

San Bernardino County. 1991. Airport Land Use Commission- Chino Airport Comprehensive Land Use Plan. November 1991. Accessed December 2016 at: http://www.sbcounty.gov/Uploads/lus/Airports/Chino.pdf.

_____. 2007. *Countywide Integrated Waste Management Plan*.

_____. 2017. San Bernardino County – Property Information Management System Internet Site. Accessed March 2017 at: http://www.sbcounty.gov/assessor/pims/(S(bztp0mubwz5dxdqjx50cyfkt))/PIMSINTERFACE.ASPX

San Bernardino County Sheriff's Department (SBCSD). Patrol Stations – Chino Hills. 2017. Accessed January 2017: http://cms.sbcounty.gov/sheriff/PatrolStations/ChinoHills.aspx

_____. 2017. Personal communication. Stone, Doce. SBC Sheriff's Department. Crime Prevention Unit. January 27, 2017.

Southern California Association of Governments (SCAG). 2016. *Regional Transportation Plan/Sustainable Communities Strategy 2016-2040 (RTP/SCS), Demographics and Growth Forecast Appendix.* 2016. Accessed January 2017 at: http://rtpscs.scag.ca.gov/Pages/default.aspx.

South Coast Air Quality Management District (SCAQMD).1993. CEQA Air Quality Handbook. Tables A9-11-A and A9-12-A.

_____. 2003. Final Localized Significance Threshold Methodology. Revised July 2008.

_____. 2009. Appendix C: Mass Rate Look-up Tables. Accessed January 2017 at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

_____. 2010. Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #15: "Proposed Tier 3 Quantitative Thresholds – Option 1". Accessed December 2017 at: http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/ghgmtg15-web.pdf.

_____. 2013. Final 2012 Air Quality Management Plan. 2013. Accessed January 2017 at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality- management-plan

_____. 2017. California Emission's Estimator Model (CalEEMod). 2016. CalEEMod User's Guide. Accessed February 2017 at: http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2.

State Water Resources Control Board (SWRCB). 2015. GeoTracker Database. Accessed January 2017 at: https://geotracker.waterboards.ca.gov/.

_____. 1999. General Waste Discharge Requirements for Bio solids Land Application Draft Statewide Program EIR – Appendix G. Background Information on Acoustics. Accessed January 2017 at http://www.waterboards.ca.gov/water_issues/programs/biosolids/deir/appendices/app_g.pdf. Accessed January 2017.

United States Army Corps of Engineers (USACE). 2012. Los Angeles District. Chino Creek 1 Levee System. Accessed January 2017 at : http://www.spl.usace.army.mil/Portals/17/Chino_Creek_1_Levee_System_ES_PIR_No1_U_20150416.pdf.

United States Environmental Protection Agency (U.S. EPA). 2017. SEMS Search. Accessed January 2017 at: https://www.epa.gov/enviro/sems-search

_____.1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.

List of Preparers

Rincon Consultants, Inc. prepared this IS-MND under contract to the City of Chino Hills. Aaron Lobliner is the project planner from the City of Chino Hills. Persons involved in data gathering analysis, project management, and quality control include the following.

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Appendix A

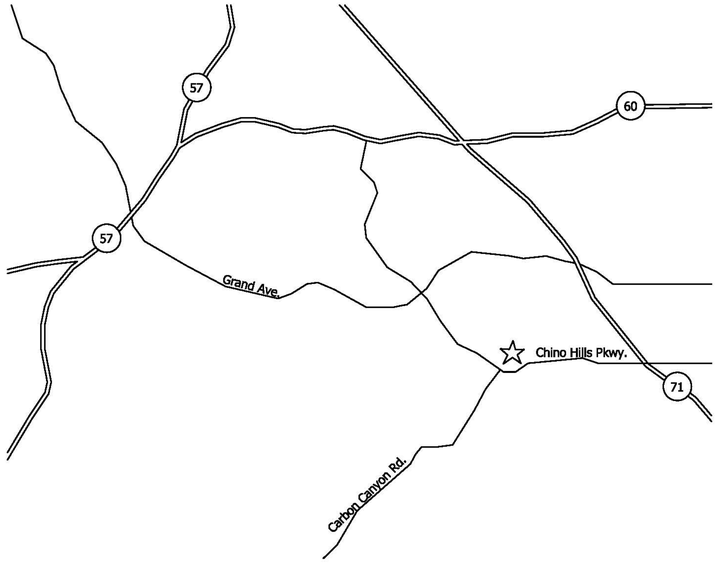
Site Plans

CITY OF CHINO HILLS

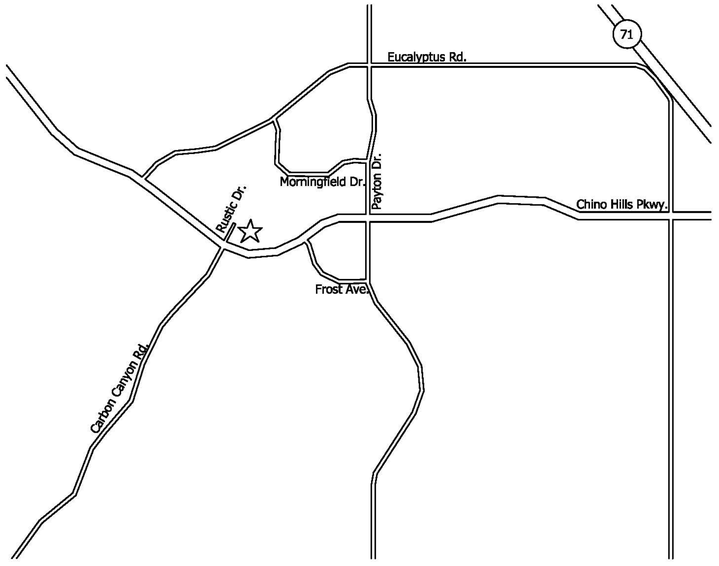
GILLIS + PANICHAPAN ARCHITECTS, INC.

Jack Panichapan, AIA
PRINCIPAL-IN-CHARGE

PLANNING SUBMITTAL



VICINITY MAP (NOT TO SCALE)



LOCATION MAP (NOT TO SCALE)

WAT PHRA THAT DOI SUTHEP USA

PROJECT NO. 3212

2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

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003 - 2 PROPOSED TENTATIVE PARCEL MAP
004 -
005 -
006 -
007 - 6 CONCEPTUAL UTILITY PLAN
008 - 5 ALTA/ACSM LAND TITLE SURVEYS

STREET IMPROVEMENT PLAN:

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010 - 2 CHINO HILLS PARKWAY (SR-142)
011 - 3 RUSTIC DRIVE

ARCHITECTURAL DRAWINGS:

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013 - T-2 CODE SITE PLAN
014 - T-3 CODE SHEET
015 - T-4 LANDSCAPE RATIO
016 - T-5 ACTIVITY PLAN
017 - PH-0 DEMOLITION SITE PLAN
018 - PH-1 PHASING PLAN 1
019 - PH-2 PHASING PLAN 2
020 - PH-3 PHASING PLAN 3
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023 - A-1.3 SITE DETAIL - STATUES
024 - A-2.1 MULTI-PURPOSE BLDG. FLOOR PLAN
025 - A-2.2 MULTI-PURPOSE BLDG. ROOF PLAN
026 - A-2.3 MULTI-PURPOSE BLDG. SECTIONS
027 - A-2.4 MULTI-PURPOSE BLDG. ELEVATIONS
028 - A-2.5 MULTI-PURPOSE BLDG. ELEVATIONS
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030 - A-3.2 DORMITORY ROOF PLAN
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035 - A-4.3 BUDDHA HALL SECTIONS
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057 - LP-3 LANDSCAPE PLANTING PLAN
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059 - LPN-1 LANDSCAPE PLANTING NOTES & LEGENDS
060 - LCD-1 LANDSCAPE CONSTRUCTION DETAILS
061 - LCD-2 LANDSCAPE CONSTRUCTION DETAILS
062 - LCD-3 LANDSCAPE CONSTRUCTION DETAILS
063 - LCD-4 LANDSCAPE CONSTRUCTION DETAILS

JACK PANICHAPAN LICENSED ARCHITECT NO. C-29344 RENEWAL 08/31/2017 STATE OF CALIFORNIA

architecture planning interior

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5TH PLANNING SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE:

COVER SHEET

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

CV-1

GENERAL NOTES

1. THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF THE BUDDHIST TEMPLE OF CHINO HILLS AND ARE NOT TO BE USED FOR OTHER PROJECTS WITHOUT THE PERMISSION OF THE ARCHITECT.
2. THESE NOTES APPLY TO ALL DRAWINGS, UNLESS NOTED OTHERWISE. ANY OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE DRAWINGS AND/OR GENERAL NOTES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
3. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, UNLESS OTHERWISE SHOWN. THEY DO NOT INDICATE METHOD OF CONSTRUCTION. CONTRACTOR IS TO SUPERVISE AND DIRECT THE WORK UNDER HIS CONTRACT AND SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE OWNER AND / OR HIS CONSULTANTS ARE NOT TO INCLUDE INSPECTIONS OF REQUIRED FOR SAME, WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ANY SUPPORT SERVICES PERFORMED BY THE OWNER AND / OR HIS CONSULTANTS DURING CONSTRUCTION ARE TO BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE OWNER AND / OR HIS CONSULTANTS, WHETHER OF MATERIAL OR WORK, AND WHETHER PERFORMED PRIOR TO, DURING OR AFTER COMPLETION OF CONSTRUCTION ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING GENERAL CONFORMANCE WITH DESIGN CONCEPT AND CONTRACT DRAWINGS AND SPECIFICATIONS AND THEREFORE, THEY DO NOT GUARANTEE CONTRACTORS PERFORMANCE AND ARE NOT TO BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
4. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS TO BE REMOVED, RELOCATED OR REMAIN INTACT AND HOW THE NEW CONSTRUCTION RELATES TO THE SITE CONDITION.
5. THE CONTRACTOR SHALL EXAMINE THE JOB SITE. CONFIRM ALL UTILITY LOCATIONS, SIZES, PRESSURES, ETC., AND PROTECT, RELOCATE, CONNECT OR REMOVE ALL NECESSARY FOR TOTAL PROJECT COMPLETION. VERIFY ALL DIMENSIONS AND SATISFY HIMSELF AS TO THE EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGATED TO OPERATE. NOTIFY THE OWNER OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING WORK.
6. ALL CONTRACTORS AND SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONTENTS OF ALL THE DRAWING AND ALL SPECIFICATION SECTIONS, REGARDLESS OF THEIR LICENSE CLASSIFICATION. NO REQUEST FOR CHANGE ORDER WILL BE CONSIDERED BASE UPON INFORMATION FOUND IN ONE AREA OF THE PLANS OR SPECIFICATIONS, AND NOT THE OTHER. INFORMATION FOUND IN ONE PART OF THE PLANS SHALL BE DEEMED TO BE IN ALL SECTIONS.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. THE CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISH STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKMEN DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE OWNER OR OWNER'S STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS AND DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES FOR THE ABOVE. UNLESS NOTED
9. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE SCALE OVER SMALL. DIMENSIONS SHOWN ARE TO THE FACE OF WALL FRAMING (CMU, STUD) UNLESS OTHERWISE NOTED.
10. ALL DIMENSIONS AND THE SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, THE OWNER SHALL BE NOTIFIED FOR CLARIFICATION.
11. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BUILDING BACKING SLEEVES, FRAMING FOR LIGHT FIXTURES, ELECTRICAL LIGHTS, A/C EQUIPMENT, DRAPERY, CEILING TRACKS, PLUMBING EQUIPMENT, COUNTERS, HANDRAILS, AND ALL OTHER ITEMS REQUIRING BACKING SUPPORT.
12. ANYONE SUPPLYING LABOR AND MATERIALS TO THE PROJECT IS TO CAREFULLY EXAMINE ALL SUBSURFACES TO RECEIVE WORK. ANY CONDITIONS DETRIMENTAL TO WORK TO BE REPORTED IN WRITING TO OWNER & PROJECT ARCHITECT PRIOR TO BEGINNING WORK. COMMENCEMENT OF WORK IMPLIES ACCEPTANCE OF SUBSURFACES.
13. REFER TO ARCHITECTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR DEPRESSED SLABS, CURBS, FINISHES, TEXTURES, CLIPS, GROUNDS, ETC., NOT SHOWN ON STRUCTURAL DRAWINGS.
14. PROVIDE OPENINGS AND SUPPORTS FOR MECHANICAL EQUIPMENT, DUCTS, PIPING, VENTS, ETC, AS REQUIRED. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS AND EQUIPMENT NOT SHOWN ON STRUCTURAL DRAWINGS. ALL SUSPENDED EQUIPMENT AND MATERIALS TO BE INSTALLED WITH APPROVED LATERAL BRACING. VERIFY SIZES AND LOCATIONS OF ALL MECHANICAL EQUIPMENT BEFORE CONSTRUCTION OF ANY BASES OR PADS TO SUPPORT SUCH EQUIPMENT. VERIFY ALL PLUMBING AND EQUIPMENT SIZES BEFORE BEGINNING CONSTRUCTION OF CABINETS.
15. NOTIFY OWNER 24 HOURS PRIOR TO PLACING CONCRETE.
16. NOTED FINISH FLOOR ELEVATIONS ARE TO THE TOP OF CONCRETE FLOOR SLAB. WHERE FLOORS ARE SLOPED FOR DRAINAGE, THE HIGH POINT OF FINISH FLOOR IS (+ OR -) 0'- 0" UNLESS NOTED OTHERWISE, AND IS AT THE PERIMETER OF THE ROOM. STANDARD SLOPE IS 1/4" PER FOOT (MINIMUM = 3/16" PER FOOT; MAXIMUM = 5/16" PER FOOT). SUB-SLABS DEPRESSED FOR TILE FLOOR FINISH TO BE SLOPED TO DRAIN AND MAINTAIN SLAB THICKNESS INDICATED ON THE STRUCTURAL DRAWINGS.
17. SOILS AND FOUNDATIONS INFORMATION BORING LOCATIONS, TEST RESULTS ARE INCLUDED IN THE PROJECT GEOTECHNICAL INVESTIGATION REPORT.
18. NOTIFY THE OWNER IF ANY CONDITIONS EXIST WHICH WILL PREVENT THE COMPLETION OF WORK IN A PROFESSIONAL AND SATISFACTORY MANNER AS WELL AS ANY AND ALL ADDITIONAL WORK TO BE PERFORMED BEFORE STARTING WORK ALL NOTIFICATIONS SHALL BE IN WRITING.
19. ALL CONTRACTORS AND SUB-CONTRACTORS SHALL OBTAIN A CITY BUSINESS LICENSE. APPLICANTS (DEVELOPER/CONTRACTOR) SHALL REQUEST A STANDARD SUB-CONTRACTOR FORM FROM BLDG. DIV. PRIOR TO BLDG PERMIT ISSUANCE. THEY SHALL COMPLETE AND SUBMIT THE FORM TO THE BUSINESS LICENSE DIV. BEFORE RELEASING THE CERTIFICATE OF OCCUPANCY.

WATERPROOFING COMMENTS

1. THERE IS A HEIGHTENED CONCERN IN THE CONSTRUCTION INDUSTRY ABOUT THE INTRUSION OF WATER INTO BUILDINGS AND THE RESULTING MOLD THAT DEVELOPS SUBSEQUENTLY. THE OWNER HAS MADE A DILIGENT ATTEMPT TO SPECIFICALLY DETAIL THE PROJECT TO STOP THIS WATER FROM ENTERING THROUGH PENETRATIONS INTO THE BUILDNG. HOWEVER, ALL OF THESE AVENUES WHICH ALLOW THE INTRUSION OF WATER INTO THE BUILDING MAY NOT HAVE BEEN OBSERVED DURING DESIGN. DURING THE COURSE OF YOUR CONSTRUCTION OF THE BUILDING, THE OWNER ASKS TO BE ADVISED IMMEDIATELY OF ANY QUESTIONABLE CONDITIONS THAT MAY OCCUR WITH RESPECT TO THE PERCEIVED WATER-TIGHTNESS OF THE STRUCTURE. ONCE A BUILDING SUFFERS A BREACH, AND MOLD DEVELOPS, A BUILDING CAN BECOME UNTENABLE, AND CORRECTIONS COSTLY. WE ASK THAT THE CONSTRUCTION TEAM BE DILIGENT IN THEIR CONSTRUCTION EFFORTS TO HELP INSURE THAT, THE BUILDING THAT WE TURN OVER AS A TEAM, WILL BE AS WATERTIGHT AS WE CAN MAKE IT. YOU, THE CONTRACTOR, WILL BE THE LAST HANDS ON THE PROJECT, AND WE ARE CERTAINLY AVAILABLE TO DISCUSS WITH YOU, YOUR CONSTRUCTABILITY IDEAS TO KEEP THIS PROJECT WATERTIGHT.

BUILDING CLIMATIZATION

1. THE BUILDING MUST BE "CLOSED IN" SO THAT THE HVAC SYSTEM CAN BE OPERATIONAL FOR COOLING/HEATING AT 70°F. FOR AT LEAST TWO (2) WEEKS PRIOR TO INSTALLATION OF ANY FINISH MATERIAL REQUIRING CLIMATE CONTROL.
2. PRIOR TO INSTALLATION OF ANY FLOORING MATERIAL, THE SLAB ON GRADE MUST BE TESTED PER ANSI APPROVED MOISTURE LEVELS. THE MOISTURE LEVEL SHOULD BE IN THE RANGE ACCEPTED (AS NOTED BY THE MANUFACTURER) FOR THE INSTALLED PRODUCT.

CODE (GENERAL)

1. IT IS THE RESPONSIBILITY OF ANYONE SUPPLYING LABOR OR MATERIALS OR BOTH TO BRING TO THE ATTENTION OF THE OWNER AND PROJECT ARCHITECT ANY DISCREPANCIES OR CONFLICTS BETWEEN THE CODE REQUIREMENTS AND THE DRAWINGS BEFORE PROCEEDING WITH WORK.
2. CONTRACTOR SHALL COMPLY FULLY WITH THE LATEST EDITION OF THE LOCAL BUILDING CODE, ALL LAWS AND ORDINANCES PERTINENT TO ALL WORK OF THIS PROJECT. IN CASE OF ANY CONFLICT WHEREIN THE METHOD OR STANDARDS OF INSTALLATION OR THE MATERIALS SPECIFIED DO NOT EQUAL OR EXCEED THE REQUIREMENTS OF THE LAWS OR ORDINANCES. THE LAWS OR ORDINANCES SHALL GOVERN.
3. ALL WORK SHALL COMPLY WITH TITLE 24 OF THE CODE OF REGULATIONS AND THE UNIFORM BUILDING CODE LATEST EDITION (INDICATED ON THESE SHEETS WITH CBC AMENDMENTS, AND ALL OTHER LOCAL OR STATE AGENCIES HAVING JURISDICTION OVER THIS PROJECT) AND ICC REGULATIONS.

CONSTRUCTION COORDINATION

1. THE GENERAL CONTRACTOR WILL COORDINATE ACCESS TO AND FROM THE SITE. THE CONSTRUCTION FENCING AND GATES SHALL BE PREVIOUSLY REVIEWED AND ACCEPTED BY THE OWNER AND THE CITY OF CHINO HILLS

LIFE SAFETY

1. POST ROOM CAPACITY SIGN AS PROVIDED BY THE LOCAL FIRE DEPARTMENT IN EACH CLASSROOM, ASSEMBLY ROOM OR SIMILAR PURPOSED ROOM HAVING AN OCCUPANT LOAD OF 50 OR MORE.
2. PORTABLE FIRE EXTINGUISHERS TO BE PROVIDED IN CABINETS LOCATED WITHIN SEVENTY-FIVE (75) FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR AND AS SHOWN ON PLANS.
3. INTERIOR FINISHES TO COMPLY WITH CHAPTERS 7 AND 8, AND GLASS AND GLAZING TO COMPLY WITH CHAPTER 24 OF THE CBC AND ALL OTHER APPLICABLE CODES AND REGULATIONS GOVERNING THE PLACE OF THE BUILDING.
4. PENETRATIONS OF FIRE RESISTIVE WALLS, FLOOR -CEILINGS AND ROOF-CEILING SHALL BE PROTECTED AS REQUIRED IN CBC CHAPTER 7.
5. CONTRACTOR SHALL MAINTAIN THE RATING OF ALL PENETRATING WALLS AND SHALL APPLY FIRESTOP AND FIREPROOFING, AT HIS EXPENSE, WHENEVER ANY PENETRATION ARE MADE...ETC. FIRESTOP AND FIREPROOFING MATERIAL SHALL BEAR U.L. LISTING NUMBER DEPICTING WALL TYPE COMPOSITION AND FIRE RATED MATERIAL LIMITATIONS. SUBMIT PROPOSED FIRESTOP FIREPROOFING METHOD FOR APPROVAL PRIOR TO APPLICATION IN THE FIELD.
6. EVERY EXIT DOOR SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. SPECIAL LOCKING DEVICES SHALL BE OF AN APPROVED TYPE.
7. PANIC HARDWARE SHALL BE PROVIDED ON EXIT DOORS SERVING ROOMS, CORRIDORS OR STAIRWAYS HANDLING AN OCCUPANT CAPACITY OF 50 OR MORE PERSONS.
8. ANY DECORATIONS (DRAPES, CURTAINS, SHADES, ETC.) USE SHALL BE NON-COMBUSTIBLE OR FLAME-PROOF I AN APPROVED MANNER, TO COMPLY WITH FIRE MARSHALL BUILDING CODE REQUIREMENTS.
9. ALL EXIT SIGNS OR ILLUSTRATED ON PLANS ARE TO BE ILLUMINATED PER CURRENT ELECTRICAL CODE AND SHALL BE CEILING OR WALL MOUNTED. THE EMERGENCY LIGHTING SYSTEM PROVIDES FOR A LIGHTING VALUE OF PER TITLE 19 ONE-FOOT-CANDLE AT FLOOR LEVEL EXIT LIGHTING AND CBC CHAPTER 10. SIGNS SHALL HAVE 6" LETTERS ON CONTRASTING BACKGROUND.

ACCESSIBILITY NOTES

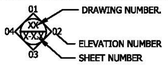
1. AT ABRUPT CHANGES IN LEVELS NOT EXCEEDING 1/2", BEVEL WITH A SLOPE NO GREATER THAN 1:2 EXCEPT AT LEVEL CHANGES NOT EXCEEDING 1/4" MAY BE VERTICAL PER CBC.
2. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE EXCEEDING 1/2" SHALL COMPLY WITH THE REQUIREMENTS FOR CURB RAMPS PER CBC.
3. WHEN THE SLOPE IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS 1 UNIT VERTICAL TO 20 UNITS HORIZONTAL IT SHALL COMPLY WITH THE PROVISIONS OF CBC AS A PEDESTRIAN RAMP.
4. WALK AND SIDEWALK SURFACE CROSS SLOPES SHALL NOT EXCEED 1/4" PER FOOT PER CBC.
5. WALKS SHALL BE PROVIDED WITH A LEVEL AREA NOT LESS THAN 60" BY 60" AT A DOOR OR GATE THAT SWINGS TOWARD THE WALK AND NOT LESS THAN 48" WIDE BY 44" DEEP AT A DOOR OR GATE THAT SWINGS AWAY FROM THE WALK PER CBC.
6. WALKS SHALL EXTEND A MINIMUM OF 24" TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARD THE WALK PER CBC.

ABBREVIATIONS

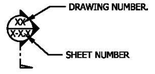
@	AT
AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
ACOUST	ACOUSTICAL
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AL	ALUMINUM
ANOD	ANODIZED
AP	ACCESS PANEL
ARCH	ARCHITECT (URAL)
BD	BOARD
BEL	BELOW
BET	BETWEEN
BLDG	BUILDING
BLK(G)	BLOCKING
B	BOTTOM
BRG	BEARING
BS	BOTH SIDES
BUL	BULLETIN
BUR	BUILT UP ROOFING
CB	CATCH BASIN
CEM	CEMENT
CFCI	CONTRACTOR FURBISHED CONTRACTOR INSTALLED
CI	CAST IRON
CJ	CEILING JOIST
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINOUS OR CONTINUE
CONTR	CONTRACTOR
D	DEEP (DEPTH)
DF	DRAINKING FOUNTAIN
DIAG	DIAGONAL
DIAM	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL	ELEVATION
ELECT	ELECTRIC(AL)
EMER	EMERGENCY
EQ	EQUAL
WEX	ELECTRICAL WATER COOLER
EX	EXHAUST
(E)	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
FD	FLOOR DRAWN
FE(C)	FIRE EXTINGUISHER CABINET
FFE	FINISH FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FIN	FINISH(ED)
FJ	FLOOR JOIST
FLR	FLORRINGS
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FTG	FOOTING
GA	GAUGE
GI	GALVANIZED IRON
GL	GLASS, GLAZING
GLB	GLUE LAMINATED BEAM
GYP	GYPSUM
H	HIGH (HEIGHT)
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HDW	HARDWARE
HM	HOLLOW METAL
HOR	HORIZONTAL
HT	HEIGHT
HVAC	HEATING VENTILATION AIR CONDITION
HP	HIGH POINT
ID	INSIDE DIAMETER
INCL	INCLUDING
INT	INTERIOR
LP	LOW POINT
L	LONG (LENGTH)
LAM	LAMINATED
LAV	LAVATORY
LBL	LABEL
LH	LEFT HAND
LW	LIGHTWEIGHT
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MED	MEDUIM
MET	METAL
MFR	MANUFACTURER
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	MATERALS
NAT	NATURAL
(N)	NEW
NIC	NOT IN CONTRACT
N	NORTH
O.C.	ON CENTER(S)
OD	OUTSIDE DIAMETER
OFCI	OWNER FURBISHED CONTRACTOR INSTALLED
OFOI	OWNER FURBISHED OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
OH	OVERHANG
PLAS	PLASTER, PLASTIC
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL
R	RISER
RAD	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REFL	REFLECTED
REINF	REINFORCED
REQD	REQUIRED
REV	REVISION
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
S	SOUTH
SC	SOLID CORE
SEC	SECTION
SF	SQUARE FOOT (FEET)
SL	SKY LIGHT
SIM	SIMILAR
SPEC	SPECIFICATIONS
SQ	SQUARE
SYM	SYMMETRICAL
T	TREAD, TOP
TE	TELEPHONE
(T)	TEMPERED
T&G	TONGUE & GROOVE
TOP	TOP OF PARAPET
TOS	TOP OF SLAB
TS	TOP OF STEEL
TW	TOP OF WALL
TYP	TYPICAL
U.N.O	UNLESS NOTED OTHERWISE
UR	URINAL
VERT	VERTICAL
VG	VERTICAL GRAIN
VIN	VINYL
W	WEST, WIDTH, WIDE
WC	WATER CLOSET
WP	WATER PROOFING
WR	WATER REPELLENT

SYMBOLS LEGEND

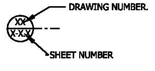
INTERIOR ELEVATION BUBBLE



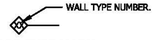
BUILDING SECTION BUBBLE



DETAIL REFERENCE BUBBLE



WALL TYPE MARK



DOOR TYPE MARK

WINDOW TYPE MARK

KEYNOTE/GRIDLINE MARK

WORKING POINT

CALGREEN MANDATORY MEASURES

CITY OF CHINO HILLS MANDATORY MEASURES (GALGREEN NONRESIDENTIAL)

1. CALGREEN DIVISION 5.2 -ENERGY EFFICIENCY

2. CALGREEN DIVISION 5.3 -WATER EFFICIENCY AND CONSERVATION

PROJECT DIRECTORY

CLIENT/OWNER:

WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY,
CHINO HILLS, CA 91709
P: (909) 569-4106

LAMTHONG, TAI TRIKOON
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ARCHITECT/INTERIOR DESIGNER

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ANAHEIM, CA 92801
P: 203-685-1698

MONITA VERMA, PE
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GEOTECHNICAL, CIVIL ENGINEER

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TOTAL CONCEPT LANDSCAPE ARCHITECTURE
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IRVINE, CA 92614
P: 949-250-1615
F: 949-250-1801

HARRY KOBZEFF
E: harry@tcdainc.com

PROJECT DESCRIPTION

1. THIS PROJECT INVOLVES THE CONSTRUCTION OF A BUDDHIST TEMPLE, MONKS DORMITORY, AND A MULTI-USE BUILDING AND ALL ASSOCIATED SITE IMPROVEMENTS.

PROJECT ADDRESS

BUDDHIST TEMPLE OF CHINO HILLS
2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

ZONING: C-N, NEIGHBORHOOD COMMERCIAL

APPLICABLE CODES

1.	CALIFORNIA BUILDING CODE	2013
2.	CALIFORNIA ELECTRICAL CODE	2013
3.	CALIFORNIA MECHANICAL CODE	2013
4.	CALIFORNIA PLUMBING CODE	2013
5.	ENERGY (TITLE 24 - 6)	2013 STANDARDS
6.	CALGREEN NONRESIDENTIAL MEASURES	

BUILDING INSULATION

TYPICAL VALUES:

ROOF:
R-30

PERIMETER WALL:
R-19 (BATT FOIL FACED)

INTERIOR ACOUSTICAL:
3" BATT (WALLS TO 12" ABOVE T-BAR CEILING). 3" BATT ENCAPSULATED (SET ON ALL T-BAR CEILINGS).

GILLIS + PANICHAPAN ARCHITECTS, INC.
architecture
planning
interior
2900 BRISTOL STREET COSTA MESA CALIFORNIA 92626
SUITE G-205 TEL (714) 668-4260
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5TH PLANNING SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE:

TITLE SHEET

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

T-1

Wat Phra That Doi Suthep USA
9/13/2016

AREA	DESCRIPTION	SQUARE FOOTAGE	OCCUPANCY	PARKING REQUIREMENTS	PROBABLE MAX. OCC. LOAD	PARKING PROVIDED
BUDDHA HALL	TEMPLE PRAYER AREA	3,100 S.F.	A-3	3100/25 =124	80 PERSONS	124
MULTI PURPOSE BUILDING	MULTI PURPOSE CLASSROOM	3,600 S.F.	A-3	3600/35 =103	120 PERSONS	103
KITCHEN/ TOILETS		1,900 S.F.	B	not a part	SHARED	
CLASSROOMS	DANCE CLASSROOM	3,100 S.F. 6 ROOMS	A-3	3,100/100= 31	40 PERSONS	31
OFFICES	OFFICES	1,180 4 OFFICES	A-3	1,180/200 = 6	5 PERSONS	6
MONKS DORMITORY	28 PERSONAL QTRS	9,0555 F.	R-2	28	28 PERSONS	28
				292 REQUIRED		292

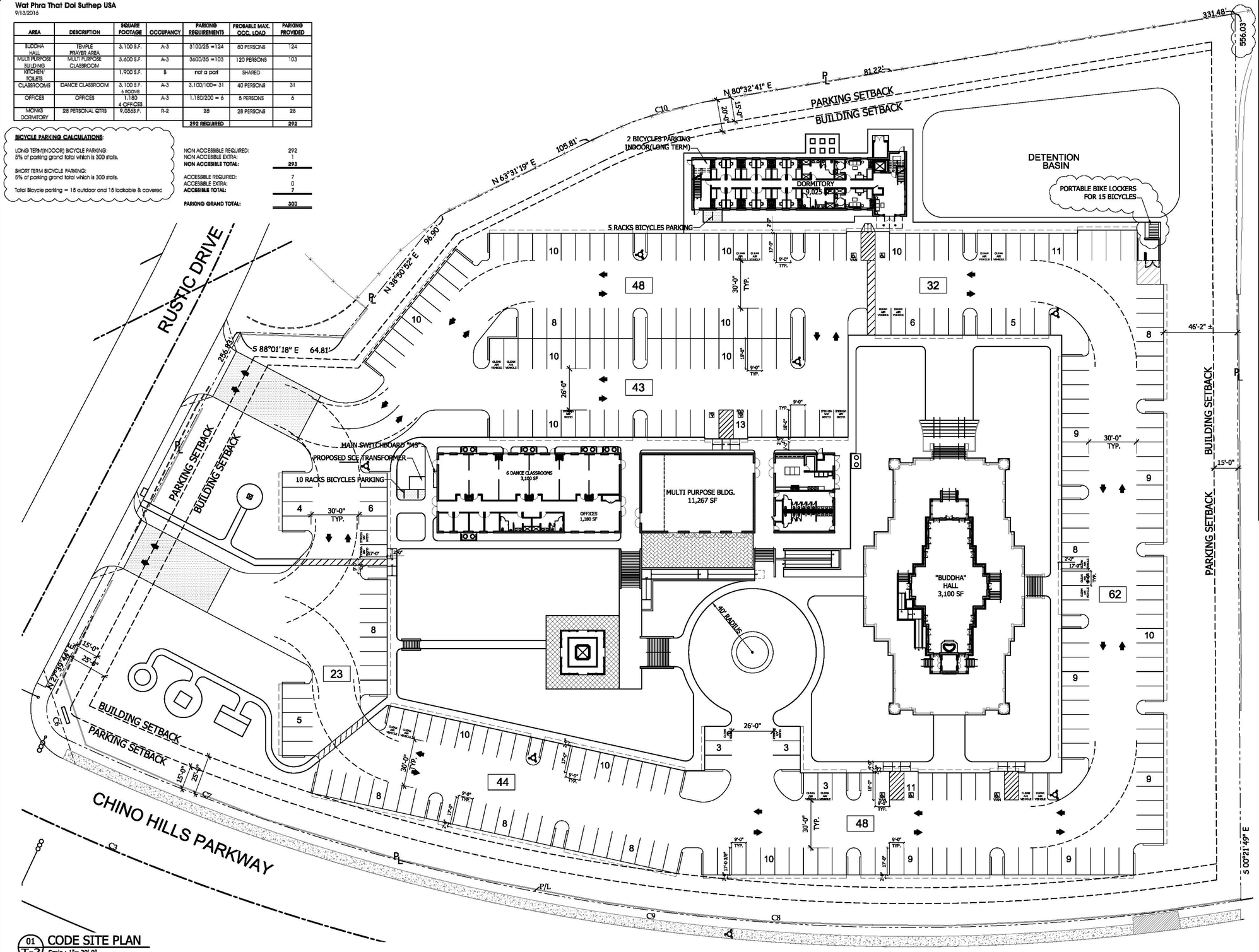
BICYCLE PARKING CALCULATIONS:

LONG TERM(INDOOR) BICYCLE PARKING:
5% of parking grand total which is 300 stalls.

SHORT TERM BICYCLE PARKING:
5% of parking grand total which is 300 stalls.

Total Bicycle parking = 15 outdoor and 15 lockable & coverec

NON ACCESSIBLE REQUIRED:	292
NON ACCESSIBLE EXTRA:	1
NON ACCESSIBLE TOTAL:	**293**
ACCESSIBLE REQUIRED:	7
ACCESSIBLE EXTRA:	0
ACCESSIBLE TOTAL:	**7**
PARKING GRAND TOTAL:	**300**



01 T-2 **CODE SITE PLAN**
Scale : 1"= 30'-0"

SITE ANALYSIS

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

EXISTING ZONING: C-N NEIGHBORHOOD COMMERCIAL
PROPOSED ZONING: I-1 INSTITUTIONAL PRIVATE

SETBACKS: FRONT: 25' FRONT, RUSTIC DRIVE
SIDE: 25' CHINO HILLS PARKWAY
SIDE: 15' SIDE YARD SETBACK
REAR: 20' REAR YARD SETBACK

LANDSCAPE REQUIRED: 20% OF THE PROJECT AREA
5% OF THE PARKING AREA

PARKING SETBACK: 15' ALL PROPERTY LINES

MAXIMUM HEIGHT LIMIT: STRUCTURE: 40'
BUILDING SPIRES: 80'

PROPOSING BUILDING HEIGHT

DORMITORY BUILDING:	30'-5"
MULTI-PURPOSE BUILDING:	23'-9"
BUDDHA HALL:	38'-7"
BUDDHA HALL SPIRES:	50'-3"

NUMBER OF PARKING REQURED AND PROVIDED:

PARKING REQUIREMENTS:
SEE MATRIX FOR ADDITIONAL INFORMATION.

RELIGIOUS ASSEMBLY:	1 STALL PER 25 S.F.
GENERAL ASSEMBLY	1 STALL PER 35 S.F.
DANCE CLASSROOM:	1 STALL PER 100 S.F.
OFFICES:	1 STALL PER 200 S.F.
KITCHEN/TOILETS:	SHARED

NON-ACCESSIBLE PARKING:
REQUIRED: 292 STALLS
PROVIDED: 293 STALLS

ADA ACCESSIBLE PARKING:
REQUIRED: 7 STALLS (200 - 300 AMOUNT OF STALL)
PROVIDED: 7 STALLS

PARKING STALL SIZE: A. 17' MIN. LONG, 9' MIN WIDE
MAX. 2' VEHICLE OVERHANG
B. 19' MIN. LONG, 9' MIN. WIDE

PROPERTY LINE DIMENSIONS

CHINO HILLS PARKWAY:	788.54'
RUSTIC DRIVE:	256.83'
NORTHERLY PL:	680.22'
EASTERLY PL:	556.03'

SEE SHEET A-1.1 FOR ADDITIONAL INFORMATION

FOR PROPERTY LINES DIMENSION
CURVE DATA TABLE:

NUMBER	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
C1	74°21'57"	986.14'	1300.00'	1687.31'
C2	10°25'10"	118.53'	1300.00'	236.41'
C3	11°51'58"	135.10'	1300.00'	269.23'
C4	24°57'28"	287.70'	1300.00'	566.27'
C5	27°07'19"	313.57'	1300.00'	615.38'
C6	92°27'45"	20.88'	20.00'	32.28'
C7	08°41'57"	94.92'	1248.00'	189.48'
C8	26°01'15"	288.36'	1248.00'	566.78'
C9	34°43'12"	390.14'	1248.00'	756.26'
C10	17°02'42"	40.91'	273.00'	81.22'
C11	11°51'20"	86.49'	833.00'	172.36'
C12	28°01'27"	199.64'	800.00'	391.29'
C13	17°02'42"	44.96'	300.00'	89.25'

LICENSED ARCHITECT KONGKIAT PANICHAPAN No. C-28344 RENEWAL 08/31/2017 STATE OF CALIFORNIA
architecture planning interior
GPi
Gillis + Panichapan Architects, Inc.
2900 BRISTOL STREET COSTA MESA, CALIFORNIA 92626
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SUITE G-205

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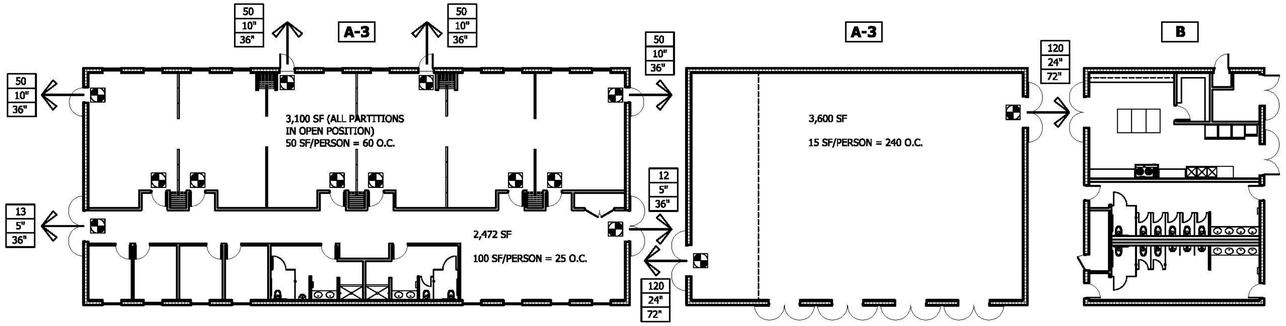
5TH PLANNING SUBMITTAL

CODE SITE PLAN

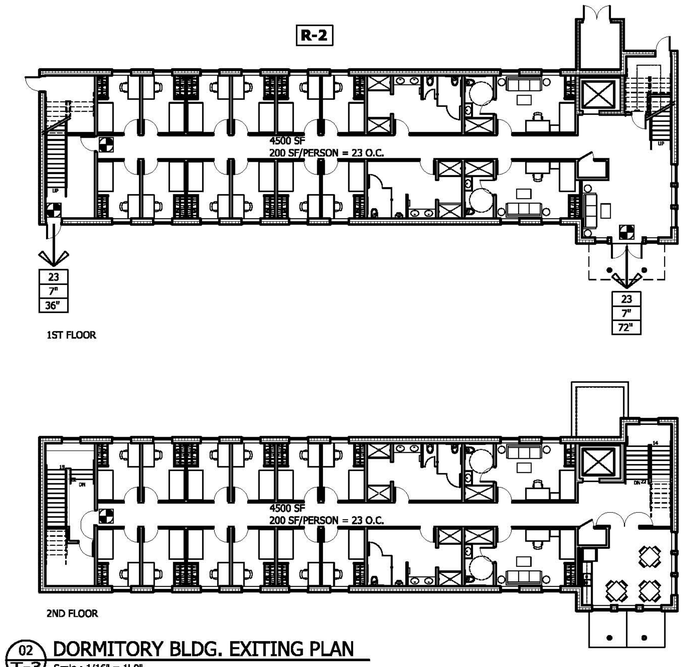
WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

JOB NO.: 3212 | DRAWN BY: STAFF | CHECKED BY: LP | SCALE: 1" = 30'-0" | DATE: 09/13/16

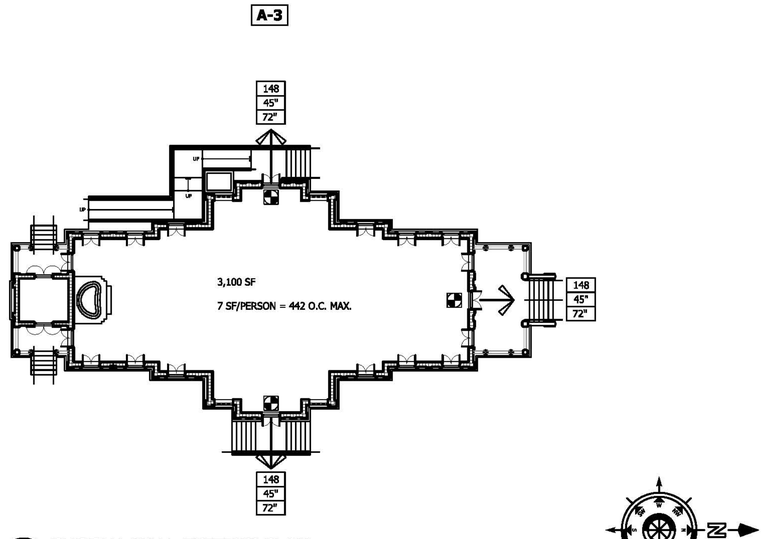
T-2



01 T-3 MULTI PURPOSE BLDG. EXITING PLAN
Scale : 1/16" = 1'-0"



02 T-3 DORMITORY BLDG. EXITING PLAN
Scale : 1/16" = 1'-0"



03 T-3 BUDDHA HALL EXITING PLAN
Scale : 1/16" = 1'-0"

LEGEND:

- ● F.E. FIRE EXTINGUISHER FINAL LOCATION BY FIRE MARSHAL
- → BUILDING EXIT
- XX — OCCUPANT EXIT NUMBER
- XX" — OPENING DIMENSION (INCHES)
- XX" — ACTUAL REQUIRED OPENING (INCHES)
- EXIT SIGN

CODE ANALYSIS FOR SEPARATED USES

BUILDING DATA: DORMITORY

STORIES: 2-STORY STRUCTURE
SPRINKLERED: YES
FIRE ALARM: YES
OCCUPANCY TYPE: R-2 (MONK DORMS)

CONSTRUCTION TYPE: TYPE V B
TOTAL AREA: 9,025 S.F.

ALLOWABLE AREA CALCULATIONS:

B OCCUPANCY CALCULATIONS:
BASIC ALLOWABLE: 7,000 SF
200% INCREASE FOR SPRINKLERS: 7,000 + (7,000 x 2) = 21,000 SF

ACTUAL AREA: 9,025 S.F.

FIRE RESISTIVE REQUIREMENTS:
EXTERIOR BEARING WALLS: NON-RATED
INTERIOR BEARING WALLS: NON-RATED
STRUCTURAL FRAME: NON-RATED
PERMANENT PARTITIONS: NON-RATED
ROOF AND ROOF CEILING: NON-RATED
INTERIOR FINISHES: CLASS A FLAME SPREAD

OPENINGS TO PROPERTY LINES:
EXTERIOR WALLS: NOT APPLICABLE, GREATER THAN 25'
OPENINGS: NOT APPLICABLE, GREATER THAN 25'

BUILDING MATERIALS:
EXTERIOR BEARING WALLS: CMU/STEEL COLUMNS
INTERIOR BEARING WALLS: METAL STUD/CMU
STRUCTURAL FRAME: STEEL COLUMN - STEEL BEAMS

PERMANENT PARTITIONS: STEEL STUDS
FLOOR: CONCRETE SLAB ON GRADE/
FLOOR: 2ND FLOOR: LIGHT WEIGHT CONC. OVER PLYWOOD
ROOF: COMPOSITION TILE
INTERIOR FINISHES: 5/8" TYPE 'X' GYPSUM BOARD

BUILDING DATA: MULTI-PURPOSE BLDG

STORIES: 1-STORY STRUCTURE
SPRINKLERED: YES (NFPA 13)
KITCHEN: FIXED FIRE SPRINKLERS AT KITCHEN
FIRE ALARM: YES
OCCUPANCY TYPE: B (TOILETS/KITCHEN) 1,900 S.F.
A-3 (MEDITATION HALL) 3,600 S.F.
A-3 (CLASSROOMS, OFFICES, WC) 5,767 S.F.

CONSTRUCTION TYPE: TYPE V B
TOTAL AREA: 11,267 SF

ALLOWABLE AREA CALCULATIONS:

B OCCUPANCY CALCULATIONS:
BASIC ALLOWABLE: 9,000 SF
300% INCREASE FOR SPRINKLERS: 9,000 + (9,000 x 3) = 36,000 SF
ALLOWABLE AREA: 36,000 SF
ACTUAL AREA: 1,900 SF

A-3 OCCUPANCY CALCULATIONS:
BASIC ALLOWABLE: 7,000 SF
300% INCREASE FOR SPRINKLERS: 7,000 + (7,000 x 3) = 28,000 SF
ALLOWABLE AREA: 28,000 SF
ACTUAL AREA: 9,367 SF

MIXED OCCUPANCY CALCULATIONS:
(B) 1,900 / 36,000 + (A-3) 9,367 / 28,000 = 0.39 < 1.0

FIRE RESISTIVE REQUIREMENTS:
EXTERIOR BEARING WALLS: NON-RATED
INTERIOR BEARING WALLS: NON-RATED
STRUCTURAL FRAME: NON-RATED
PERMANENT PARTITIONS: NON-RATED
ROOF AND ROOF CEILING: NON-RATED
INTERIOR FINISHES: CLASS A FLAME SPREAD

OPENINGS TO PROPERTY LINES:
EXTERIOR WALLS: NOT APPLICABLE, GREATER THAN 25'
OPENINGS: NOT APPLICABLE, GREATER THAN 25'

BUILDING MATERIALS:
EXTERIOR BEARING WALLS: CMU
INTERIOR BEARING WALLS: NA
STRUCTURAL FRAME: STEEL COLUMN - STEEL BEAMS
WOOD TRUSS
PERMANENT PARTITIONS: STEEL STUD
FLOOR: CONCRETE SLAB ON GRADE
ROOF: COMPOSITION TILE
INTERIOR FINISHES: 5/8" TYPE 'X' GYPSUM BOARD

OCCUPANCY SEPARATION:
A-3 AND B: 1 HOUR SEPARATION (TABLE 508.4) (SPRINKLERED)

BUILDING DATA: BUDDHA HALL

STORIES: 1-STORY STRUCTURE
SPRINKLERED: YES (NFPA)
FIRE ALARM: MANUAL FIRE ALARM
OCCUPANCY TYPE: A-3 (TEMPLE HALL)

CONSTRUCTION TYPE: TYPE V B
TOTAL AREA: 3,100 S.F.

ALLOWABLE AREA CALCULATIONS:

B OCCUPANCY CALCULATIONS:
BASIC ALLOWABLE: 9,000 SF
ACTUAL AREA: 3,100 SF

FIRE RESISTIVE REQUIREMENTS:
EXTERIOR BEARING WALLS: NON-RATED
INTERIOR BEARING WALLS: NON-RATED
STRUCTURAL FRAME: NON-RATED
PERMANENT PARTITIONS: NON-RATED
ROOF AND ROOF CEILING: NON-RATED
INTERIOR FINISHES: CLASS A FLAME SPREAD

OPENINGS TO PROPERTY LINES:
EXTERIOR WALLS: NOT APPLICABLE, GREATER THAN 25'
OPENINGS: NOT APPLICABLE, GREATER THAN 25'

BUILDING MATERIALS:
EXTERIOR BEARING WALLS: CMU/STEEL COLUMNS
INTERIOR BEARING WALLS: N.A.
STRUCTURAL FRAME: STEEL COLUMN - STEEL BEAMS

PERMANENT PARTITIONS: STEEL STUD FURRING
FLOOR: CONCRETE SLAB ON GRADE
ROOF: CLAY TILE
INTERIOR FINISHES: 5/8" TYPE 'X' GYPSUM BOARD

LICENSED ARCHITECT PANICHAPAN KONOK MACK No. C-29214 EXP. 11-30-2015 STATE OF CALIFORNIA

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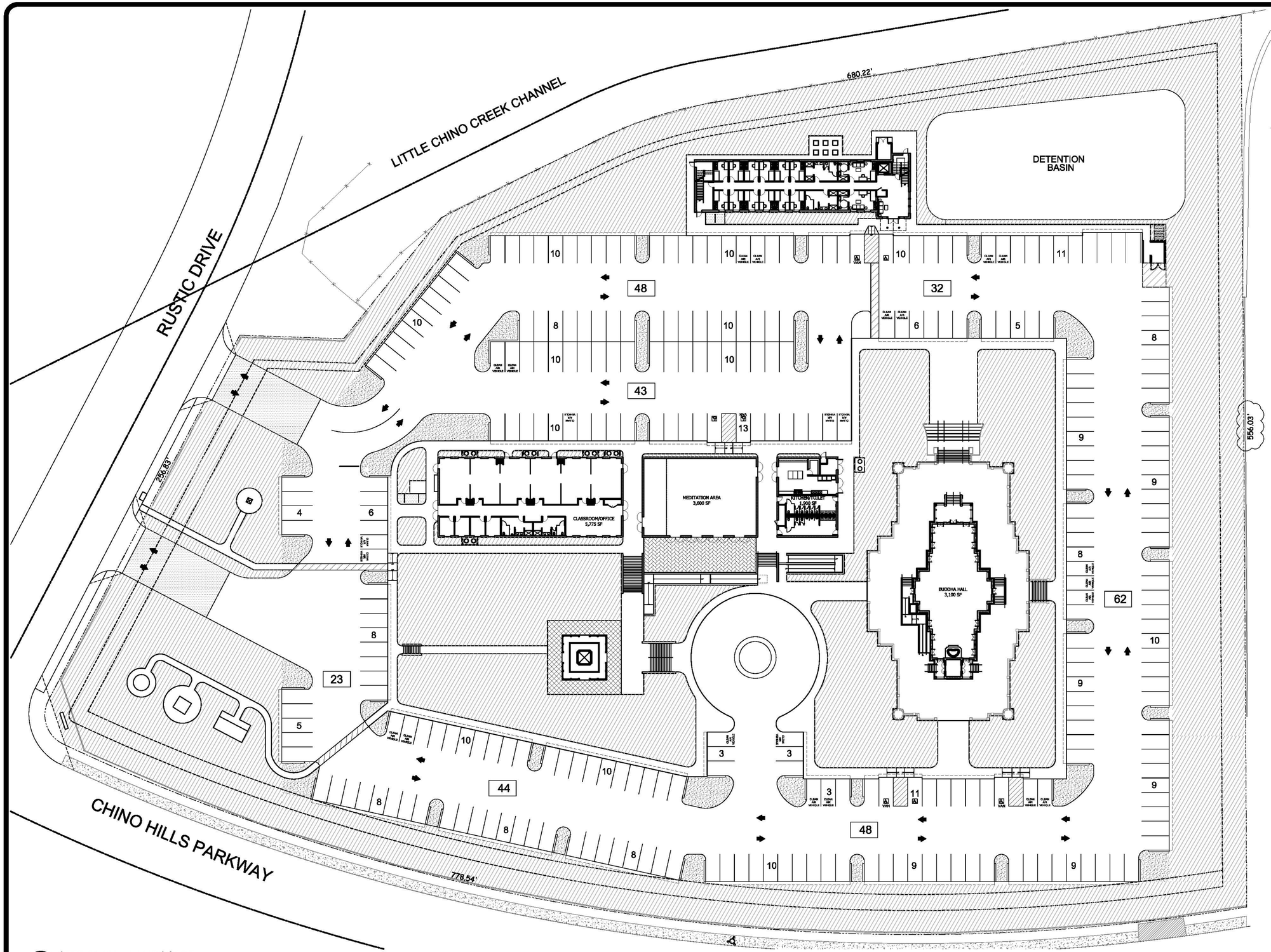
5TH PLANNING SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/16" = 1'-0"

CODE SHEET

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

T-3



01 T-4 SITE PLAN - LANDSCAPE
Scale : 1" = 30'-0"

LANDSCAPE PERCENTAGE

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

EXISTING ZONING: C-N NEIGHBORHOOD COMMERCIAL
PROPOSED ZONING: I-1 INSTITUTIONAL PRIVATE

REQUIRED LANDSCAPE: 20% OF THE PROJECT AREA
5% OF THE PARKING AREA

PROPOSED LANDSCAPE: 39% OF PROJECT AREA ARE LANDSCAPE.
7.5% OF PARKING AREA ARE LANDSCAPE.

PROPOSED SITE LANDSCAPE

PROPOSED PARKING AREA LANDSCAPE

TOTAL SITE AREA: 317,988 SQ.FT.
TOTAL LANDSCAPE AREA: 124,918 SQ.FT.
LANDSCAPE PERCENTAGE: 39%

TOTAL PARKING AREA: 116,286 SQ.FT.
TOTAL PARKING LANDSCAPE: 8,721 SQ.FT.
PARKING LANDSCAPE PERCENTAGE: 7.5%

SITE AREA SUMMARY

TOTAL SITE AREA: 317,988 SQ.FT.
TOTAL PARKING AREA: 116,286 SQ.FT
TOTAL LANDSCAPE AREA:124,918 SQ.FT.

KONAN PANICHAPAN REGISTERED ARCHITECT No. C-29414 RENEWAL 08/31/2017 STATE OF CALIFORNIA

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5TH PLANNING SUBMITTAL

LANDSCAPE RATIO

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

JOB NO.: 3212 | DATE: 09/13/16
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SCALE: 1/30" = 1'-0"

T-4

TYPICAL ACTIVITY PLAN

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

THE TEMPLE OPEN 7 DAYS A WEEK FROM 9AM - 5PM.

MOST ACTIVITIES START AT 10AM TO 5PM ON SUNDAY ONLY. ACTIVITIES ARE CHANTING, REQUEST FOR FIVE PERCEPTS, OFFER FOOD TO MONKS, RECITE SCRIPTURES, AND MEDITATION.

ON MONDAY TO SATURDAY, THERE WILL BE FEW ACTIVITIES SUCH AS PEOPLE OFFER FOOD TO THE MONK, GIVING DONATION, AND LISTEN TO THE PRAYER IN THE MEDITATION CLASSROOM OR BUDDHA HALL.

MULTI-PUPOSE BUILDING

DANCE CLASSROOMS (TRADITIONAL THAI DANCE)
40 MAX. OCCUPANCY TOTAL
ACTIVITY OCCURS ONLY ON SUNDAY FROM 10AM - 3PM.

MULTI-PURPOSE CLASSROOM
120 MAX. OCCUPANCY
ACTIVITY OCCURS ONLY ON SUNDAY FROM 10AM - 3PM.

KITCHEN/RESTROOM
20 MAX. OCCUPANCY
ACTIVITY OCCURS DAILY FROM 7AM - 6PM.

OFFICE
4 MAX. OCCUPANCY TOTAL
ACTIVITY OCCURS DAILY FROM 7AM - 6PM.

BUDDHA HALL
80 MAX. OCCUPANCY
60 VISITORS, ACTIVITY OCCURS ONLY ON SUNDAY FROM 8AM - 5PM.
20 MONKS, ACTIVITY OCCURS DAILY FROM 8AM - 4PM.

DORMITORY BUILDING
28 MAX. OCCUPANCY
ACTIVITY OCCURS DAILY, 24 HOURS A DAY.

FARMER MARKET OCCURS ON SUNDAY FROM 9AM - 4PM. TEMPORARY KIOSKS OCCUPY AT THE LANDSCAPE NEXT TO JADEE. IT IS NOT COMMERCIAL TYPE OF FARMER MARKET. OCCASIONALLY, PEOPLE GIVE OUT FREE FOOD AND SELL PRODUCES FOR RAISING MONEY TO THE TEMPLE AS DONATION. THEREFORE, THE TRAFFICS AND PEDESTRIAN CIRCULATION WILL NOT BE AS DENSE AS NORMAL FARMER MARKET.

HOLIDAY FESTIVAL OCCURS ONCE A MONTH. ON HOLIDAY, VISITORS WILL OFFER FOOD TO THE MONKS, CHANTING, AND MEDITATE AT THE MULTI-PURPOSE CLASSROOM AND BUDDHA HALL. USUALLY, THE ACTIVITIES ARE THE SAME AS EVERY SUNDAY.

THERE IS NO FORMAL WEDDING CEREMONY OR RECEPTION OCCURS IN THE TEMPLE. THE MONK WILL NOT CONDUCT ANY CEREMONY. TYPICALLY FOR WEDDING, GROUP OF PEOPLE WILL OFFER FOOD TO THE MONKS, GIVING DONATIONS, CHANTING, AND LISTEN TO THE PRAYER IN THE MEDITATION CLASSROOM OR BUDDHA HALL AS TYPICAL SUNDAY ACTIVITIES.

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ACTIVITY PLAN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

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SCALE: 1/30" = 1'-0"

T-5

01 T-5 ACTIVITY PLAN
Scale : 1/30" = 1'-0"

LITTLE CHINO CREEK CHANNEL

RUSTIC DRIVE

680.22'

PARKING SETBACK

BUILDING SETBACK

15'-0"

20'-0"

EXISTING DIRT PARKING AREA

EXISTING CHAIN LINK FENCE TO REMAIN

EXISTING FENCE TO BE DEMO

WALL TO BE DEMO

EXISTING DRIVEWAY

SEE PHASING PLAN (PH-1, PH-2, PH-3)
ON DEMOLITION PHASE OF EACH BUILDING.

CLEAN AIR VEHICLE

15'-0"

556.03'

BUILDING SETBACK

EXISTING FENCE TO REMAIN

256.83'

FENCE TO BE DEMO

PLATFORM TO BE DEMO

(A) STATUE/MONUMENT TO RELOCATE

EXISTING FIRE HYDRANT

RETAINING WALL TO BE DEMO

(E) STATUE TO BE RELOCATE TO PLACE INSIDE BUDDHA HALL, AND BASE TO BE DEMO

EXISTING CONCRETE STAIR TO BE DEMO

EXISTING DIRT PARKING AREA

(C,D) STATUE/MONUMENT TO BE RELOCATE TO PLACE INSIDE BUDDHA HALL

EXISTING TO BE DEMO

15'-0"

25'-0"

EXISTING FENCE TO BE DEMO

(B) STATUE/MONUMENT TO REMAIN

EXISTING TO BE DEMO

EXISTING BUILDING 2 TO BE DEMO (PER PHASE)

5 (E)

BUILDING SETBACK

PARKING SETBACK

15'-0"

25'-0"

EXISTING PARKING

11 (E)

12 (E)

EXISTING RESIDENTIAL BUILDING TO BE DEMO (PER PHASE)

(G,H) STATUE/MONUMENT TO RELOCATE

EXISTING CONCRETE PLATFORM TO BE DEMO

(F) STATUE/MONUMENT TO RELOCATE

EXISTING TO BE DEMO

8 (E)

13 (E)

CHINO HILLS PARKWAY

778.54'

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVE

01 PH-0 DEMOLITION SITE PLAN
Scale : 1/30" = 1'-0"

REGISTERED ARCHITECT
KONOK PANICHAPAN
No. C-29344
EXP. 11-30-2015
STATE OF CALIFORNIA

architecture
planning
interior

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DEMOLITION SITE PLAN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

PH-0

LITTLE CHINO CREEK CHANNEL

RUSTIC DRIVE

CHINO HILLS PARKWAY

PARKING SETBACK

BUILDING SETBACK

20'-0"

15'-0"

DETENTION BASIN

ROUGH GRADING

PHASE 1

FIRE WATER

PROVIDE AND INSTALL LOOPED FIRE WATER SYSTEM. CAP AS REQUIRED FOR FUTURE HYDRANTS.

CONSTRUCT SITE UTILITY, PARKING AND ACCESS

FIRE HYDRANTS TO BE INSTALL DURING PHASE 1 (TYP.)

ELECTRICAL TRANSFORMER

CONSTRUCT RESTROOM & KITCHEN

CONSTRUCT BUDDHA HALL

130'-5"

181'-0"

198'-0"

F.H.

EXISTING BUILDING 1 OCCUPIED DURING CONSTRUCTION PHASE 1 AND 2 AS MONK RESIDENT

EXISTING DRIVEWAY

EXISTING DRIVEWAY AND PARKING OCCUPIED DURING CONSTRUCTION PHASE 1 AND 2

PROVIDE AND INSTALL LOOPED FIRE WATER SYSTEM. CAP AS REQUIRED FOR FUTURE HYDRANTS.

EXISTING PARKING TO BE OCCUPIED DURING PHASE 1 AND 2 (TYP.)

LOCATION OF FIRE HYDRANT TO BE INSTALLED IN PHASE 3.

EXISTING BUILDING 2 OCCUPIED DURING CONSTRUCTION PHASE 1 AS OFFICE, MEETING ROOM, STORAGE, AND TOILET. OCCUPY AS STORAGE ON PHASE 2.

EXISTING GRAVEL PARKING STALLS AND PLANTS TO REMAIN IN PHASE 1 AND 2

EXISTING CONCRETE PLATFORM TO BE DEMOLISH

PROVIDE AND INSTALL LOOPED FIRE WATER SYSTEM. CAP AS REQUIRED FOR FUTURE HYDRANTS.

26'-0"

09 A-1.3

35' RADIUS (TYP.)

35'-0"

35'-0"

01 PH-1 PHASING PLAN 1
Scale : 1"= 30'-0"

PHASE 1

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

TOTAL PHASE 1 AREA: 107,425 SQ.FT.
TOTAL PHASE 1 LANDSCAPE AREA: 25,871 SQ.FT.
TOTAL PHASE 1 LANDSCAPE PERCENTAGE: 24%

TOTAL PHASE 1 PARKING AREA: 53,549 SQ.FT.
TOTAL PHASE 1 PARKING LANDSCAPE: 4,655 SQ.FT.
TOTAL PHASE 1 PARKING LANDSCAPE PERCENTAGE: 8.5%

ROUGH GRADING AREA: 20,827 SQ.FT.

REQUIRED PARKING

NEW CONSTRUCTION
DANCE CLASSROOM: 31 PARKING STALLS
MULTI-PURPOSE CLASSROOM: 103 PARKING STALLS
OFFICE: 6 PARKING STALLS

EXISTING STRUCTURE
BUILDING 1: 5 PARKING STALLS
BUILDING 2: 5 PARKING STALLS

EXISTING BUILDING
BUILDING 1: MONK RESIDENT 3,484 SF (5 BEDROOMS)
BUILDING 2: STORAGE 5,458 SF (1 STALL PER 1,000 SF)

TOTAL PARKING STALLS REQUIRED: 150 PARKING STALLS
(PHASE 1 COMPLETION)

PROVIDED PARKING
NEW CONSTRUCTED PARKING: 131 PARKING STALLS

EXISTING PARKING (LOCATED AT THE SOUTH OF EXISTING BUILDING): 59 PARKING STALLS

TOTAL PARKING PROVIDED: 131 + 49 = 180 PARKING STALLS

NOTE: BUILDING 1 OCCUPIED AS MONK RESIDENT DURING CONSTRUCTION PHASE 1 AND 2.

BUILDING 2 OCCUPIED AS OFFICE, MEETING ROOM, STORAGE, AND TOILET DURING CONSTRUCTION PHASE 1. AFTER THE COMPLETION OF PHASE 1, BUILDING 2 OCCUPIED AS STORAGE.

CLEAN AIR VEHICLES:

PARKING STALLS:
PHASE I (150)
REQUIRED STALLS: 11
PROVIDED STALLS: 11

LICENSED ARCHITECT PANICHAPAN KONOK MACK No. C-29344 EXP. 11-30-2015 STATE OF CALIFORNIA

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SCALE: 1/30" = 1'-0"	

PHASING PLAN 1

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

PH-1

LITTLE CHINO CREEK CHANNEL

RUSTIC DRIVE

CHINO HILLS PARKWAY

PARKING SETBACK

BUILDING SETBACK

15'-0"

20'-0"

PHASE 2

PHASE 1

CONSTRUCT DORMITORY BUILDING

DETENTION BASIN

TRASH ENCLOSURE

INSTALLED LOOPED FIRE WATER SYSTEM. (PHASE 1)

FIRE WATER

F.H.

EXISTING BUILDING 2 OCCUPIED DURING CONSTRUCTION PHASE 2 AS STORAGE. TO BE DEMOLISHED AFTER THE PHASE 2 COMPLETED.

EXISTING BUILDING 1 OCCUPIED DURING CONSTRUCTION PHASE 2 AS MONK RESIDENT. TO BE DEMOLISHED AFTER PHASE 2 COMPLETED.

EXISTING STATUE TO RELOCATE

EXISTING TO DEMOLISH

WALL TO BE DEMOLISH

EXISTING DRIVEWAY AND PARKING OCCUPIED DURING CONSTRUCTION PHASE 1 AND 2

EXISTING DRIVEWAY

CONSTRUCT SITE UTILITY, PARKING, AND ACCESS

EXISTING PARKING TO BE OCCUPIED DURING PHASE 1 AND 2 (TYP.)

LOCATION OF FIRE HYDRANT TO BE INSTALLED IN PHASE 3

(F) STATUE/MONUMENT TO RELOCATE

(G,H) STATUE/MONUMENT TO RELOCATE

EXISTING TO BE DEMOLISH

130'-5"
181'-0"
198'-0"

26'-0"

35' RADIUS (TYP.)

35'-0"

09 A-1.3

48 43 32 18 62 5 (E) 8 (E) 11 (E) 12 (E) 13 (E)

CLEAN AIR VEHICLES:

PARKING STALLS:
PHASE II (178)
REQUIRED STALLS: 16
PROVIDED STALLS: 16

01 PH-2 PHASING PLAN 2
Scale : 1"= 30'-0"

PHASE 2

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

TOTAL PHASE 2 AREA: 20,827 SQ.FT.
TOTAL PHASE 2 LANDSCAPE AREA: 6,029 SQ.FT.
TOTAL PHASE 2 LANDSCAPE PERCENTAGE: 28%

NO PARKING AREA DEVELOPMENT DURING CONSTRUCTION OF PHASE 2.

REQUIRED PARKING

NEW CONSTRUCTION
MONK DORMITORY: 28 PARKING STALLS

TOTAL STALLS REQUIRED ON PHASE 2: 28 PARKING STALLS

TOTAL STALLS REQUIRED ON PHASE 1: 150 PARKING STALLS

EXISTING STRUCTURE
BUILDING 1: 5 PARKING STALLS
BUILDING 2: 5 PARKING STALLS

EXISTING BUILDING
BUILDING 1: MONK RESIDENT 3,484 SF. (5 BEDROOMS)
BUILDING 2: STORAGE 5,458 SF. (1 STALLS PER 1,000 SF.)

TOTAL PARKING STALLS REQUIRE: 178 PARKING STALLS
(PHASE 2 COMPLETION)

PROVIDED PARKING
NEW CONSTRUCTED PARKING: 131 PARKING STALLS

EXISTING PARKING (LOCATED AT THE SOUTH OF EXISTING BUILDING): 59 PARKING STALLS

TOTAL PARKING PROVIDED: 131 + 49 = 180 PARKING STALLS

NOTE: BUILDING 1 OCCUPIED AS MONK RESIDENT DURING CONSTRUCTION PHASE 2.

BUILDING 2 OCCUPIED AS STORAGE DURING CONSTRUCTION PHASE 2.

LICENSED ARCHITECT LONNIE MANCHAPAN No. C-29344 EXP. 11-30-2015 STATE OF CALIFORNIA

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SCALE: 1/30" = 1'-0"

PHASING PLAN 2

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

PH-2

LITTLE CHINO CREEK CHANNEL

RUSTIC DRIVE

CHINO HILLS PARKWAY

PHASE 1

PHASE 2

PHASE 3

DETENTION BASIN

FIRE WATER

INSTALLED LOOPED FIRE WATER SYSTEM. (PHASE 1)

MAIN SWITCH BOARD

CONSTRUCT MULTI-PURPOSE BUILDING

PLACE THE RELOCATED STATUES

CONSTRUCT CONCRETE WALK

PROVIDE AND INSTALL NEW FIRE HYDRANT

BUILDING SETBACK

PARKING SETBACK

15'-0"

25'-0"

F.H.

CLEAN AIR VEHICLE

VAN

01 PHASING PLAN 3
PH-3 Scale : 1"= 30'-0"

PHASE 3

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

TOTAL PHASE 3 AREA: 189,736 SQ.FT.
TOTAL PHASE 3 LANDSCAPE AREA: 93,018 SQ.FT.
TOTAL PHASE 3 LANDSCAPE PERCENTAGE: 49%

TOTAL PHASE 3 PARKING AREA: 62,737 SQ.FT.
TOTAL PHASE 3 PARKING LANDSCAPE: 4,343 SQ.FT.
TOTAL PHASE 3 PARKING LANDSCAPE PERCENTAGE: 7%

SITE AREA SUMMARY

TOTAL SITE AREA: 317,988 SQ.FT.
TOTAL PARKING AREA: 116,286 SQ.FT
TOTAL LANDSCAPE AREA: 124,918 SQ.FT.

TOTAL LANDSCAPE PERCENTAGE: 39%
TOTAL PARKING LANDSCAPE PERCENTAGE: 7.5%

PROPOSED BUILDING:
BUILDING AREA: DORMITORY - 9,025 SQ.FT.
BUDDHA HALL - 3,100 SQ.FT.
MULTI-PURPOSE BLDG - 11,267 SQ.FT.
PARKING REQUIRED: 292 STALLS + 7 ADA STALLS
PARKING PROVIDED: 293 STALLS + 7 ADA STALLS

REQUIRED PARKING

THE PROPOSED PHASE 3 PLAN CONTAINS ALL REQUIRED 299 (292 STALLS AND 7 ADA STALLS) PARKING STALLS WITH ONE ADDITION NON-ADA STALL.

SEE SHEET A-1.1 FOR ADDITIONAL INFORMATION

CLEAN AIR VEHICLES:

PARKING STALLS:
(ALL PHASES)
PHASE III 8% OF 300 = 24
REQUIRED STALLS: 24
PROVIDED STALLS: 24

REGISTERED ARCHITECT PANICHAPAN KONOK NO. C-29414 STATE OF CALIFORNIA

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5TH PLANNING SUBMITTAL

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JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/30" = 1'-0"

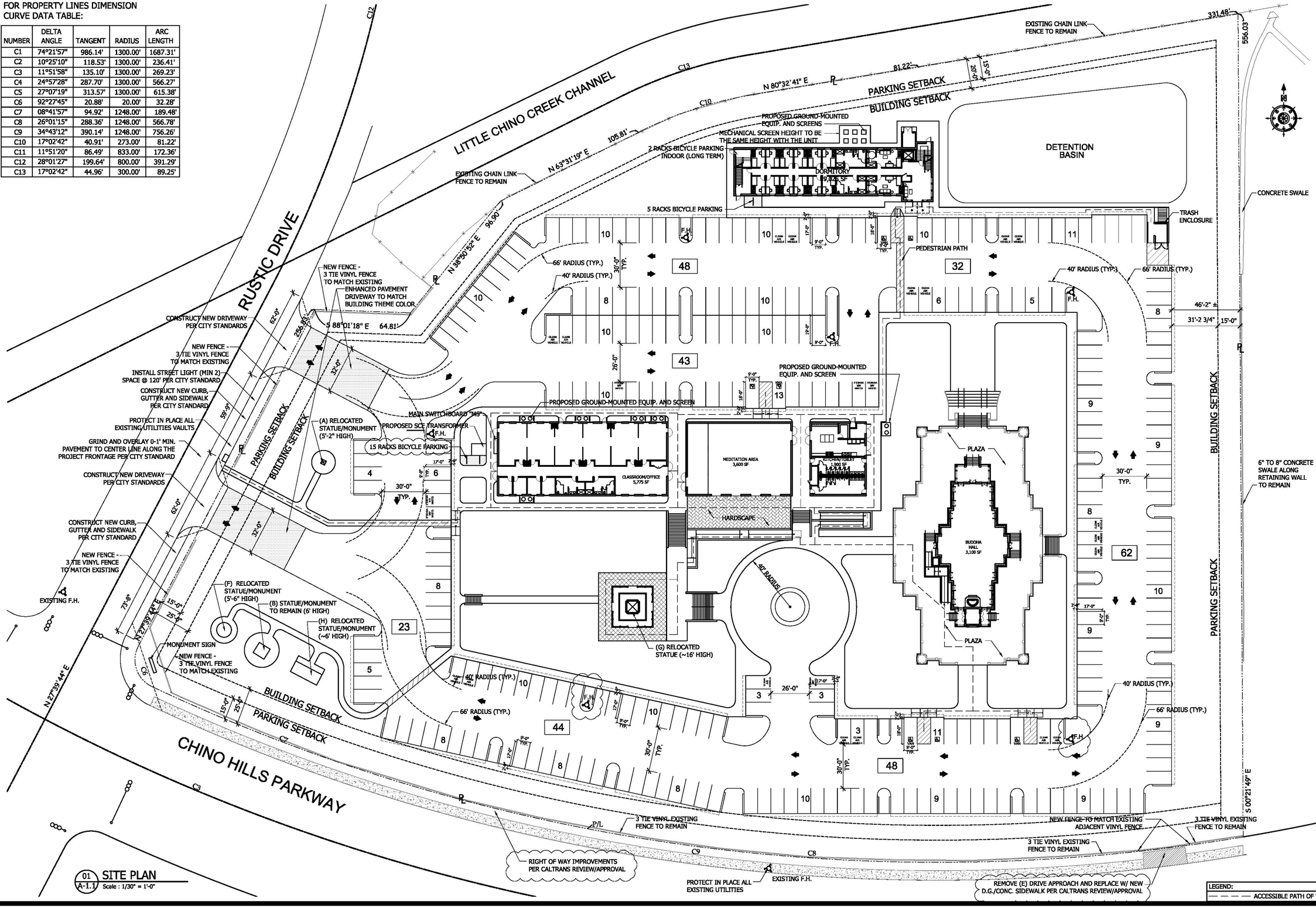
PHASING PLAN 3

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

PH-3

FOR PROPERTY LINES DIMENSION
CURVE DATA TABLE:

NUMBER	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
C1	74°21'57"	986.14'	1300.00'	1687.31'
C2	10°25'10"	118.53'	1300.00'	236.41'
C3	11°51'58"	135.10'	1300.00'	269.23'
C4	24°57'28"	287.70'	1300.00'	566.27'
C5	27°07'19"	313.57'	1300.00'	615.38'
C6	92°27'45"	20.88'	20.00'	32.28'
C7	08°41'57"	94.92'	1248.00'	189.48'
C8	26°01'15"	288.36'	1248.00'	566.78'
C9	34°43'12"	390.14'	1248.00'	756.26'
C10	17°02'42"	40.91'	273.00'	81.22'
C11	11°51'20"	86.49'	833.00'	172.36'
C12	28°01'27"	199.64'	800.00'	391.29'
C13	17°02'42"	44.96'	300.00'	89.25'



01 SITE PLAN
A-1.1 Scale : 1/30" = 1'-0"

LICENSED ARCHITECT KONOK MANCHAPHAN No. C-29414 REN 11/30/2015 STATE OF CALIFORNIA

architecture planning interior

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5TH PLANNING SUBMITTAL

JOB NO.: 3212 DATE: 09/13/16
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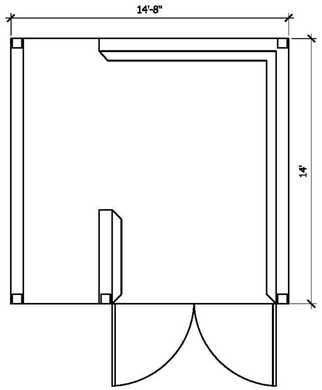
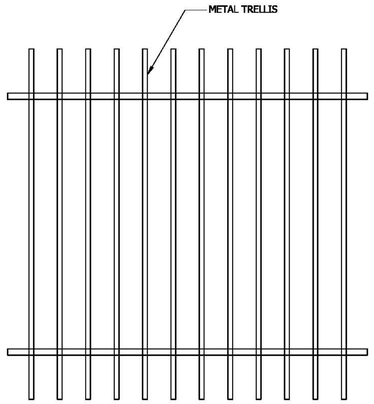
CHECKED BY: LP
SCALE: 1/30" = 1'-0"

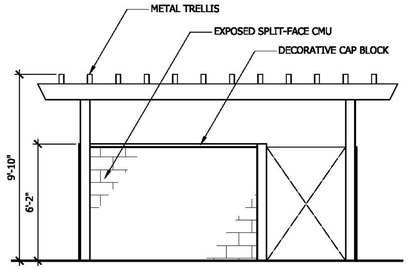
WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

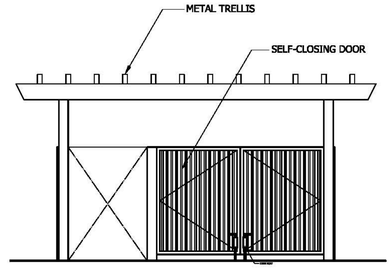
SITE PLAN

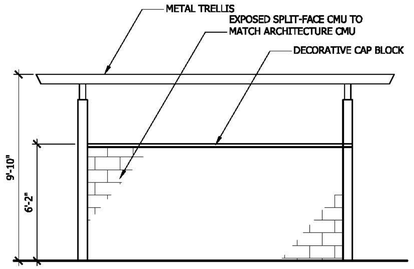
A-1.1











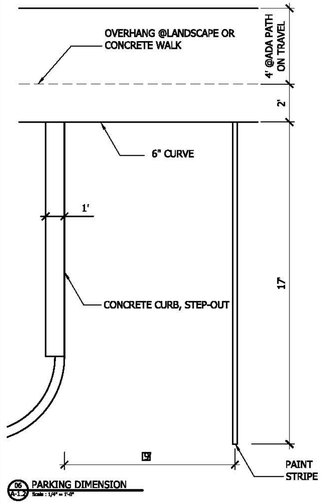
01 TRASH ENCLOSURE PLAN
A-1.2 Scale : 1/4" = 1'-0"

02 TRASH ENCLOSURE ROOF PLAN
A-1.2 Scale : 1/4" = 1'-0"

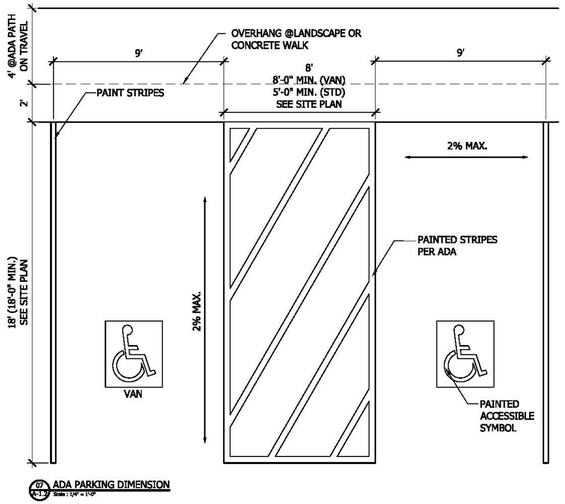
03 TRASH ENCLOSURE ELEVATION
A-1.2 Scale : 1/4" = 1'-0"

04 TRASH ENCLOSURE ELEVATION
A-1.2 Scale : 1/4" = 1'-0"

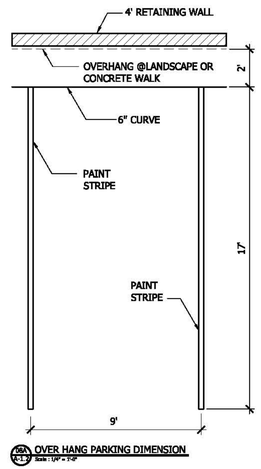
05 TRASH ENCLOSURE ELEVATION
A-1.2 Scale : 1/4" = 1'-0"



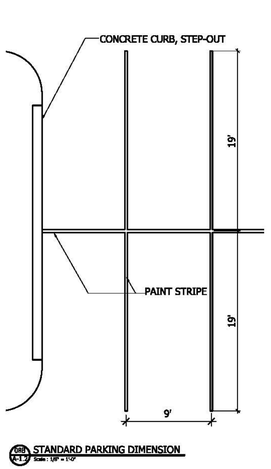
06 PARKING DIMENSION
A-1.2 Scale : 1/4" = 1'-0"



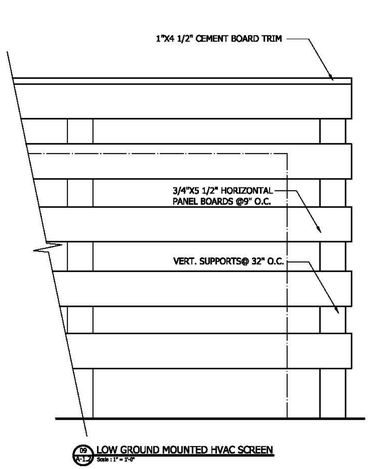
07 ADA PARKING DIMENSION
A-1.2 Scale : 1/4" = 1'-0"



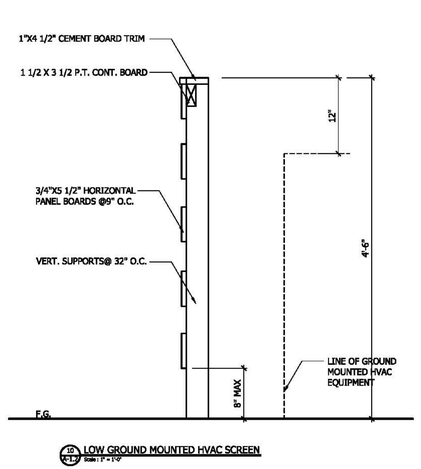
06A OVER HANG PARKING DIMENSION
A-1.2 Scale : 1/4" = 1'-0"



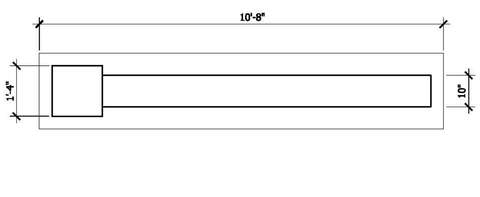
06B STANDARD PARKING DIMENSION
A-1.2 Scale : 1/4" = 1'-0"



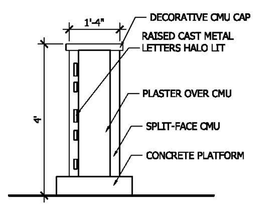
09 LOW GROUND MOUNTED HVAC SCREEN
A-1.2 Scale : 1" = 1'-0"



10 LOW GROUND MOUNTED HVAC SCREEN
A-1.2 Scale : 1" = 1'-0"

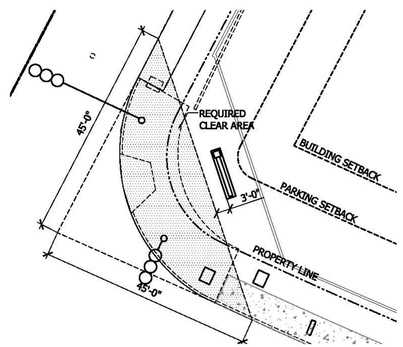


11 SIGN MONUMENT PLAN
A-1.2 Scale : 1/2" = 1'-0"

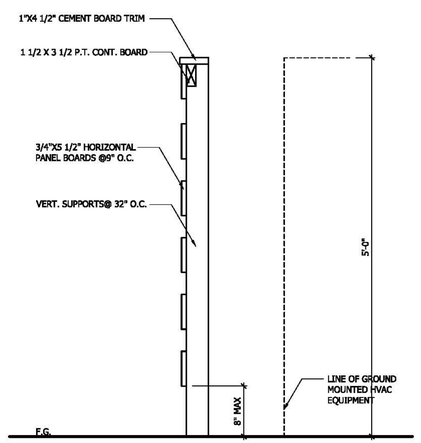


12 SIGN MONUMENT ELEVATION 1
A-1.2 Scale : 1/2" = 1'-0"

13 SIGN MONUMENT ELEVATION 2
A-1.2 Scale : 1/2" = 1'-0"



14 SIGN MONUMENT LAYOUT
A-1.2 Scale : 1/16" = 1'-0"



15 GROUND MOUNTED HVAC SCREEN
A-1.2 Scale : 1" = 1'-0"

GONICH PANICHAPAN
LICENSED ARCHITECT
No. C-29414
EXP. 11-30-2015
STATE OF CALIFORNIA

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5TH PLANNING SUBMITTAL

DATE:	09/13/16
JOB NO.:	3212
DRAWN BY:	STAFF
CHECKED BY:	LP
SCALE:	AS NOTED

SITE DETAIL AND MONUMENT SIGN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-1.2

DIMENSION: 3'x3' BASE, AND 5'-2" HEIGHT

01 A-1.3 STATUE A
Scale : Not to Scale

DIMENSION: 4'x4' BASE, AND 6' HEIGHT
STATUE A TO REMAIN AT THE EXISTING LOCATION

02 A-1.3 STATUE B
Scale : Not to scale

DIMENSION: 3'x3' BASE, AND 3' HEIGHT. TO BE MOVE INSIDE THE BUDDHA HALL.

03 A-1.3 STATUE C
Scale : Not to scale

DIMENSION: 3'x3' BASE, AND 3' HEIGHT. TO BE MOVE INSIDE THE BUDDHA HALL.

04 A-1.3 STATUE D
Scale : Not to scale

DIMENSION: 3'x3' BASE, AND 6' HEIGHT. TO BE MOVE INSIDE THE BUDDHA HALL.

05 A-1.3 STATUE E
Scale : Not to scale

DIMENSION: 8'x8' BASE, AND 5'-6" HEIGHT
ROOF AND CANOPY WILL BE DEMOLISH.

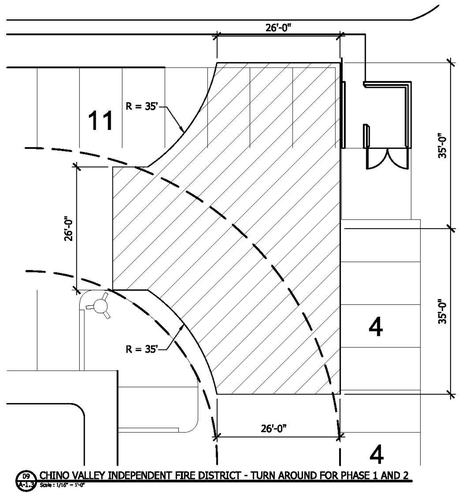
06 A-1.3 STATUE F
Scale : Not to Scale

DIMENSION: 10'x10' BASE, AND 16' HEIGHT

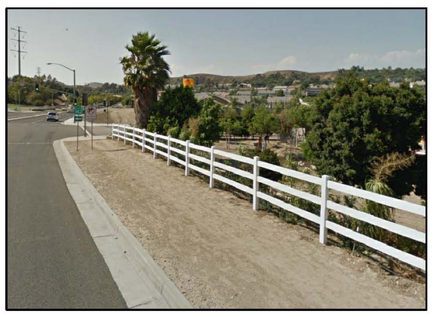
07 A-1.3 STATUE G
Scale : Not to scale

DIMENSION: 20'x9' BASE, AND 6' HEIGHT

08 A-1.3 STATUE H
Scale : Not to scale



09 A-1.3 CHINO VALLEY INDEPENDENT FIRE DISTRICT - TURN AROUND FOR PHASE 1 AND 2
Scale : 1/16" = 1'-0"



CHINO HILLS PARKWAY EXISTING 3 TIE VINYL FENCE TO REMAIN.

11 A-1.3 EXISTING FENCE
Scale : Not to Scale

CHINO HILLS PARKWAY RAMP ACCESS TO BE CLOSED WITH 3 TIE VINYL FENCE
TO MATCH EXISTING. SEE LOCATION ON A-1.1 SITE PLAN.

12 A-1.3 CHINO HILLS RAMP FENCE
Scale : Not to Scale

RUSTIC DRIVE EXISTING FENCE, 3 TIE VINYL, TO BE RELOCATE BEHIND THE EXISTING
PROPERTY LINE. EXISTING ENTRANCE GATE AND WALL TO BE DEMO. SEE LOCATION ON
A-1.1 SITE PLAN AND T-5 DEMOLITION PLAN.

13 A-1.3 RUSTIC DRIVE FENCE
Scale : Not to Scale

KONOK MACK PANICHAPAN
LICENSED ARCHITECT
No. C-29414
EXP. 11-2016
STATE OF CALIFORNIA

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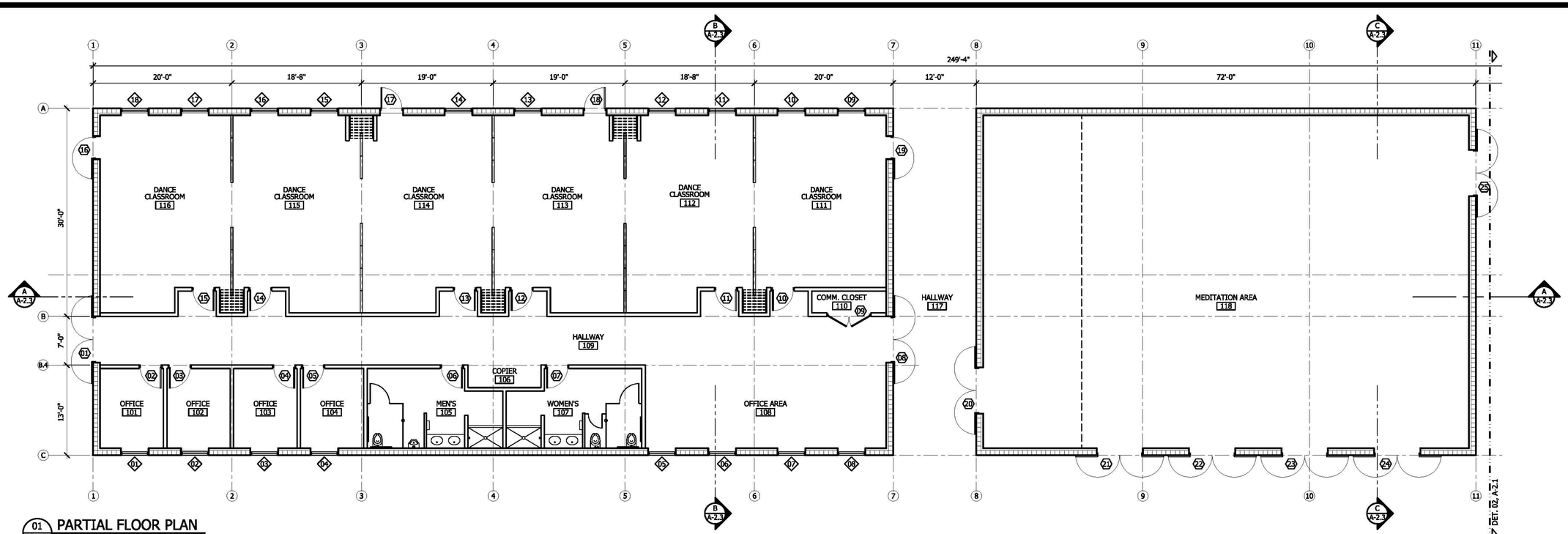
5TH PLANNING
SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: AS NOTED

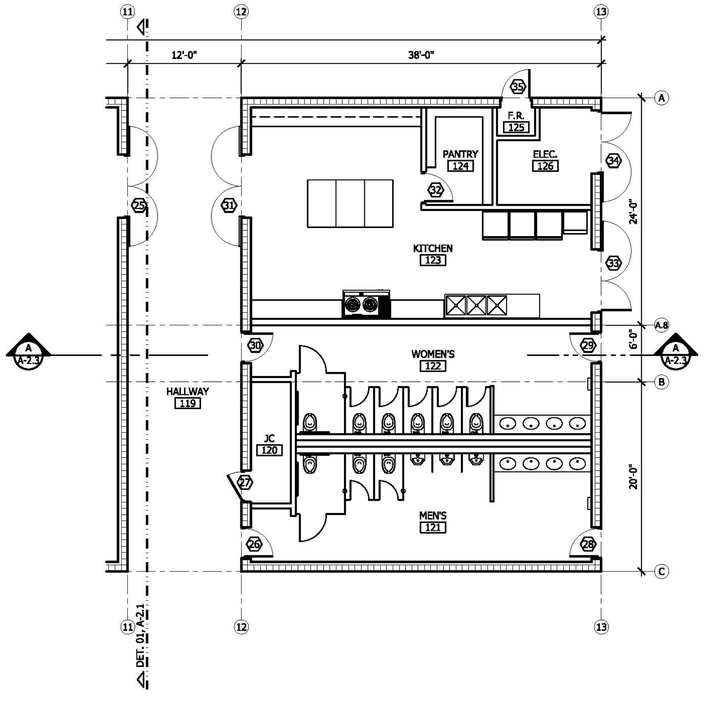
SITE DETAILS-STATUES AND FENCES

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-1.3



01 A-2.1 PARTIAL FLOOR PLAN
Scale : 1/8" = 1'-0"



02 A-2.1 PARTIAL FLOOR PLAN
Scale : 1/8" = 1'-0"

LEGEND:
- WINDOW TYPES
- DOOR TYPES

LICENSED ARCHITECT PANICHAPAN KONOK NO. C-29414 REN. 11/30/2015 STATE OF CALIFORNIA

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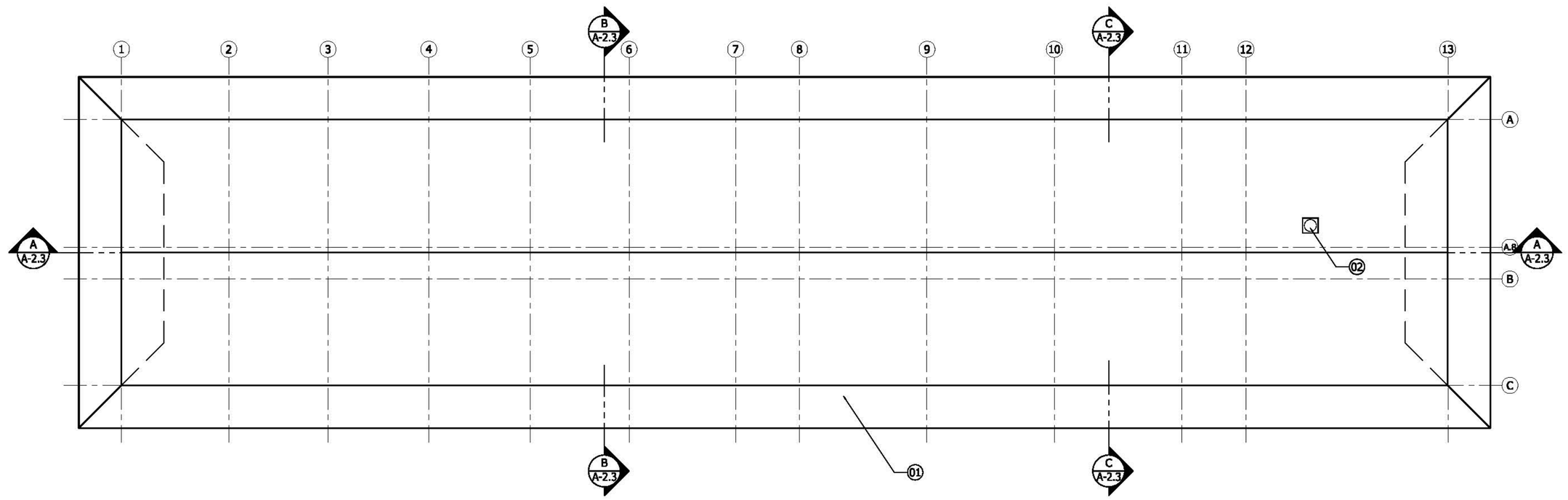
5TH PLANNING SUBMITTAL

MULTI-PURPOSE BLDG. FLOOR PLAN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/8" = 1'-0"
DATE: 09/13/16

A-2.1



01 A-2.2 MULTI-PURPOSE BLDG. ROOF PLAN
Scale : 1/16" = 1'-0"

KEYNOTES:
01 LIGHT WEIGHT CONCRETE ROOF TILE
02 ROOF TOP RANGE HOOD.COLOR TO HATCH ROOFING

LICENSED ARCHITECT KONKAMOL PANICHAPAN No. C 29414 EXP. 11/30/15 STATE OF CALIFORNIA

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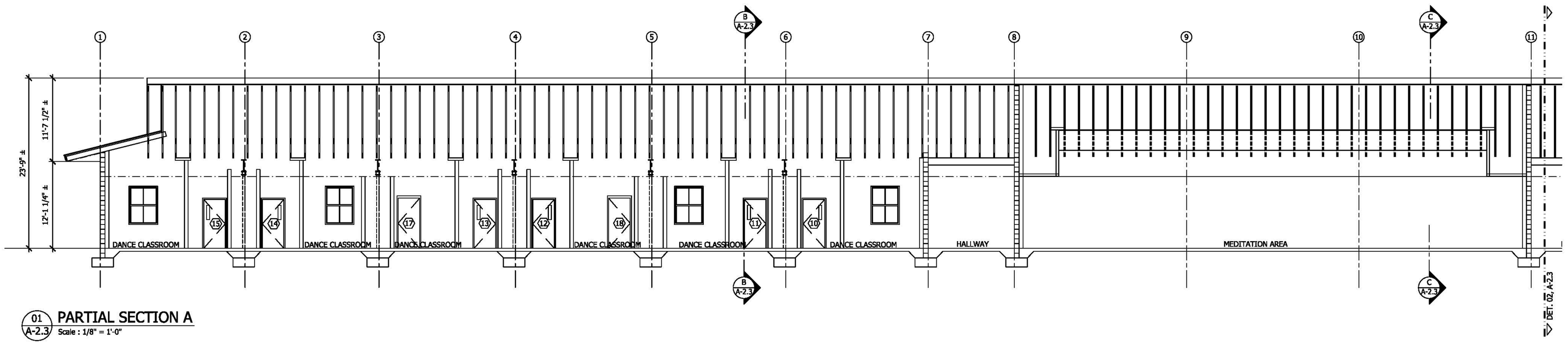
5TH PLANNING SUBMITTAL

JOB NO.: 3212 DATE: 09/13/16
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/16" = 1'-0"

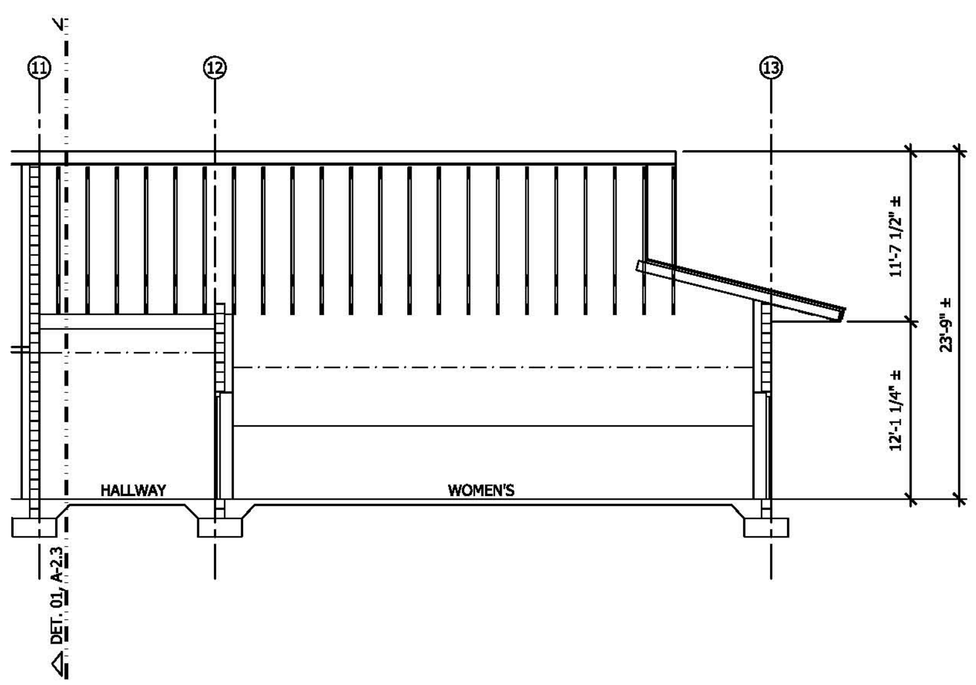
MULTI-PURPOSE BLDG. ROOF PLAN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

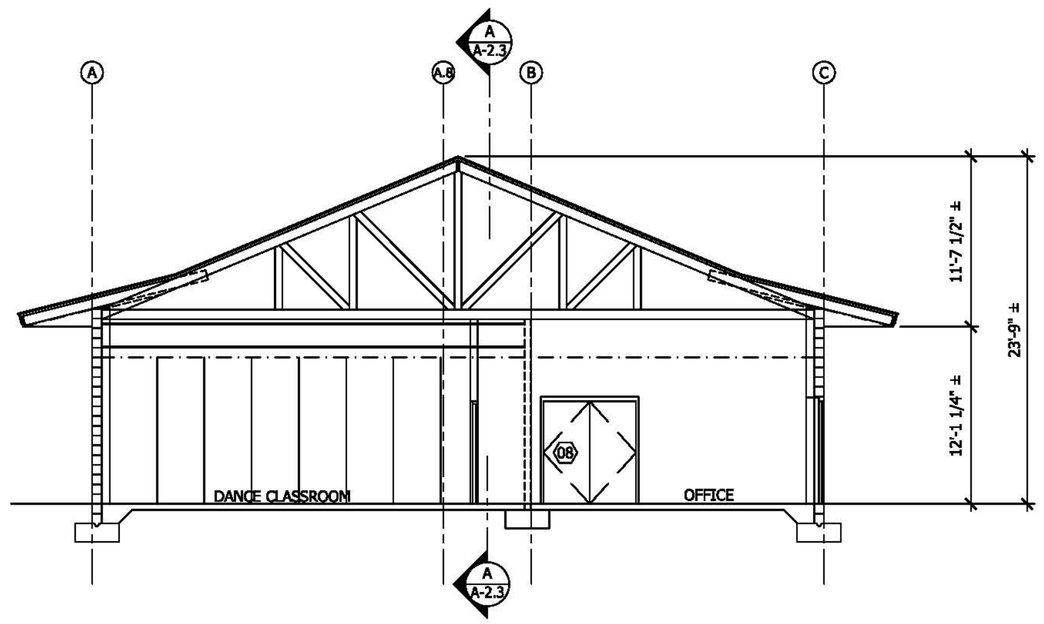
A-2.2



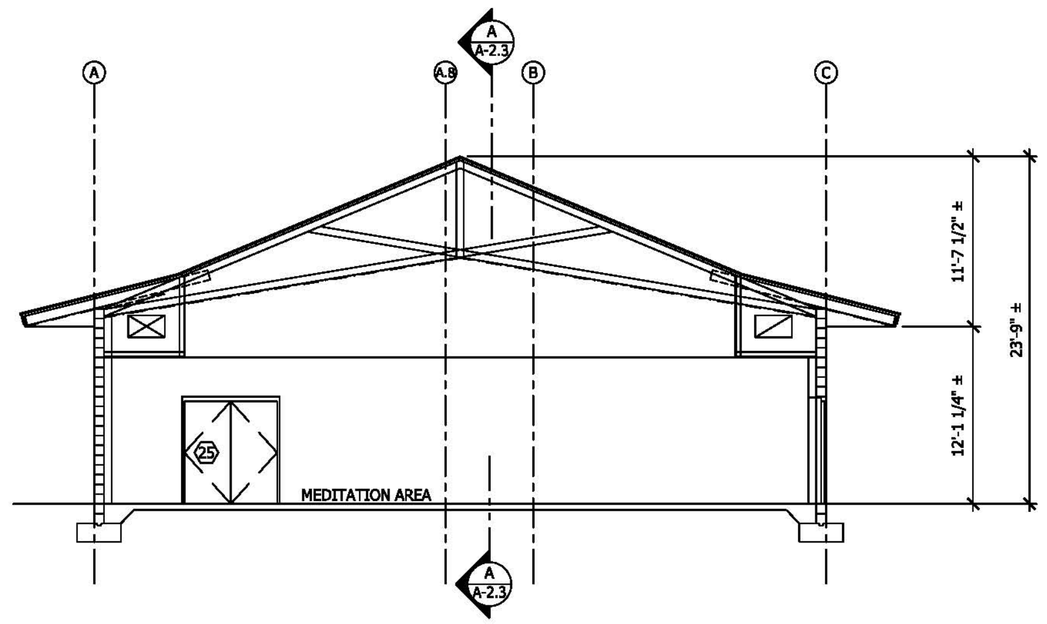
01 A-2.3 **PARTIAL SECTION A**
Scale : 1/8" = 1'-0"



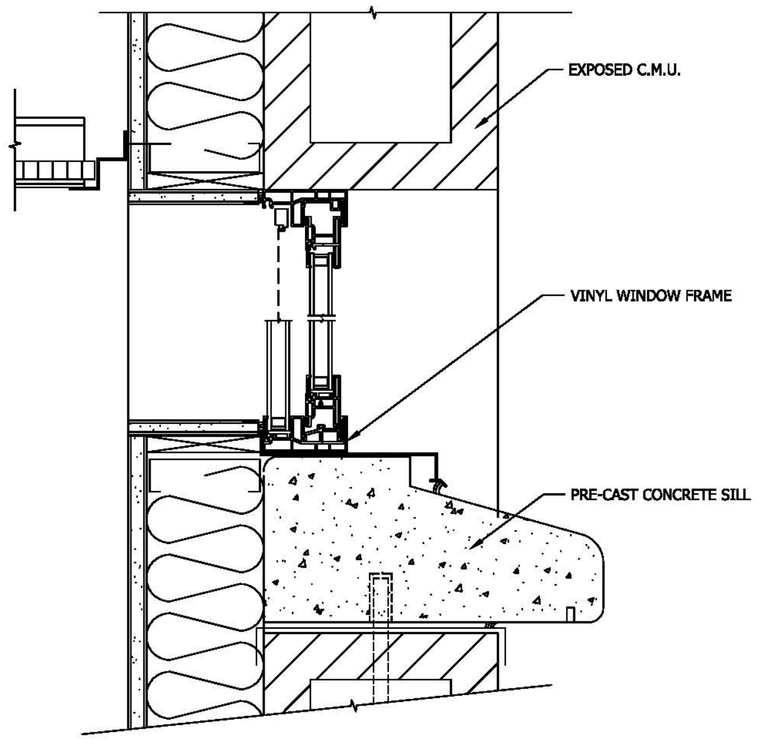
02 A-2.3 **PARTIAL SECTION A**
Scale : 1/8" = 1'-0"



03 A-2.3 **SECTION B**
Scale : 1/8" = 1'-0"



04 A-2.3 **SECTION C**
Scale : 1/8" = 1'-0"



05 A-2.3 **WINDOW HEAD (JAMB SIM.)/SILL @ C.M.U.**
Scale : 3" = 1'-0"

LEGEND:

05	WINDOW TYPES
05	DOOR TYPES

LICENSED ARCHITECT LORACH PANICHAPAN No. C-29414 REN 11/24/15 STATE OF CALIFORNIA

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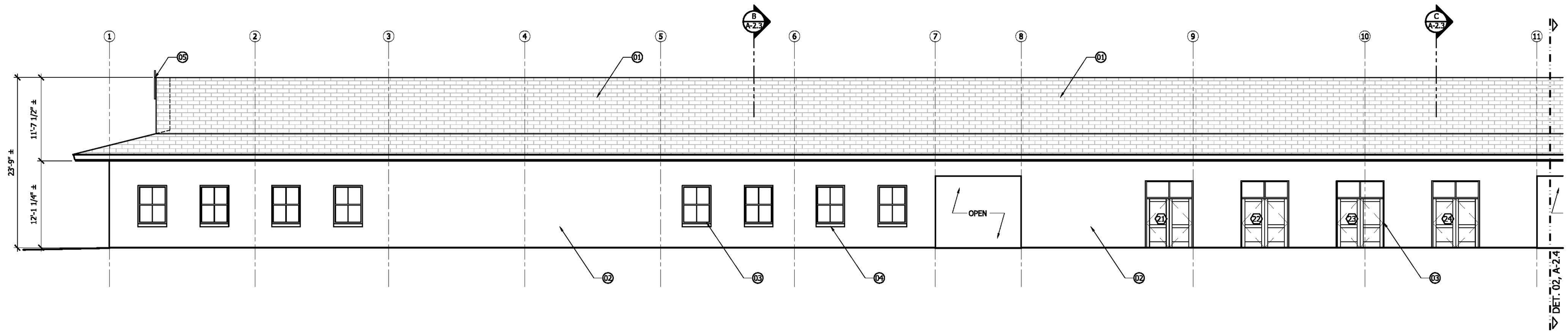
5TH PLANNING SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/8" = 1'-0"

MULTI-PURPOSE BLDG. SECTIONS

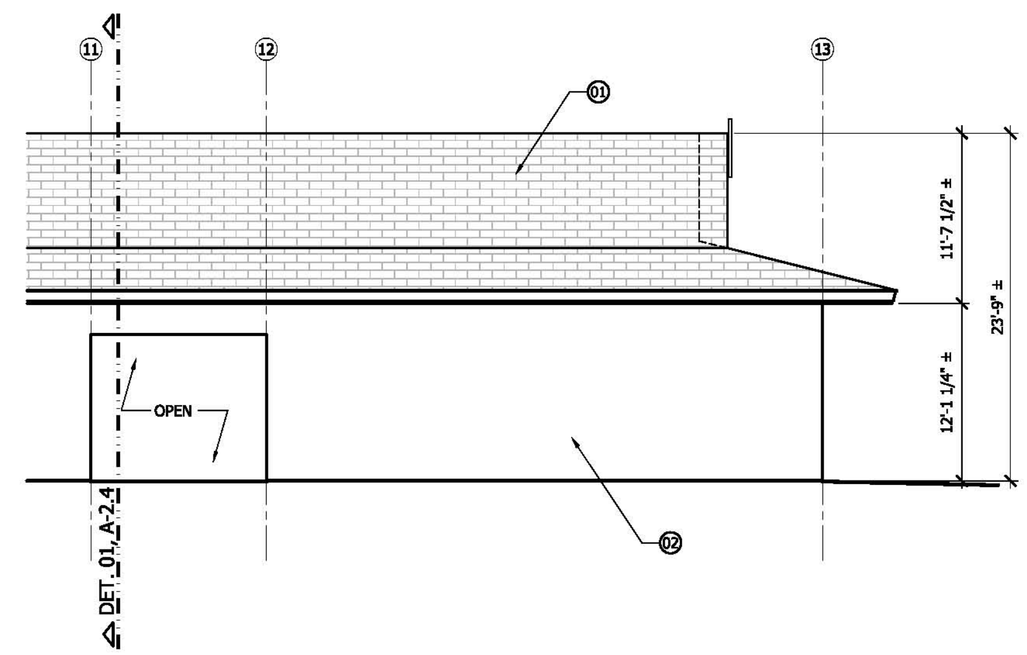
WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-2.3



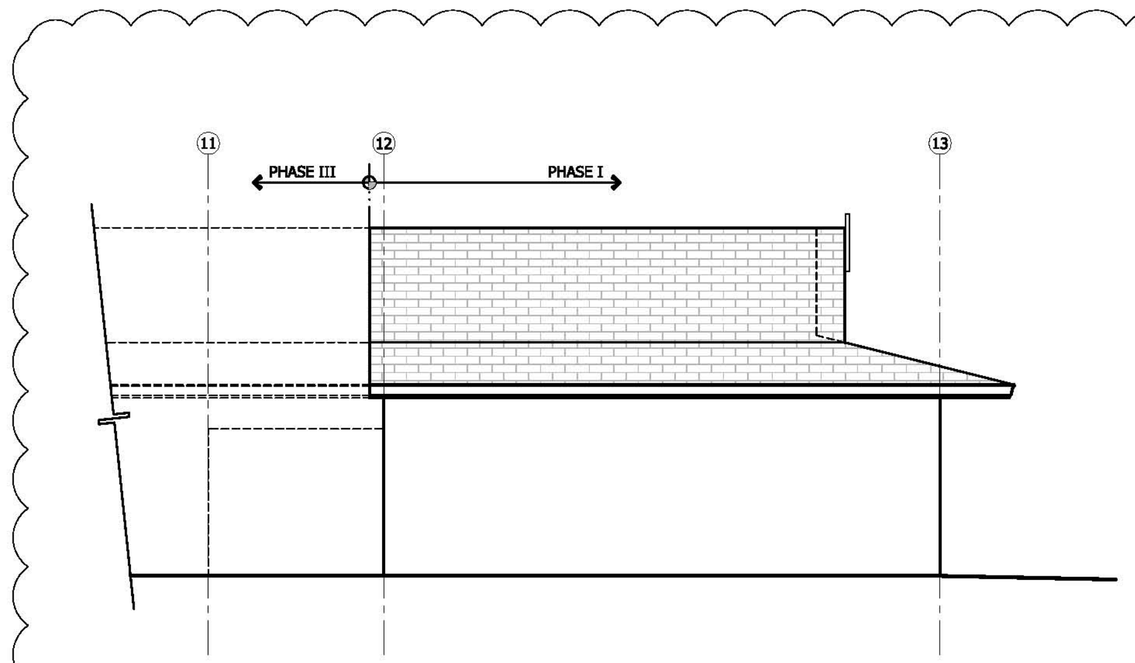
01 A-2.4 PARTIAL SOUTH ELEVATION

Scale : 1/8" = 1'-0"



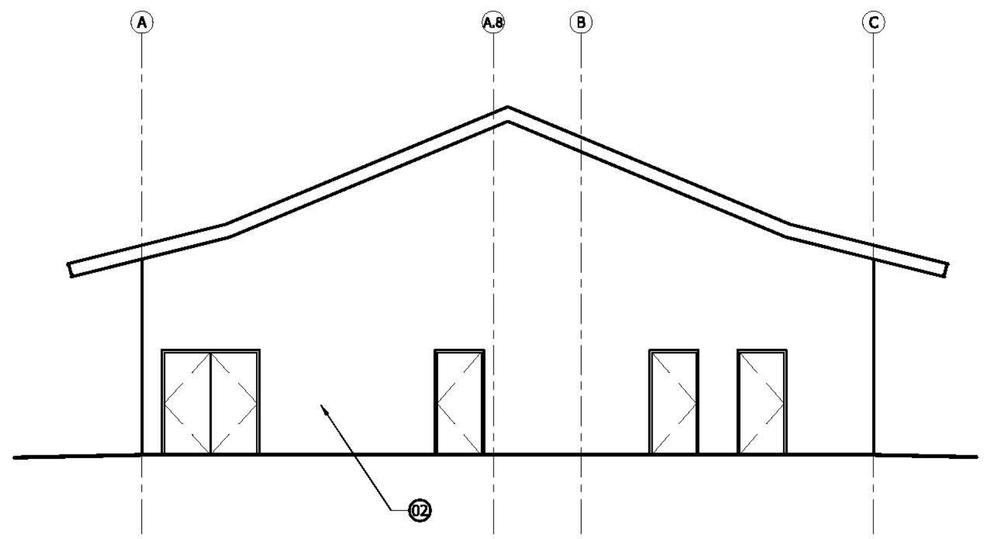
02 A-2.4 PARTIAL SOUTH ELEVATION

Scale : 1/8" = 1'-0"



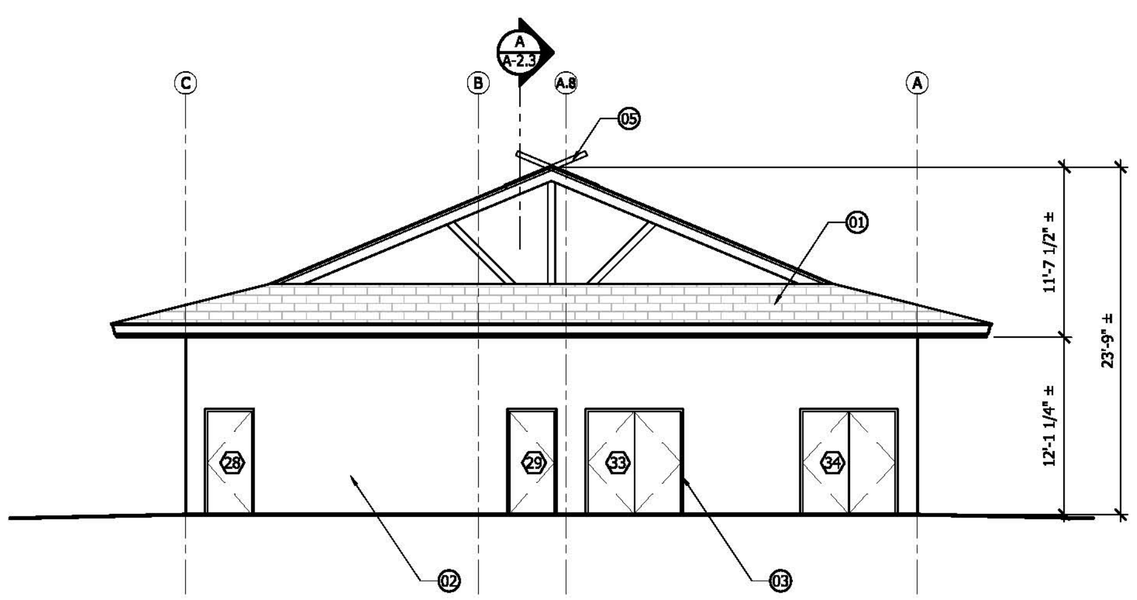
03 A-2.4 PARTIAL SOUTH ELEVATION

Scale : 1/8" = 1'-0"



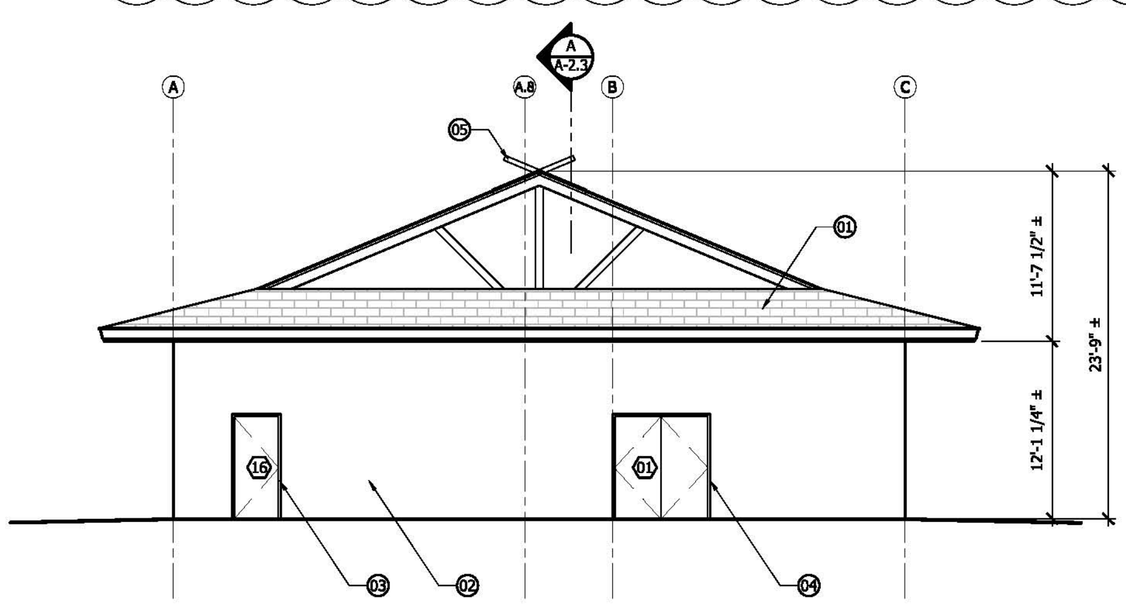
04 A-2.4 PARTIAL WEST ELEVATION (PHASE I)

Scale : 1/8" = 1'-0"



05 A-2.4 EAST ELEVATION

Scale : 1/8" = 1'-0"



06 A-2.4 WEST ELEVATION

Scale : 1/8" = 1'-0"

KEYNOTES:

- 01 LIGHT WEIGHT CONCRETE ROOF TILE
- 02 EXPOSED SHOT BLAST CMU
- 03 VINYL WINDOW & DOOR FRAME
- 04 PRE-CAST CONCRETE SILL
- 05 DECORATIVE ROOF ELEMENT

LICENSED ARCHITECT PANICHAPAN KONOK AMORN REG. NO. C-29415 EXP. 11-30-2015 STATE OF CALIFORNIA

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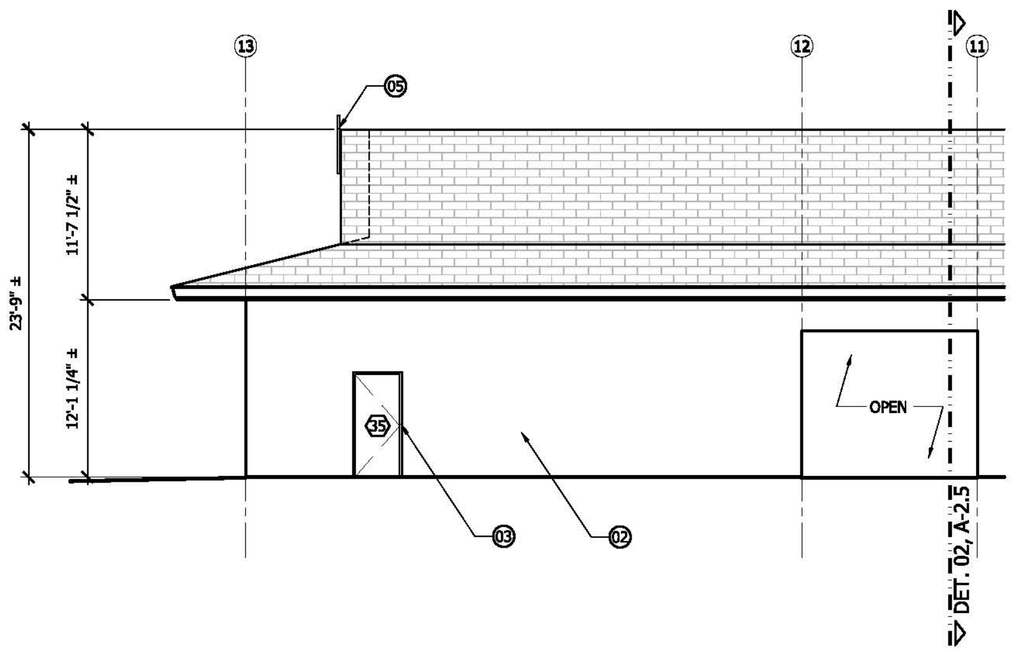
JOB NO.: 3212	DATE: 09/13/16
DRAWN BY: STAFF	
CHECKED BY: LP	
SCALE: 1/8" = 1'-0"	

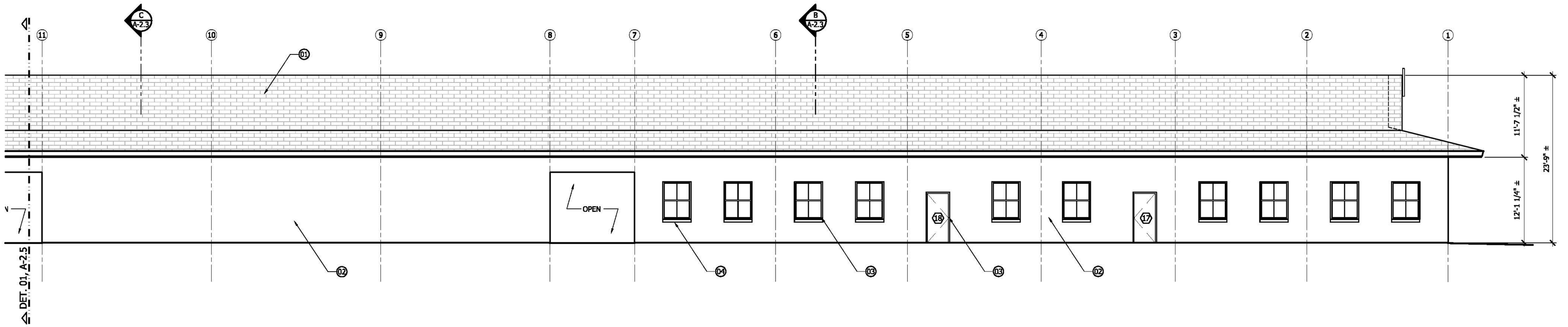
MULTI-PURPOSE BLDG. ELEVATIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-2.4



01 A-2.5 **PARTIAL NORTH ELEVATION**
Scale : 1/8" = 1'-0"



02 A-2.5 **PARTIAL NORTH ELEVATION**
Scale : 1/8" = 1'-0"

KEYNOTES:

01 LIGHT WEIGHT CONCRETE ROOF TILE
02 EXPOSED SHOT BLAST CMU
03 VINYL WINDOWS AND DOORS FRAME
04 PRE-CAST CONCRETE SILL
05 DECORATIVE ROOF ELEMENT

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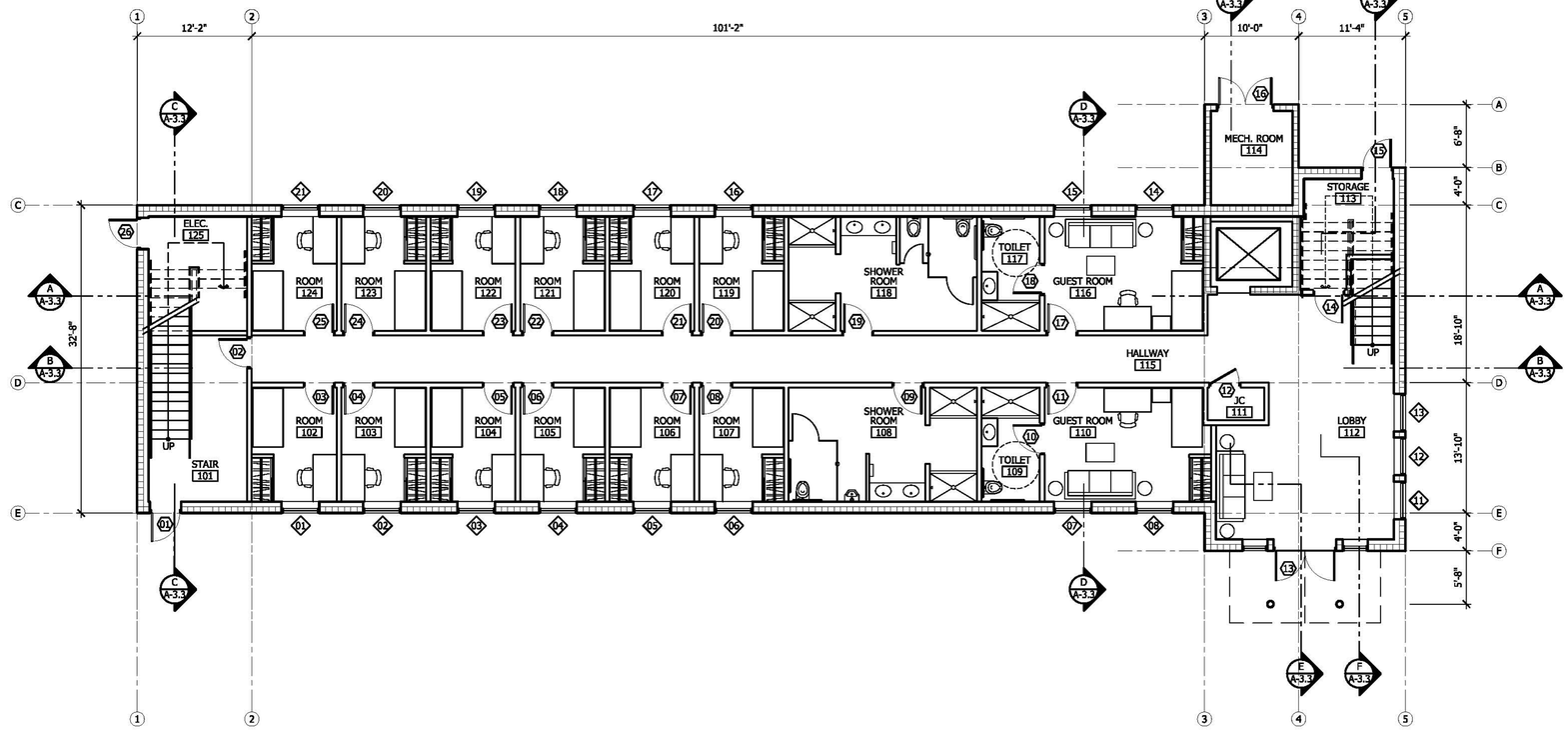
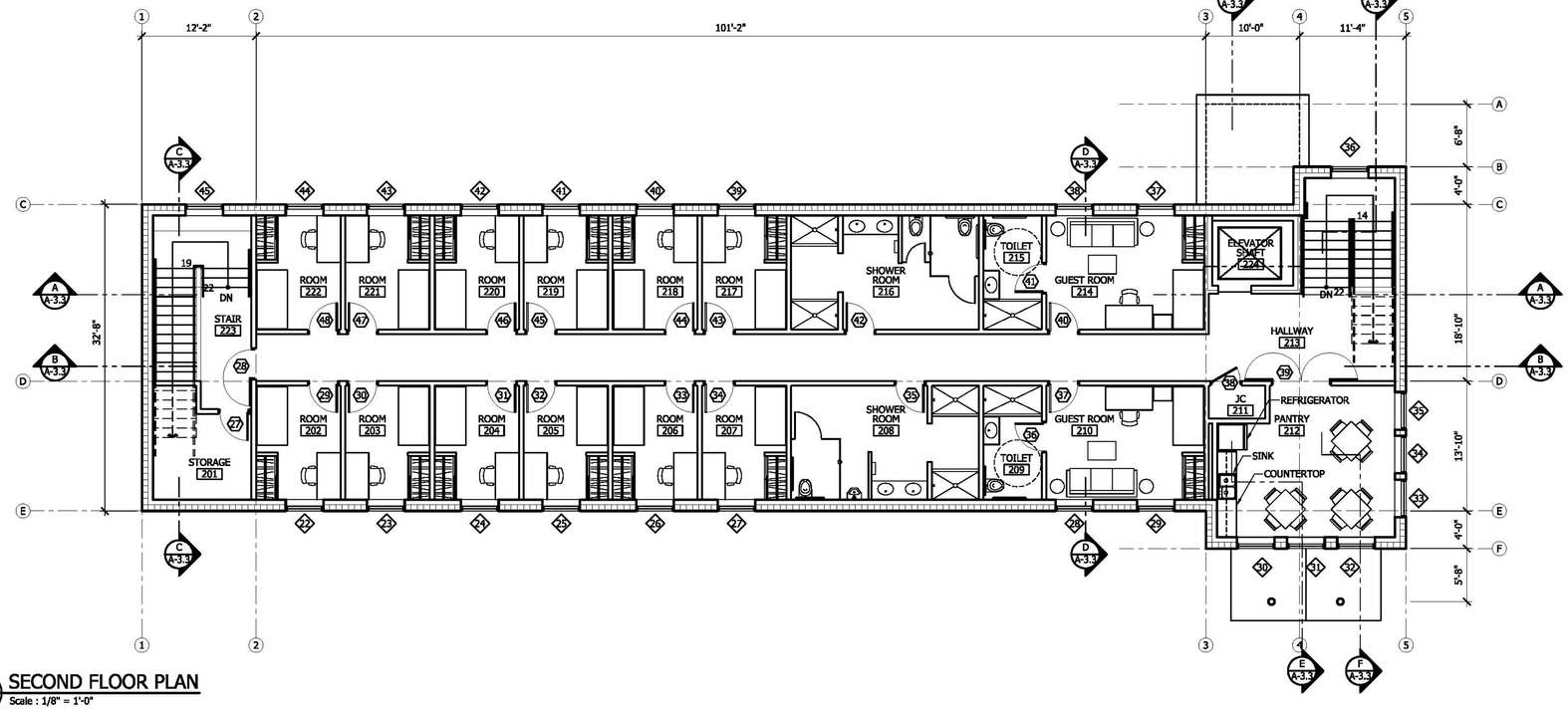
MULTI-PURPOSE BLDG. ELEVATIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-2.5



01 A-3.1 **FIRST FLOOR PLAN**
Scale : 1/8" = 1'-0"



02 A-3.1 **SECOND FLOOR PLAN**
Scale : 1/8" = 1'-0"

LEGEND:

- WINDOW TYPES
- DOOR TYPES

LICENSED ARCHITECT RONALD A. PANICHAPAN No. C-29214 EXP. 11-30-2016 STATE OF CALIFORNIA

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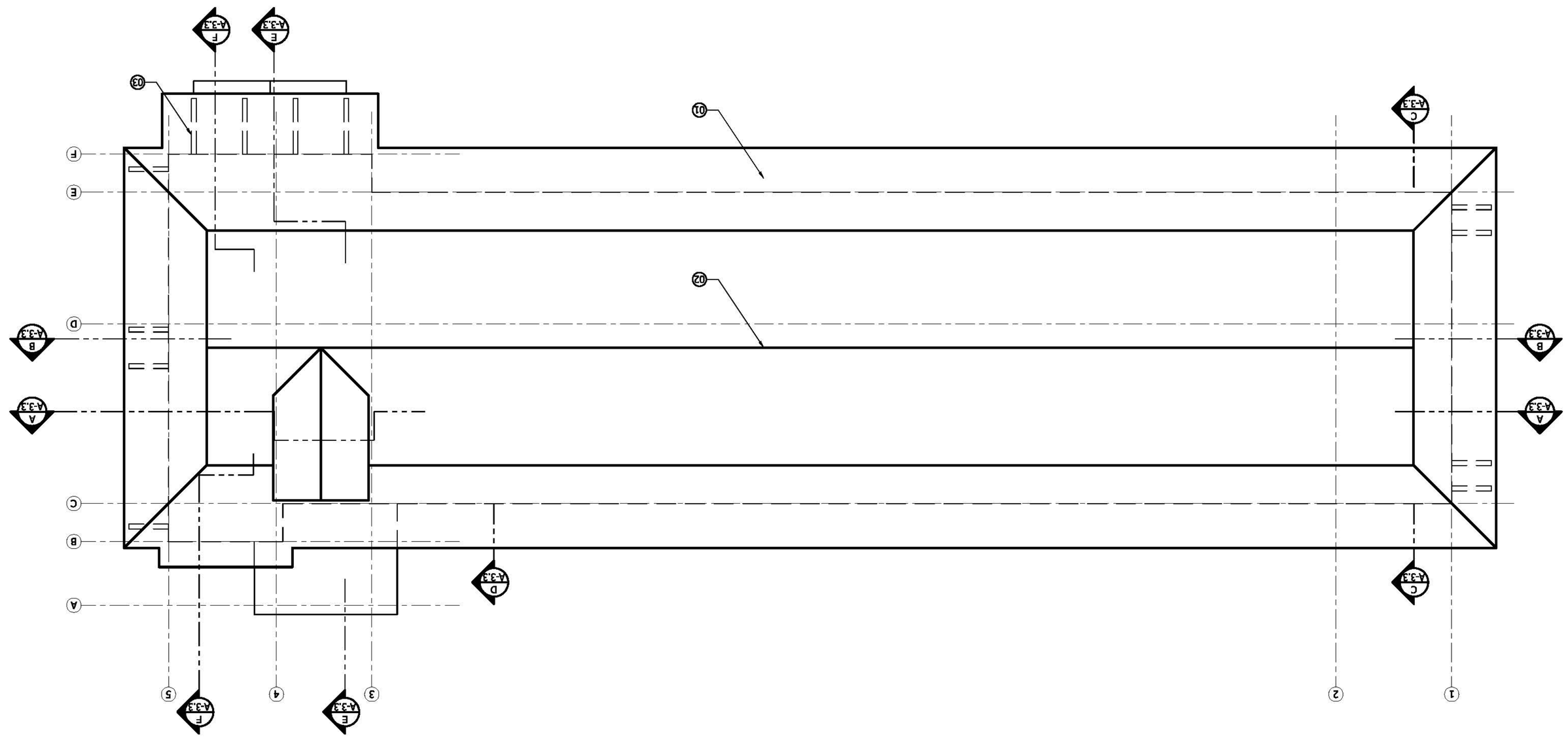
SCALE: 1/8" = 1'-0"

DORMITORY FLOOR PLANS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-3.1



01 DORMITORY ROOF PLAN
A-3.2 Scale : 1/8" = 1'-0"

KEYNOTES:
01 LIGHT WEIGHT CONCRETE ROOF TILE
02 RIDGE LINE
03 DECORATIVE EAVE SUPPORT, BELOW

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LONGKAVICH PANICHAPAN
STATE OF CALIFORNIA
07/31/17

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DORMITORY ROOF PLAN

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Wat Phra That Doi Suthep USA

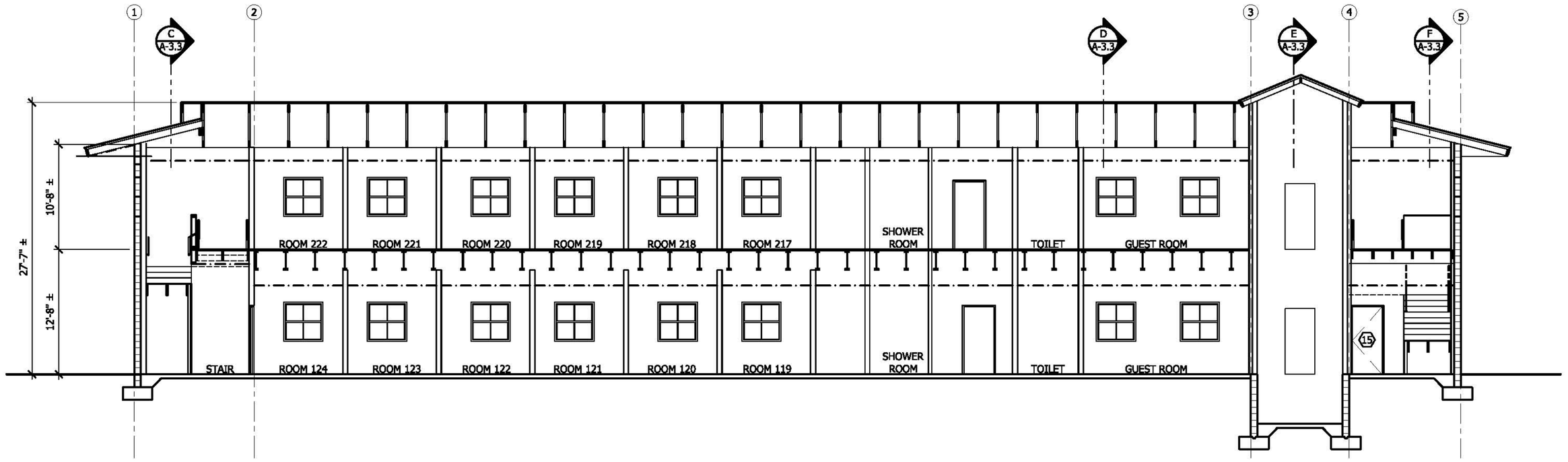
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/8" = 1'-0"
DATE: 09/13/16

A-3.2

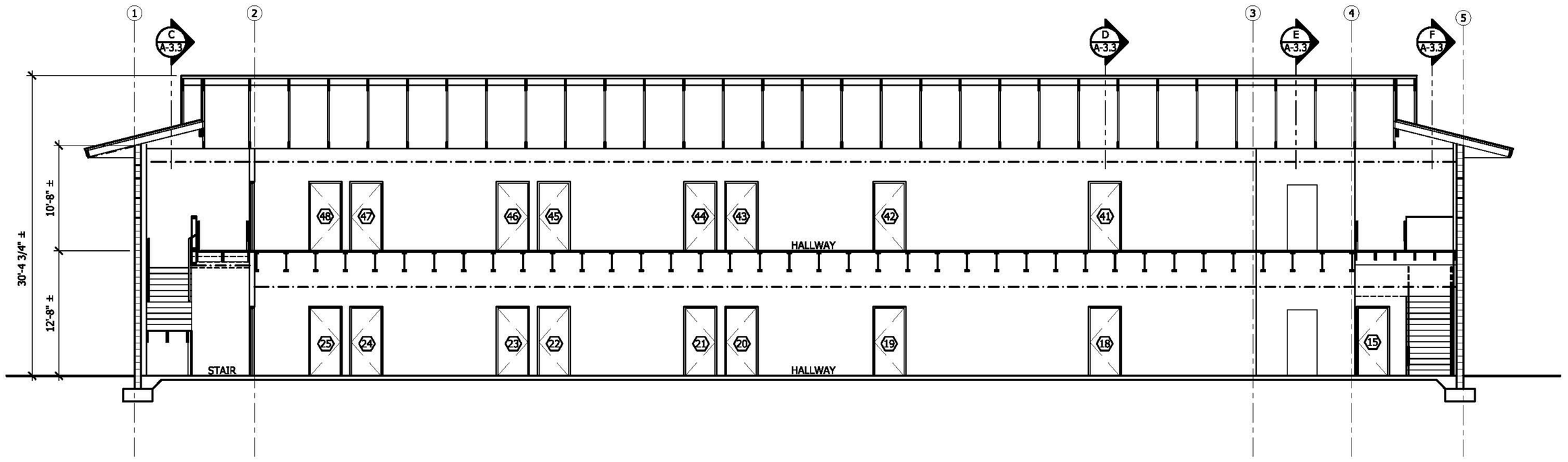
LEGEND:

WINDOW TYPES

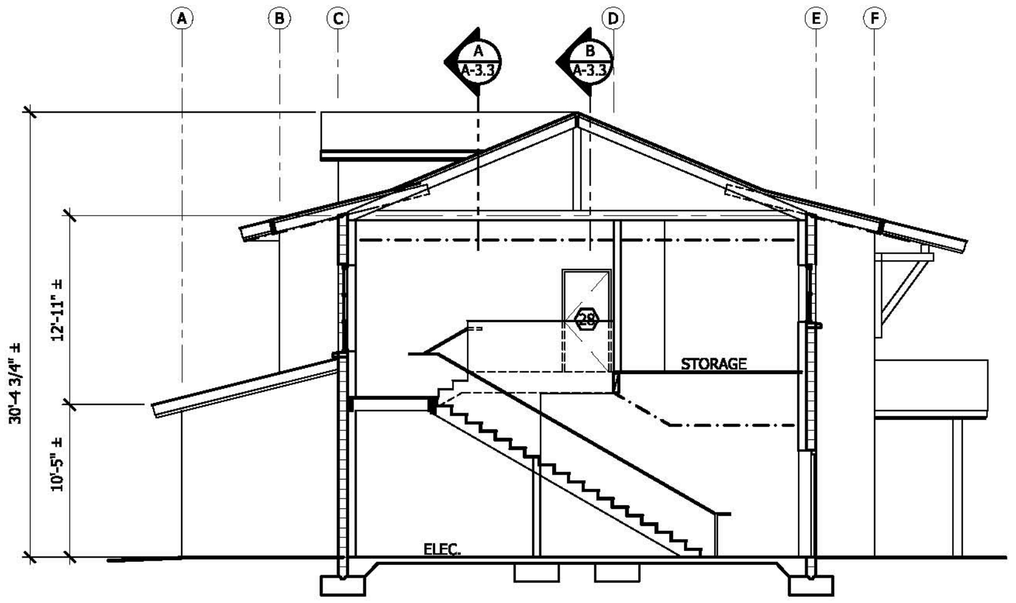
DOOR TYPES



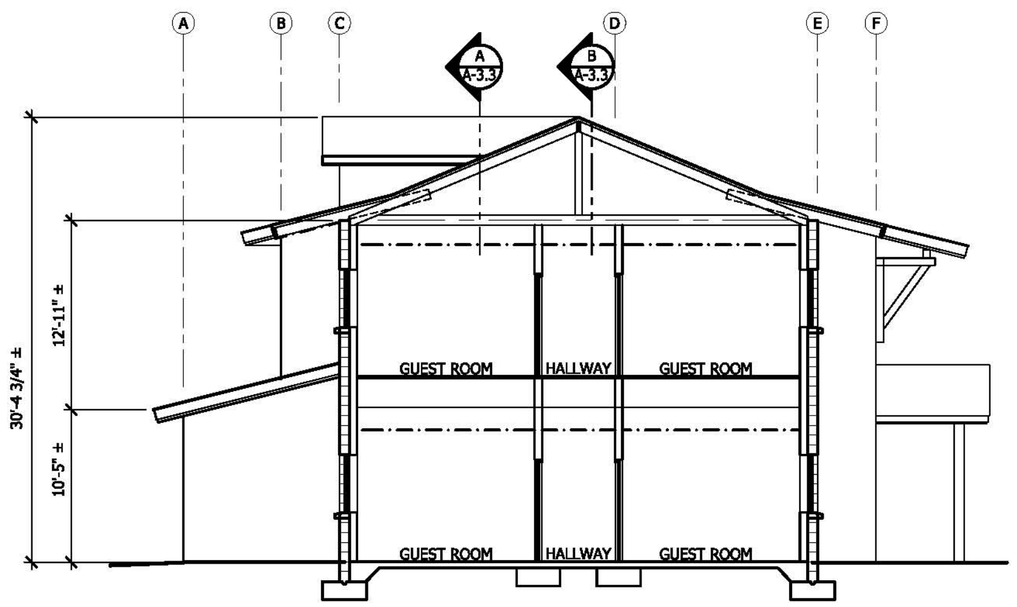
01 A-3.3 SECTION A
Scale : 1/8" = 1'-0"



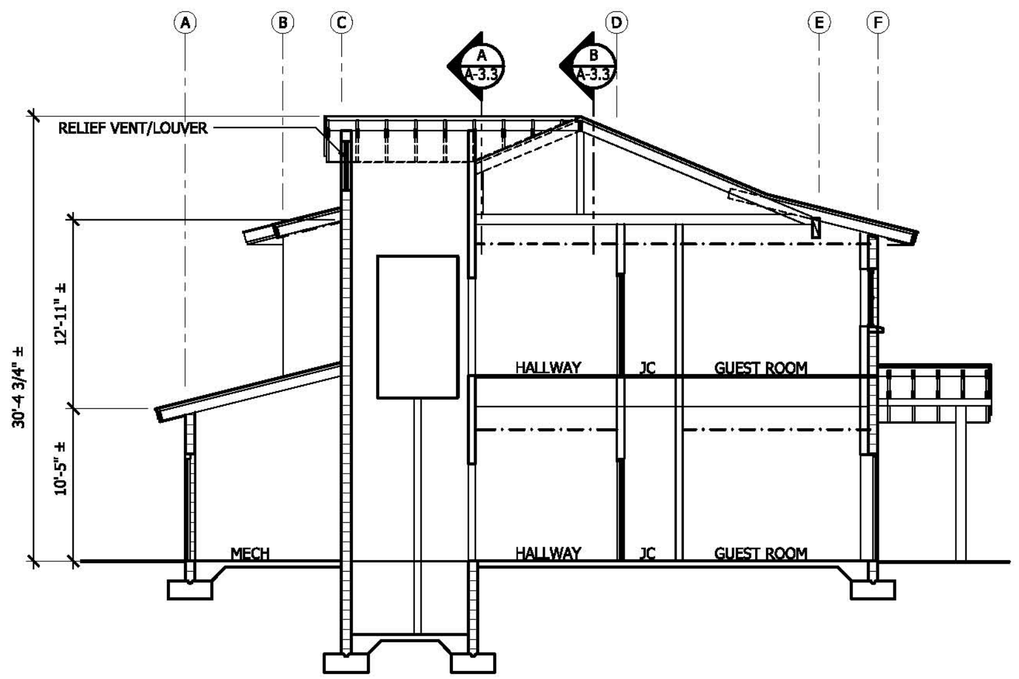
02 A-3.3 SECTION B
Scale : 1/8" = 1'-0"



03 A-3.3 SECTION C
Scale : 1/8" = 1'-0"



04 A-3.3 SECTION D
Scale : 1/8" = 1'-0"



05 A-3.3 SECTION E
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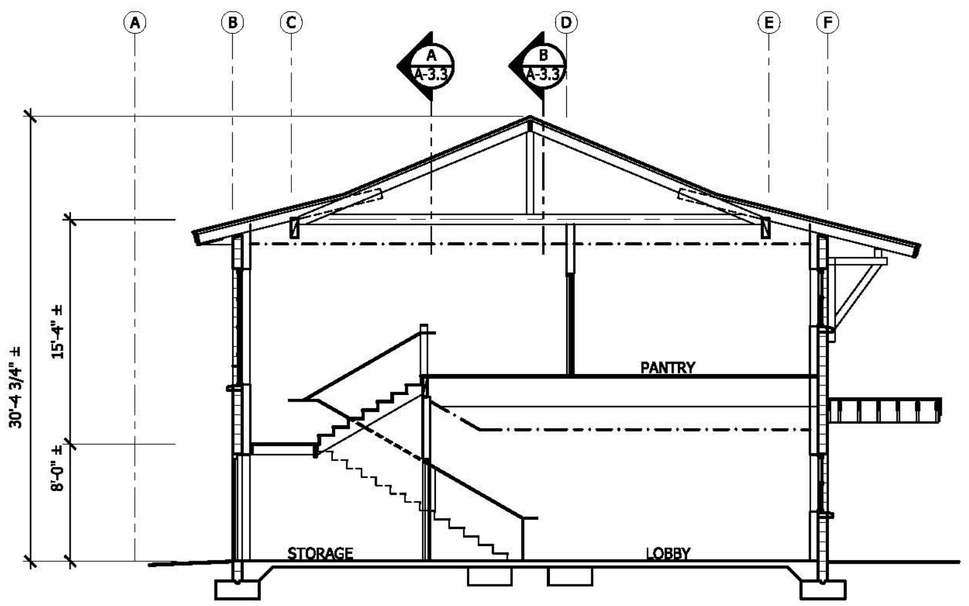

06 A-3.3 SECTION F
Scale : 1/8" = 1'-0"

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CHECKED BY: LP
SCALE: 1/8" = 1'-0"

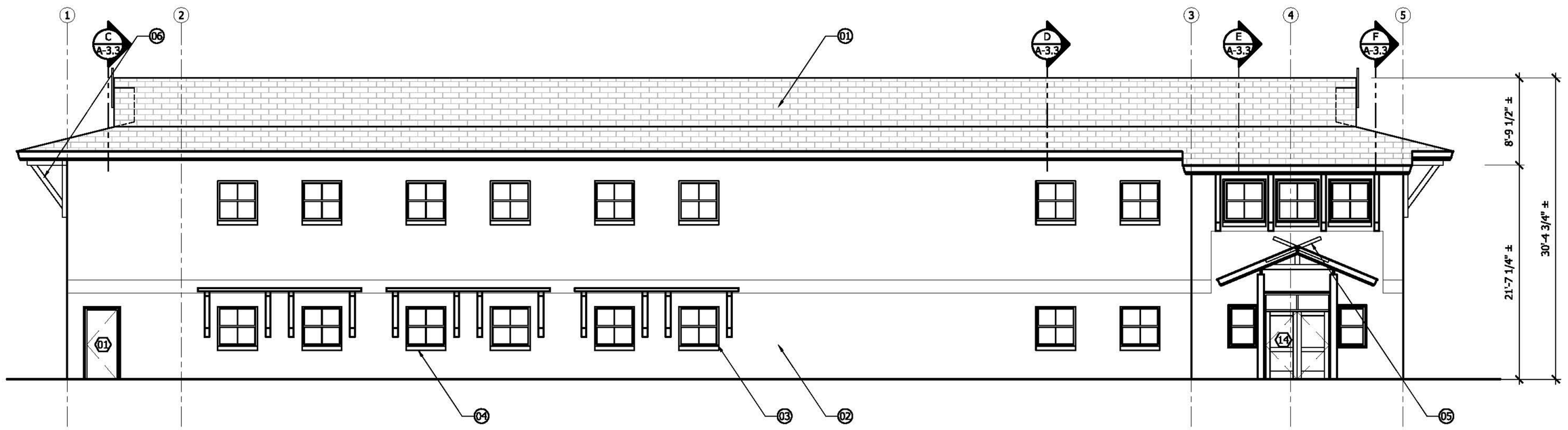
DORMITORY SECTIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

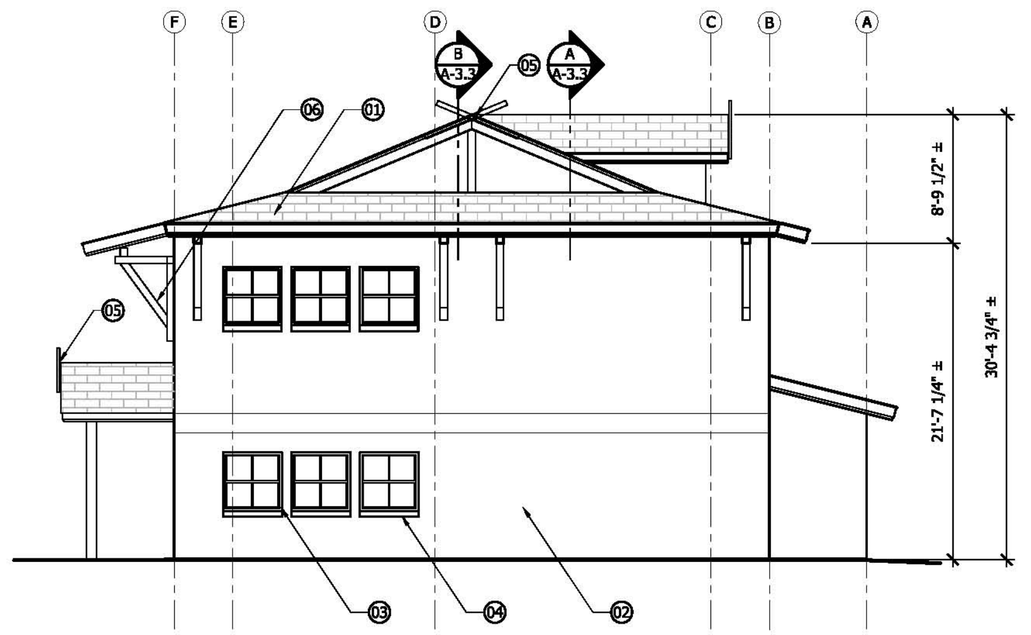
A-3.3

KEYNOTES:

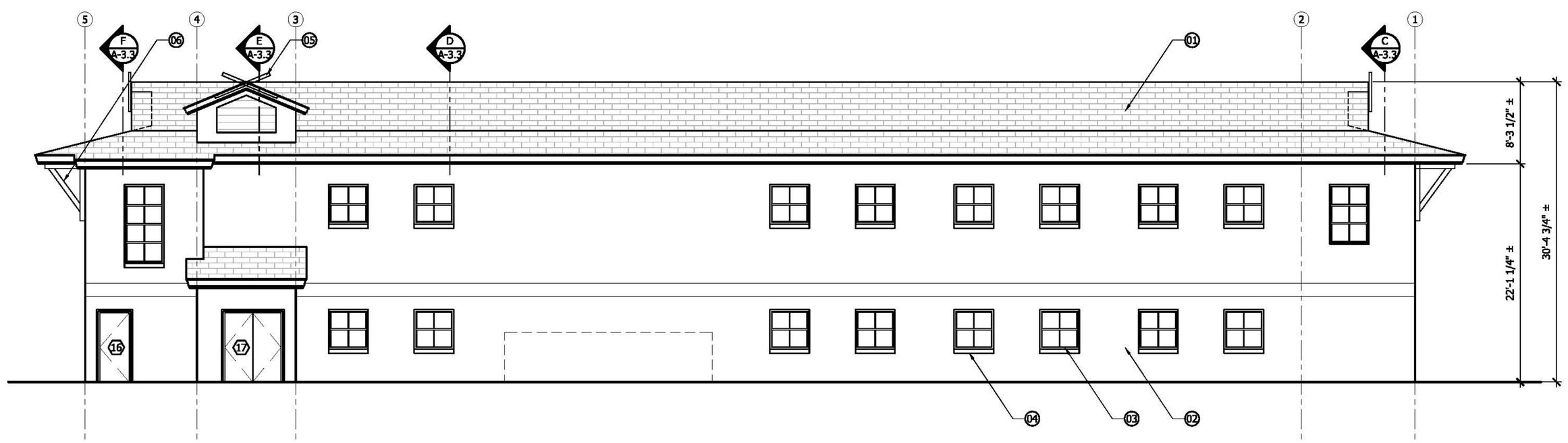
01 LIGHT WEIGHT CONCRETE ROOF TILE
02 EXPOSED SHOT BLAST CMU
03 VINYL WINDOWS AND DOORS FRAME
04 PRE-CAST CONCRETE SILL
05 DECORATIVE ROOF ELEMENT
06 DECORATIVE EAVE SUPPORT



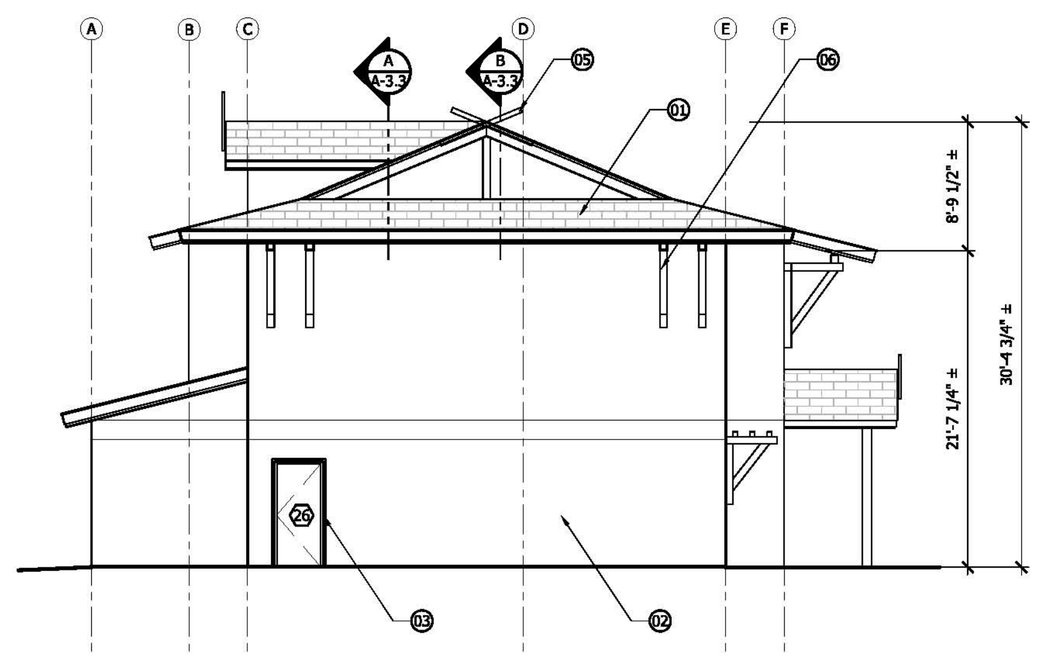
01 NORTH ELEVATION
A-3.4 Scale : 1/8" = 1'-0"



02 EAST ELEVATION
A-3.4 Scale : 1/8" = 1'-0"



03 SOUTH ELEVATION
A.3-4 Scale : 1/8" = 1'-0"



04 WEST ELEVATION
A-3.4 Scale : 1/8" = 1'-0"

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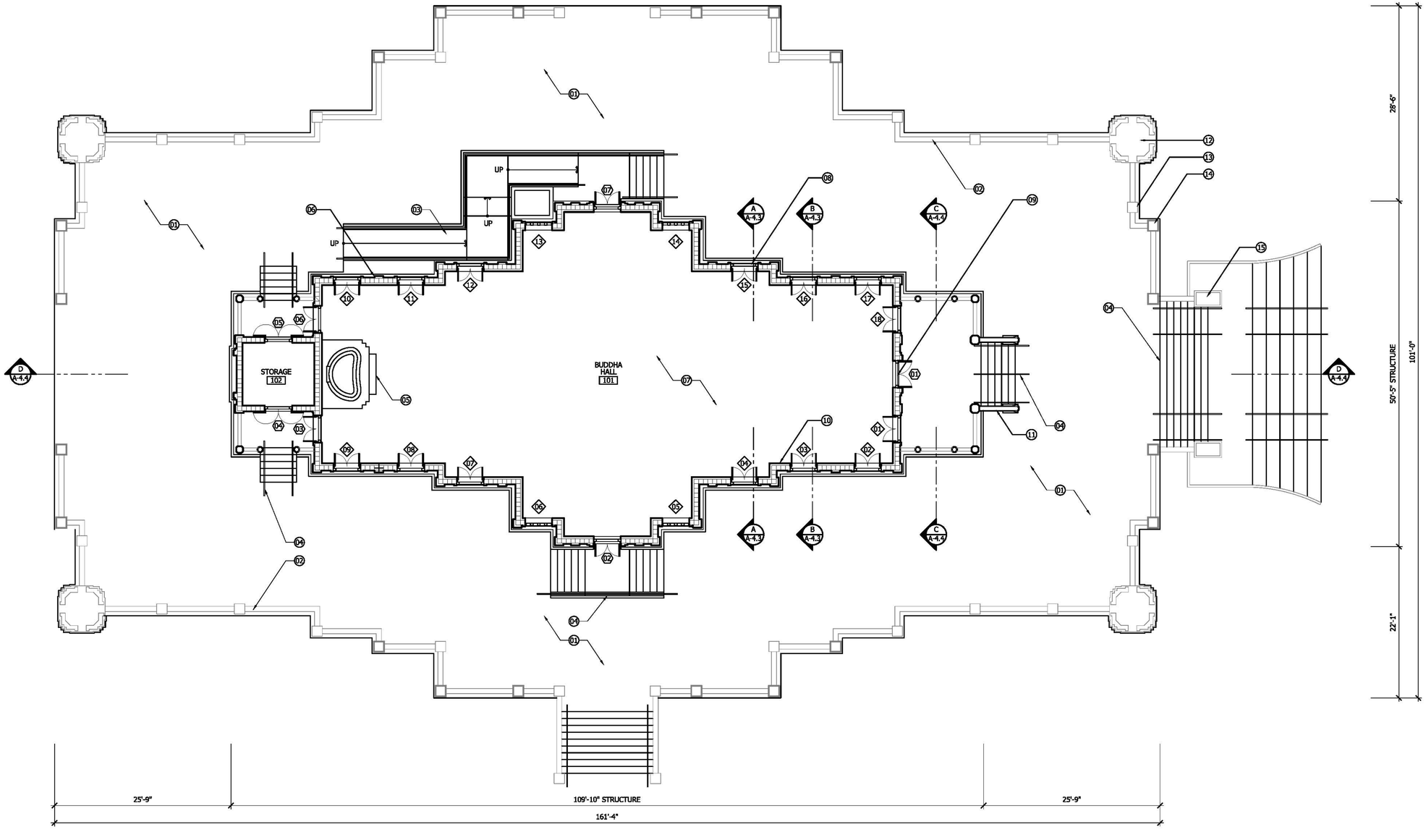
SCALE: 1/8" = 1'-0"

DORMITORY ELEVATIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-3.4



01 BUDDHA HALL FLOOR PLAN
A-4.1 Scale : 1/8" = 1'-0"

LEGEND:

- 03 WINDOW TYPES
- 05 DOOR TYPES

KEYNOTES:

01 EXTERIOR COURTYARD
02 DECORATIVE RAILING
03 ACCESSIBLE RAMP/RAILING SYSTEM
04 EXTERIOR STAIRS/RAILING AND PLATFORM
05 INTERIOR BUDDA STATUE
06 EXTERIOR PLASTER
07 FINISH FLOOR MARBLE
08 WINDOW FIBERGLASS CAST
09 DOOR FIBERGLASS CAST WITH GOLD LEAF FINISHING AND GLASS
10 5/8" GYMSUP BOARD
11 NAGA BALUSTRADE STUCCO
12 SCULPTURE 1
13 PRECAST PILLARS
14 SCULPTURE 2
15 SINGHAS STUCCO

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BUDDHA HALL FLOOR PLAN

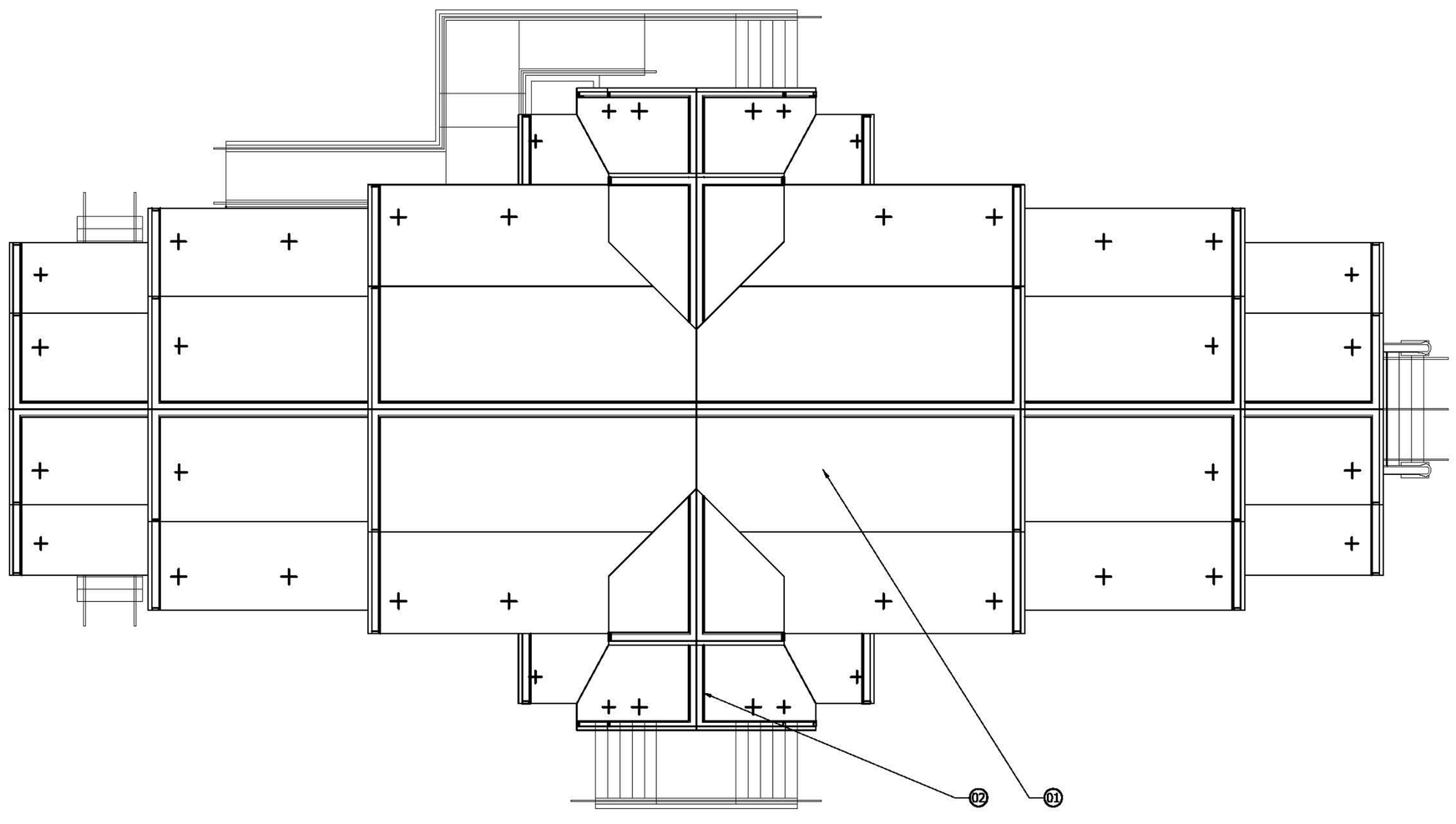
WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-4.1

KEYNOTES:

01 LIGHT WEIGHT CONCRETE ROOF TILE

02 DECORATIVE ROOF ACCENTS



01 BUDDHA HALL ROOF PLAN
A-4.2 Scale : 1/8" = 1'-0"

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BUDDHA HALL ROOF PLAN

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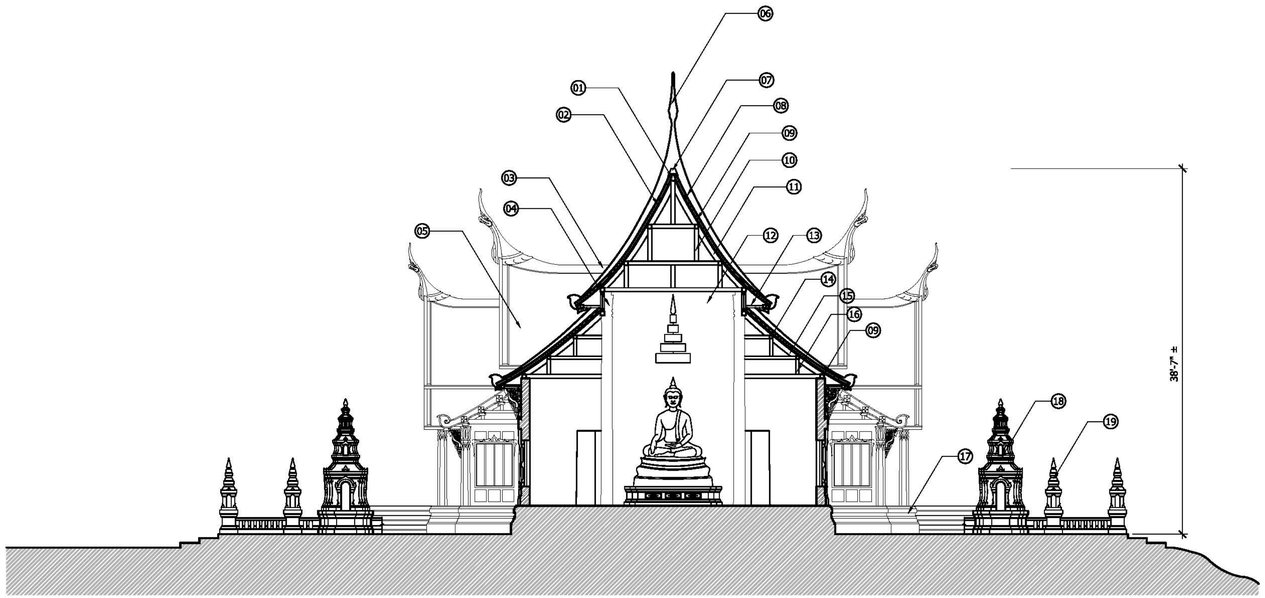
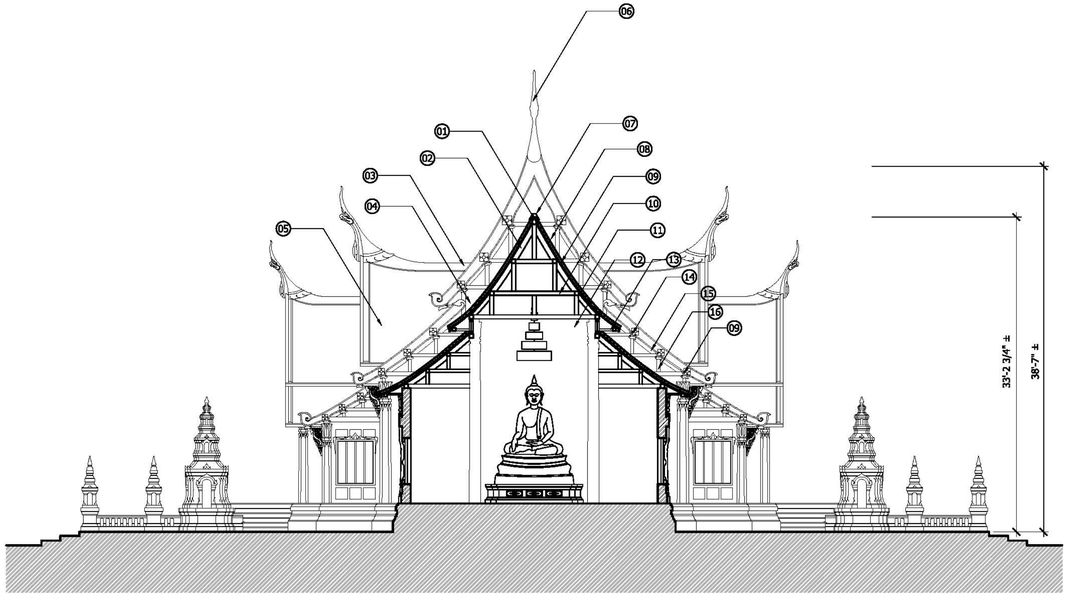
SCALE: 1/8" = 1'-0"
DATE: 09/13/16

A-4.2



01 A-4.3 SECTION A
Scale : 1/8" = 1'-0"



02 A-4.3 SECTION B
Scale : 1/8" = 1'-0"

KEYNOTES:

01 ROOF RIDGE
02 ROOF TILE LATH
03 SMART BOARD DECORATIONS
04 CORNICE - PILLAR FIBER GLASS
05 STRUTS FIBER GLASS
06 DECORATED ELEMENTS OF FEBER FLASS CAST WITH GOLD FINISHING
07 PRECAST CONCRETE RIDGE CAP
08 LIGHT WEIGHT CONCRETE ROOF TILE
09 5"X5" PURLINS
10 5"X5" SUPPORTING POST
11 5"X5" RAFTER
12 5/8" GYPSUM BOARD
13 SHORT CROSS BEAM
14 4"X4" PURLINS
15 4"X4" RAFTER
16 4"X4" SUPPORTING POST
17 LOTUS BASE PRECAST
18 SCULPTURE 1 - PRECAST
19 SCULPTURE 2 - PRECAST

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BUDDHA HALL SECTIONS

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Wat Phra That Doi Suthep USA

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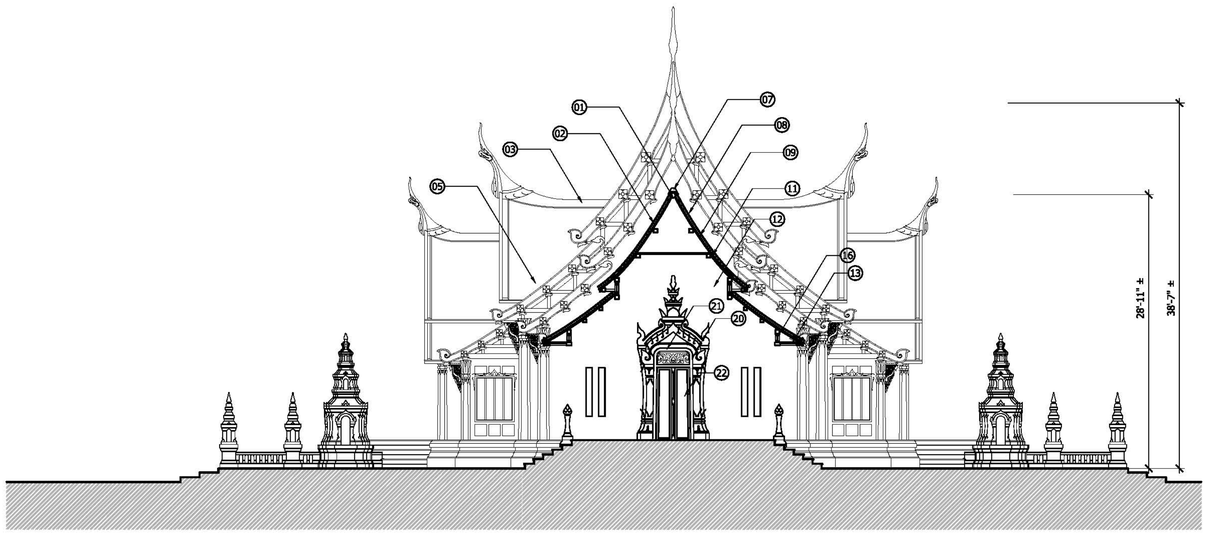
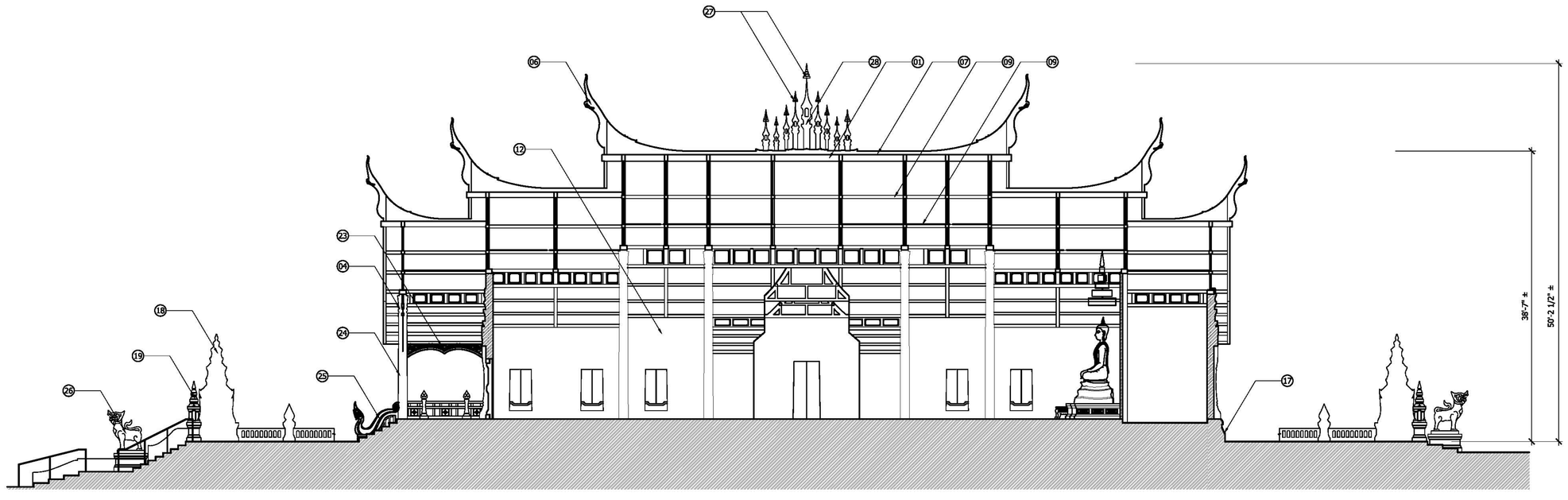
CHECKED BY: LP
SCALE: 1/8" = 1'-0"
DATE: 09/13/16

A-4.3



01 SECTION C
A-4.4 Scale : 1/8" = 1'-0"



02 SECTION D
A-4.4 Scale : 1/8" = 1'-0"

KEYNOTES:

01 ROOF RIDGE
02 ROOF TILE LATH
03 SMART BOARD DECORATIONS
04 CORNICE - PILLAR FIBER GLASS
05 STRUTS FIBER GLASS
06 DECORATED ELEMENTS OF FIBER GLASS CAST WITH GOLD FINISHING
07 PRECAST CONCRETE RIDGE CAP
08 LIGHT WEIGHT CONCRETE ROOF TILE
09 5"X5" PURLINS
10 5"X5" SUPPORTING POST
11 5"X5" RAFTER
12 5/8" GYPSUM BOARD
13 SHORT CROSS BEAM
14 4"X4" PURLINS
15 4"X4" RAFTER
16 4"X4" SUPPORTING POST
17 LOTUS BASE PRECAST
18 SCULPTURE 1 - PRECAST
19 SCULPTURE 2 - PRECAST
20 DOOR FIBERGLASS CAST WITH GOLD LEAF FINISHING AND GLASS
21 HARDWOOD DOOR FRAME
22 TEAK WOOD 3"
23 DECORATIVE ARCH, A LOWER TIE BEAM FIBER GLASS TO COVER GOLDLEAF AND GLASS
24 CONCRETE COLUMN
25 STUCCO NAGA BALUSTRADE
26 STUCCO SINGHA SCULPTURE
27 STAINLESS STEEL GOLD UMBRELLA DECORATIVE ELEMENT
28 RIDGE FINIAL, FIBER GLASS CAST

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CHECKED BY: LP
SCALE: 1/8" = 1'-0"

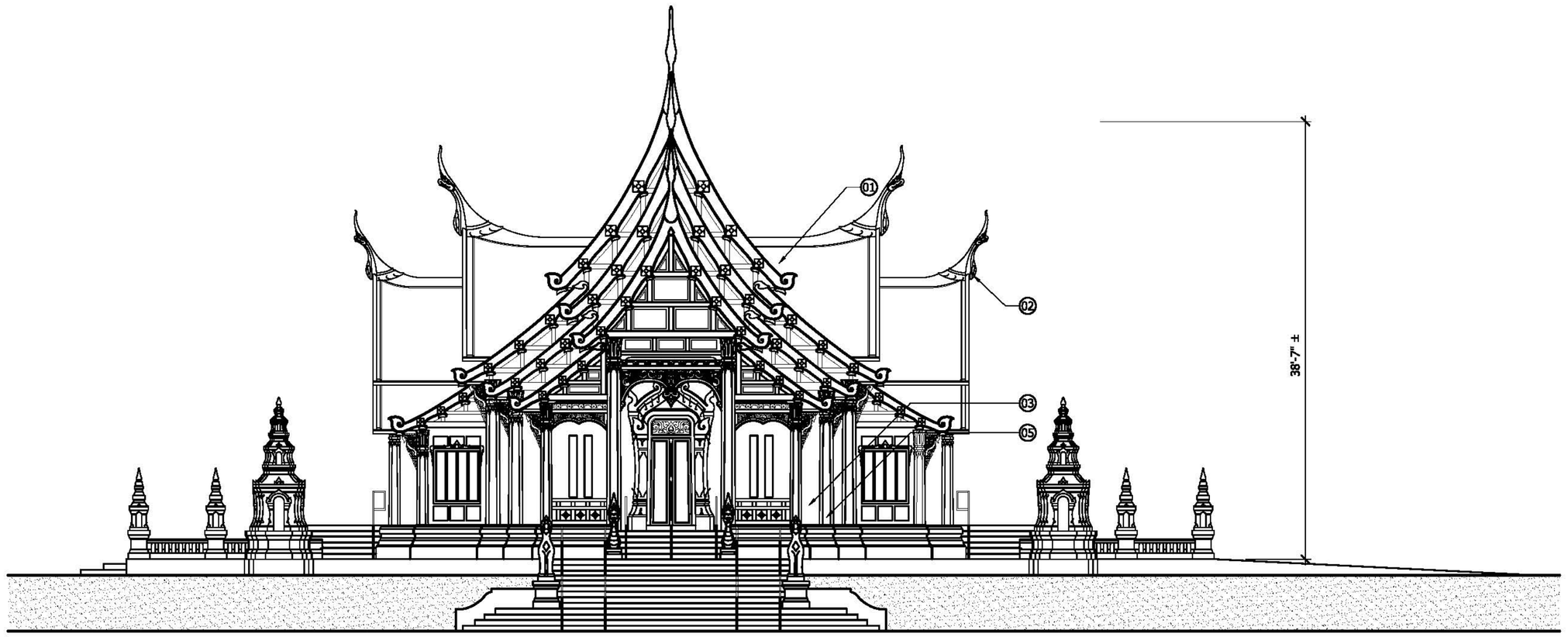
BUDDHA HALL SECTIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

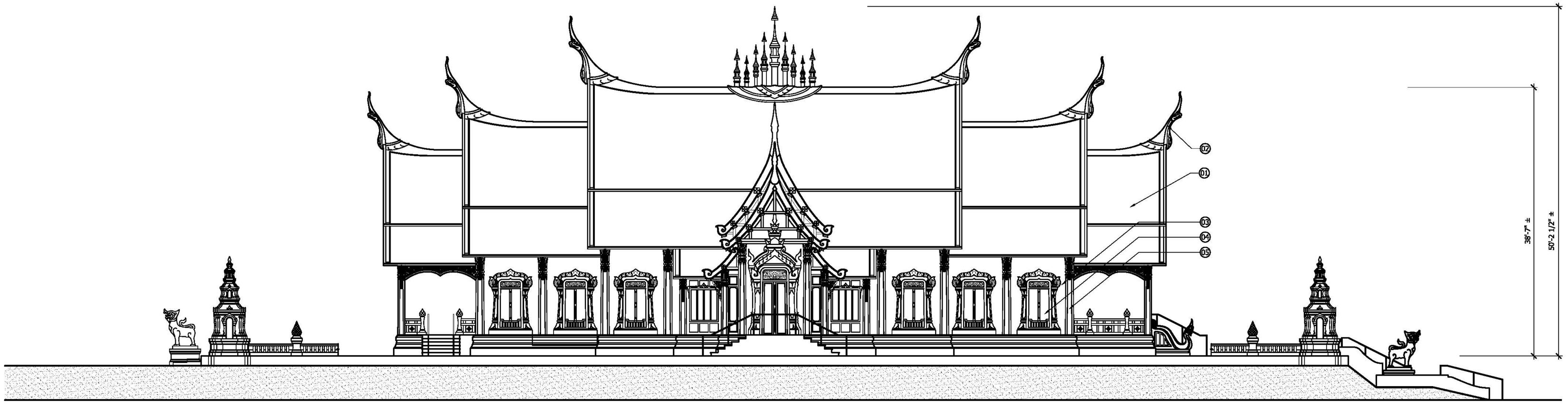
A-4.4

KEYNOTES:

01 LIGHT WEIGHT CONCRETE ROOF TILE
02 DECORATIVE ROOF ACCENTS
03 POLISH MARBLE TILE
04 WINDOW WITH ACCENT TRIM
05 DECORATIVE PILASTER



01 A-4.5 NORTH ELEVATION
Scale : 1/8" = 1'-0"



02 A-4.5 EAST ELEVATION
Scale : 1/8" = 1'-0"

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BUDDHA HALL ELEVATIONS

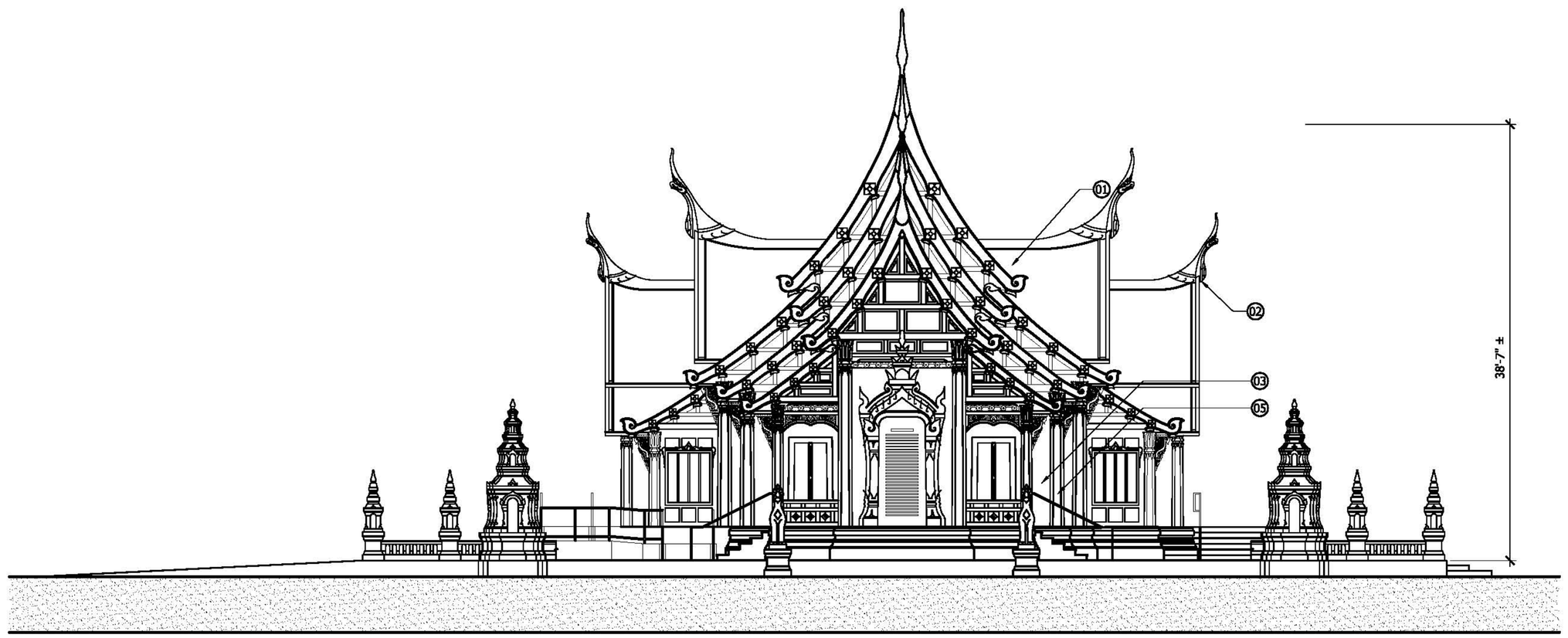
WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/8" = 1'-0"
DATE: 09/13/16

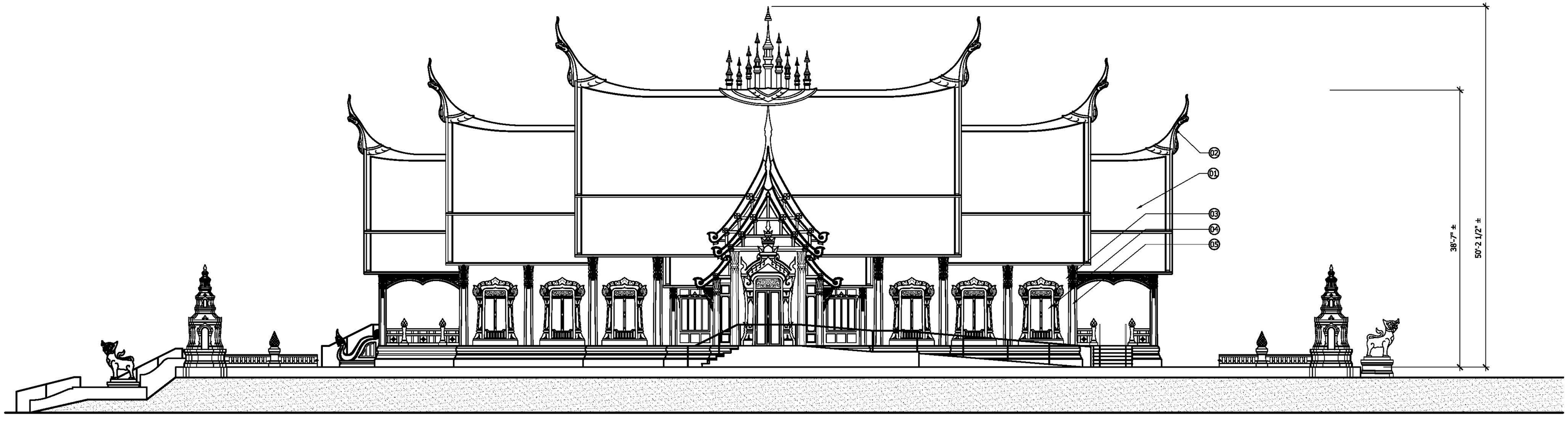
A-4.5

KEYNOTES:

01 LIGHT WEIGHT CONCRETE ROOF TILE
02 DECORATIVE ROOF ACCENTS
03 POLISH MARBLE TILE
04 WINDOW WITH ACCENT TRIM
05 DECORATIVE PILASTER



01 A-4.6 SOUTH ELEVATION
Scale : 1/8" = 1'-0"



02 A-4.6 WEST ELEVATION
Scale : 1/8" = 1'-0"

LICENSED ARCHITECT PANICHAPAN KONOK MACK No. C-29414 EXP. 11-30-2015 STATE OF CALIFORNIA

architecture planning interior

GPi Gillis + Panichapan Architects, Inc.
2900 BRISTOL STREET COSTA MESA CALIFORNIA 92626
FAX (714) 668-4265 SUITE C-205 TEL (714) 668-4260

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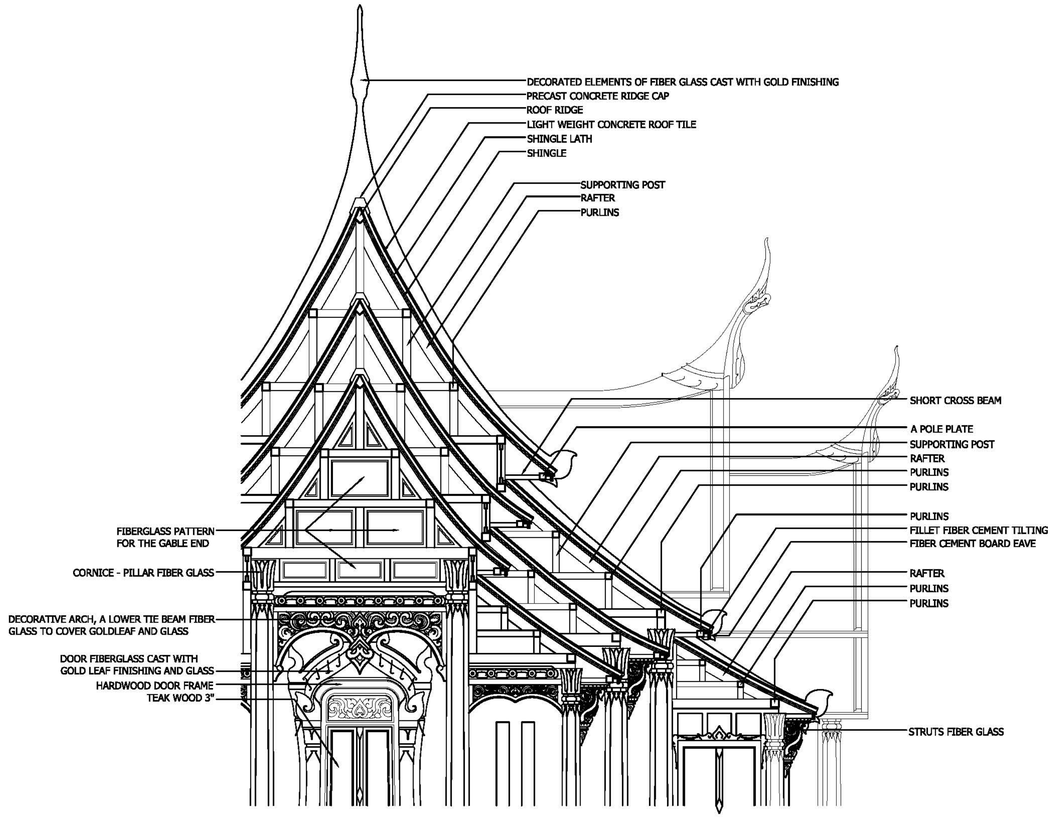
5TH PLANNING SUBMITTAL

BUDDHA HALL ELEVATIONS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

JOB NO.: 3212 DATE: 09/13/16
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/8" = 1'-0"

A-4.6



01 A-4.7 **ROOF ELEVATION DETAIL**
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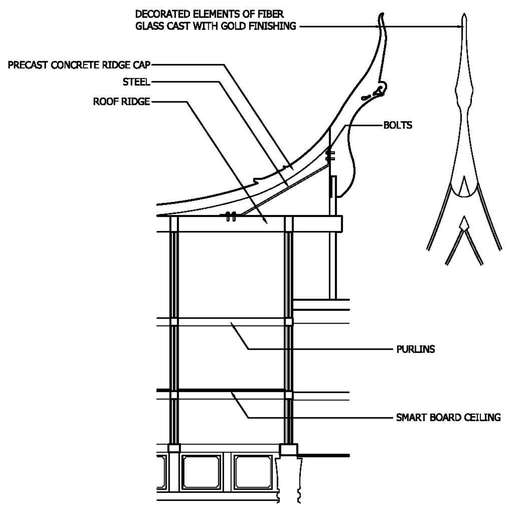

02 A-4.7 **ROOF SECTION DETAIL**
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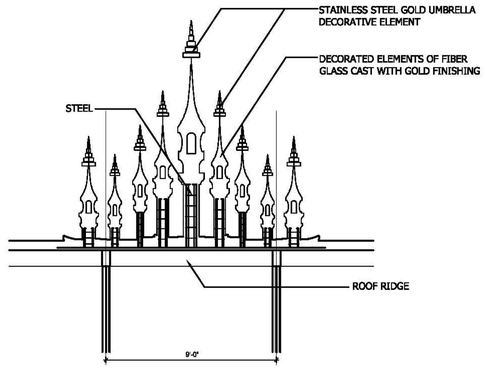

03 A-4.7 **ROOF ORNAMENT DETAIL**
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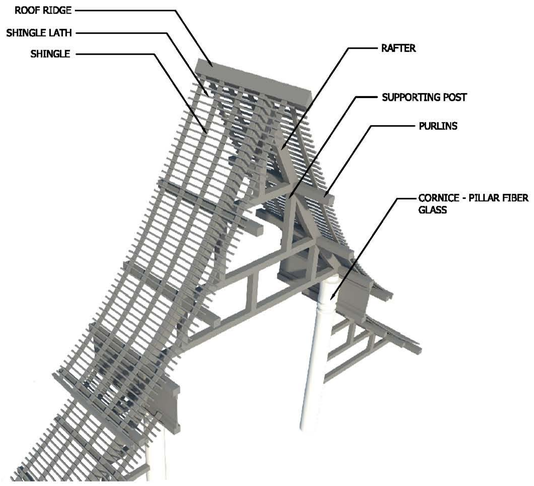
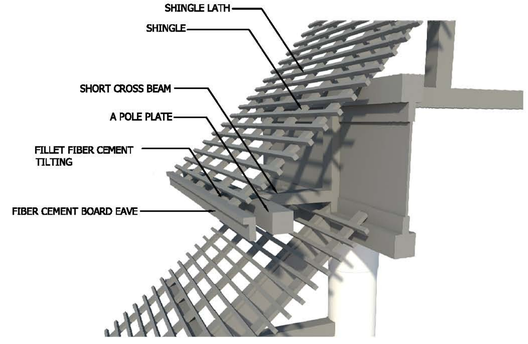


04 A-4.7 **ROOF STRUCTURE DETAIL**
Scale : 1/4" = 1'-0"



05 A-4.7 **ROOF SECTION DETAIL**
Scale : 1/4" = 1'-0"

Gillis + Panichapan Architects, Inc.
2900 BRISTOL STREET COSTA MESA CALIFORNIA 92626
SUITE G-205 TEL.(714) 668-4260
FAX (714) 668-4265

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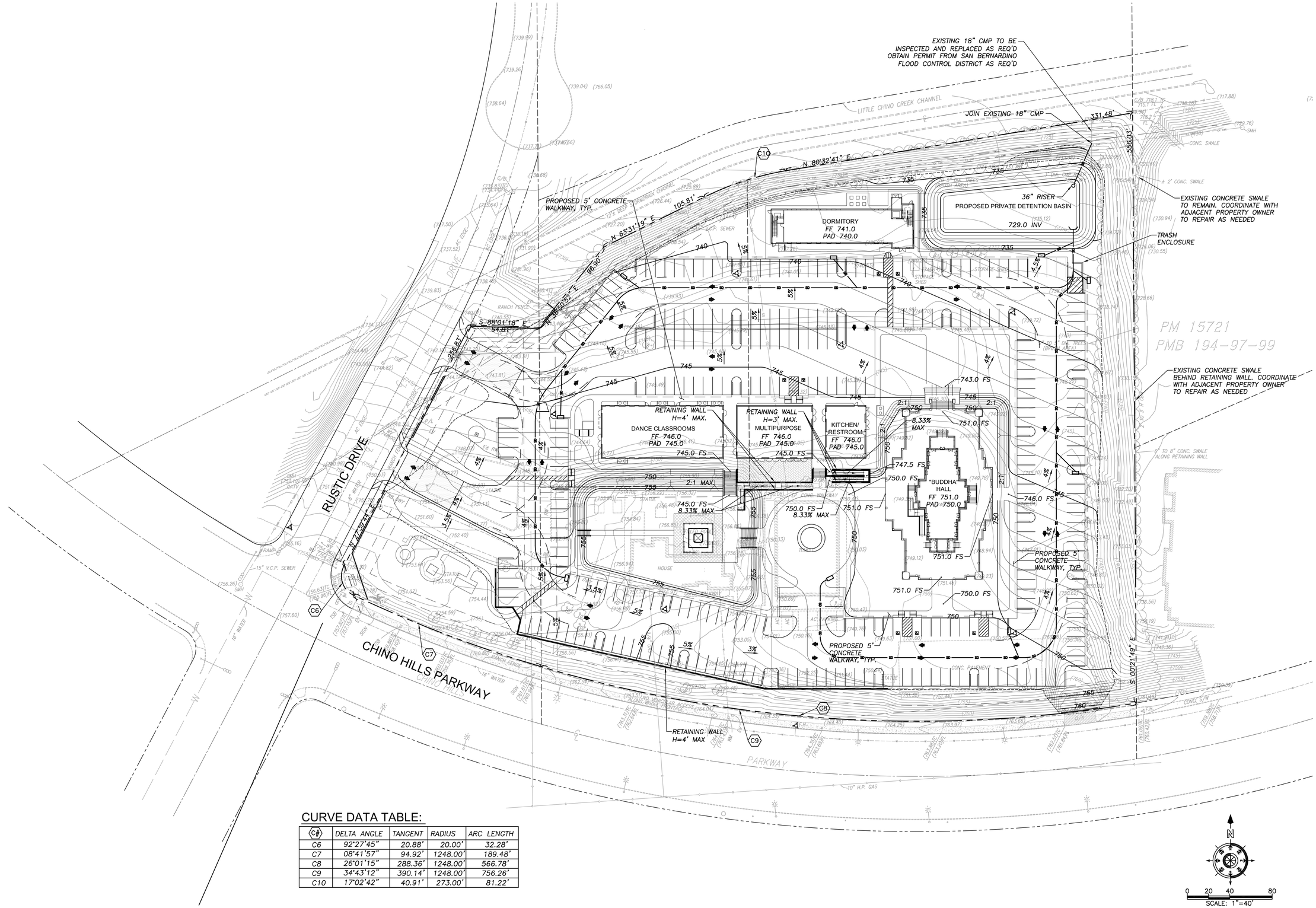
5TH PLANNING SUBMITTAL

DATE: 09/13/16
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1/4" = 1'-0"

BUDDHA HALL DETAILS

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

A-4.7



CURVE DATA TABLE:

C#	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
C6	92°27'45"	20.88'	20.00'	32.28'
C7	08°41'57"	94.92'	1248.00'	189.48'
C8	26°01'15"	288.36'	1248.00'	566.78'
C9	34°43'12"	390.14'	1248.00'	756.26'
C10	17°02'42"	40.91'	273.00'	81.22'

N

0 20 40 80

SCALE: 1"=40'

CIVIL WORKS Engineers, Inc.
3151 Airway Avenue, Suite T-1
Costa Mesa, CA 92626
(714) 966-9060

SEAL

REGISTERED PROFESSIONAL ENGINEER MARTE MARSTON RCE 38798 Exp. 03/31/17 CIVIL STATE OF CALIFORNIA

KEY PLAN

NOTES

ISSUES/REVISIONS

NO.	DATE	DESCRIPTION

CLIENT

Contact:

PROJECT NAME

Wat Thai Temple
at
2948 Chino Hills Parkway
Chino Hills, CA 91709

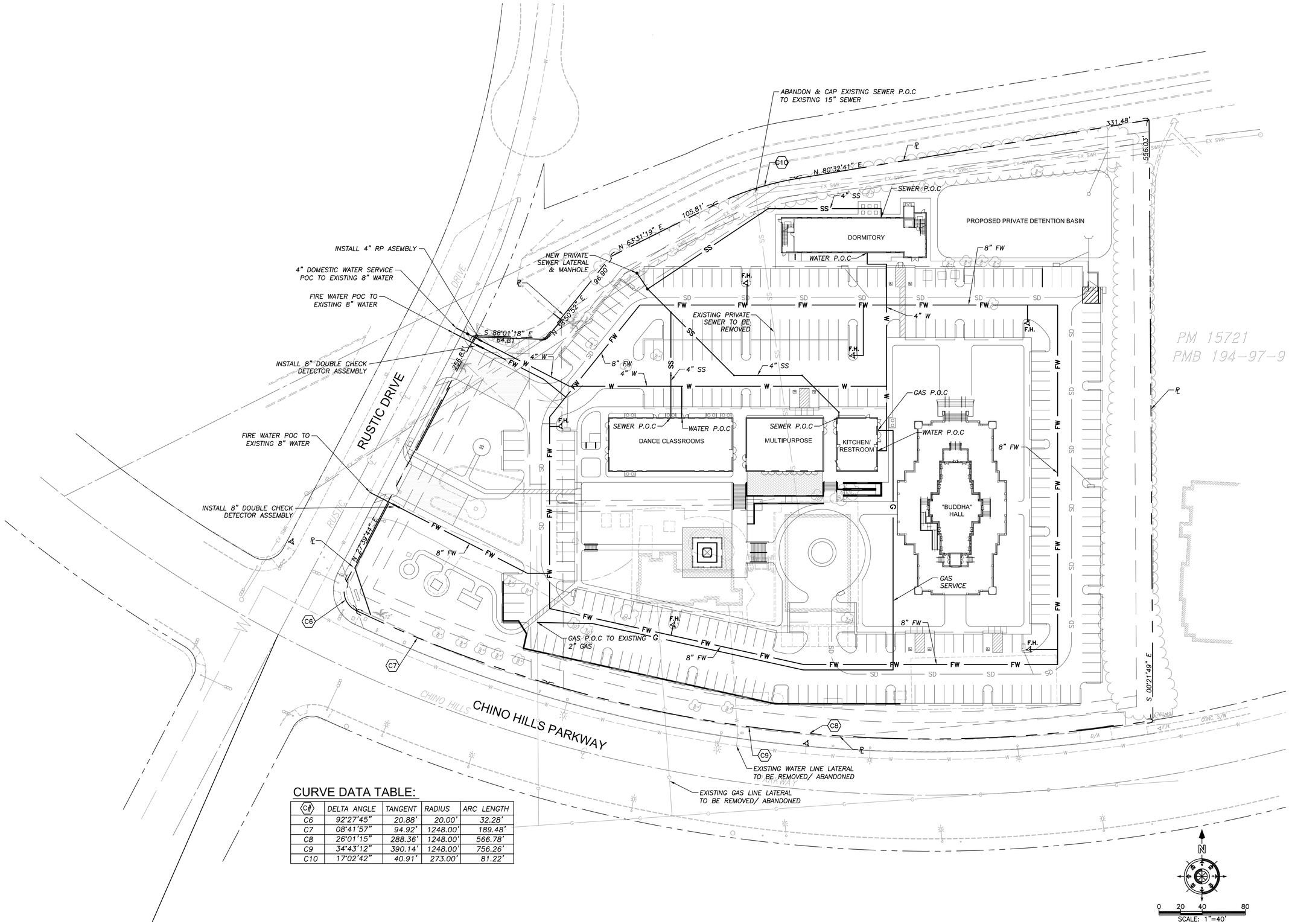
Date:	Sept 2016
Project Number:	406-01
Drawn By:	CWE
Scale:	As Noted

Sheet Title:

Conceptual Grading Plan

Sheet No.:

1 of 1



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SEAL

REGISTERED PROFESSIONAL ENGINEER
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RCE 38798
Exp. 03/31/17
CIVIL
STATE OF CALIFORNIA

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Scale:	As Noted

Sheet Title:

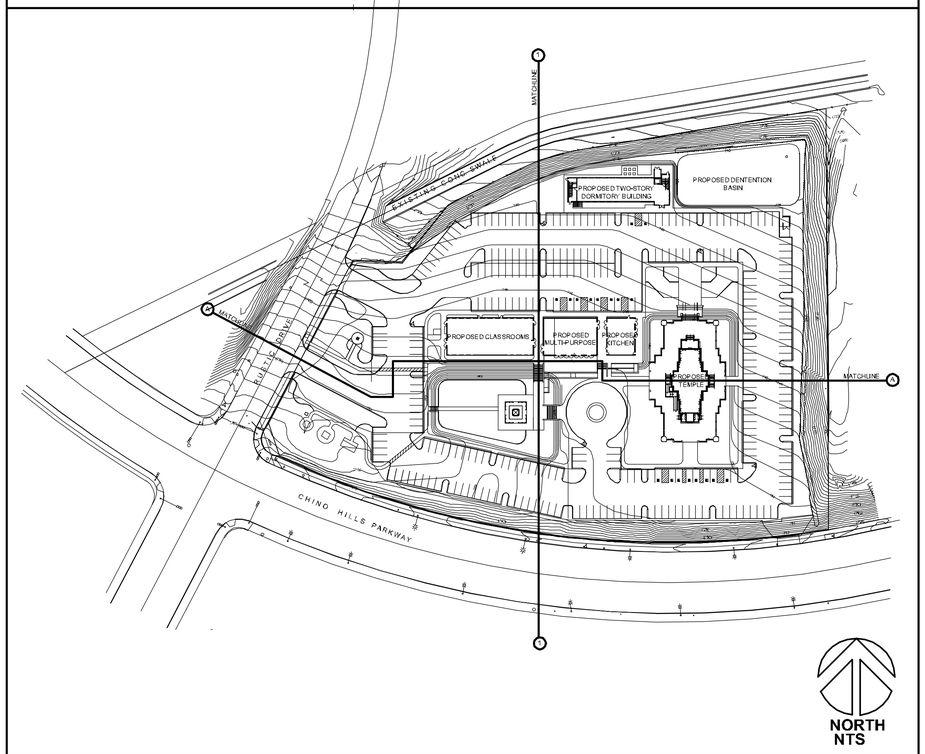
Conceptual Utility Plan

Sheet No.:

1 of 1

WAT PHRA THAT DOI SUTHEP USA
LANDSCAPE DEVELOPMENT PLANS
2948 Chino Hills Parkway, Chino Hills, California 91709

INDEX MAP



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5. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY SHOULD FIELD CONDITIONS VARY FROM PLAN.
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9. BASE SHEET INFORMATION FOR THESE PLANS WAS DERIVED FROM PLANS BY KHMK ARCHITECTS, SANTA CLARITA, CA, (661) 294-7899.

GENERAL INFORMATON

QUANTITIES SECTION

TOTAL PROJECT SQUARE FEET: 317,988
TOTAL LANDSCAPED SQUARE FEET: 134,465
TOTAL TURF SQUARE FEET (25% OR LESS): 17,275, (13%)
TOTAL NUMBER OF PARKING SPACES: 299
TOTAL NUMBER OF SHADE TREES IN PARKING AREAS (10:1 OR GREATER): 45, (15%)

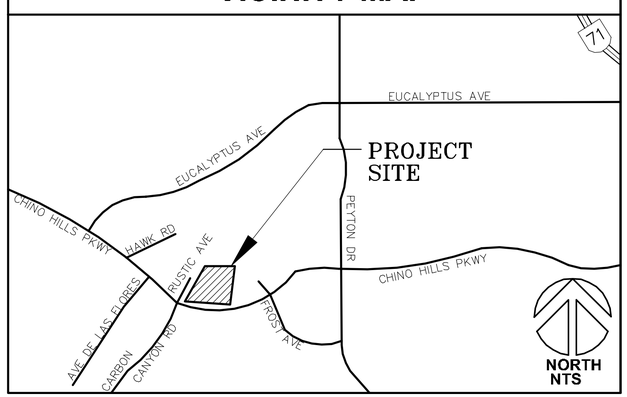
MAINTENANCE NOTE:

ALL IMPROVEMENTS ARE TO BE MAINTAINED BY THE PROPERTY OWNER.

INDEX OF DRAWINGS

SHEET NO.	SHEET	DESCRIPTION
1	T-1	TITLE SHEET
2	LC-1	CONSTRUCTION PLAN
3	LC-2	CONSTRUCTION PLAN
4	LC-3	CONSTRUCTION PLAN
5	LC-4	CONSTRUCTION PLAN
6	LI-1	IRRIGATION PLAN
7	LI-2	IRRIGATION PLAN
8	LI-3	IRRIGATION PLAN
9	LI-4	IRRIGATION PLAN
10	LIN-1	IRRIGATION NOTES AND LEGENDS
11	LIN-2	IRRIGATION NOTES AND LEGENDS
12	LP-1	PLANTING PLAN
13	LP-2	PLANTING PLAN
14	LP-3	PLANTING PLAN
15	LP-4	PLANTING PLAN
16	LPN-1	PLANTING NOTES AND LEGENDS
17	LCD-1	LANDSCAPE CONSTRUCTION DETAILS
18	LCD-2	LANDSCAPE CONSTRUCTION DETAILS
19	LCD-3	LANDSCAPE CONSTRUCTION DETAILS
20	LCD-4	LANDSCAPE CONSTRUCTION DETAILS

VICINITY MAP



APPROVALS

	DATE
	DATE
	DATE
	DATE
	DATE

REVISIONS

DATE	INITIALS	DESCRIPTION	CITY APPROVAL	DATE

CONSULTANTS

CONSULTANT:
TCLA, INC.
27905 SMYTH DRIVE
VALENCIA, CALIFORNIA 91355
(661) 702-1011 FAX (661) 702-0293

CONTACT PERSON:
HARRY H. KOBZEFF CA #1777

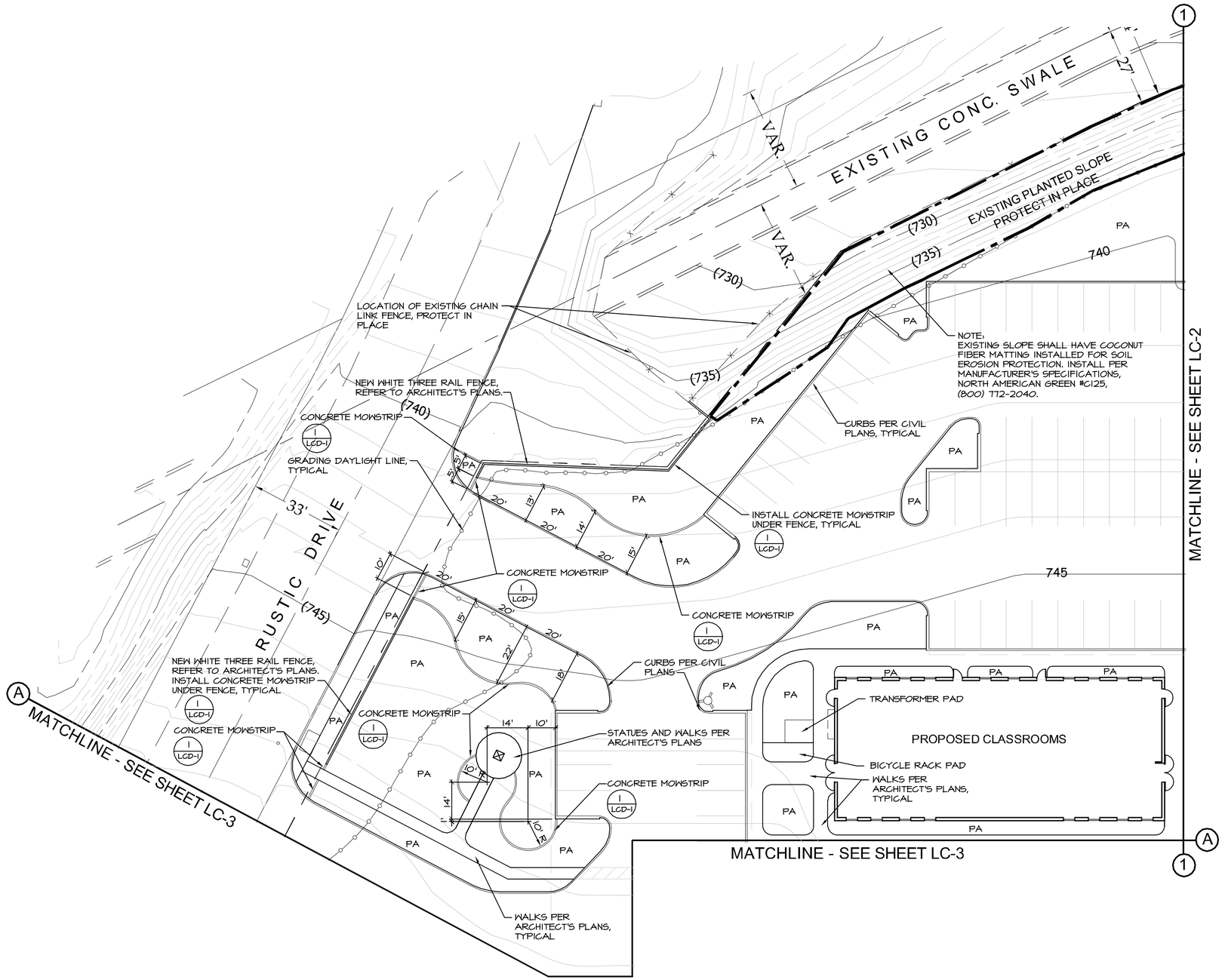
OWNER:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CA, 91709

CONTACT:
TAI TRIKOON

TCLA, Inc.
LANDSCAPE ARCHITECTURE - ENVIRONMENTAL DESIGN
CORPORATE OFFICE: JOSEPH A. VARONIN A.S.L.A. CA#1737
27905 SMYTH DRIVE, VALENCIA, CALIFORNIA 91355
(PH) 661-702-1011 (FX) 661-702-0293
ORANGE COUNTY OFFICE:
1392 REYNOLDS AVENUE #112, IRVINE, CALIFORNIA 92614
(PH) 949-250-1515 (FX) 949-250-1801

LICENSED LANDSCAPE ARCHITECT
HARRY H. KOBZEFF NO. 1777
Renewal Date
5-31-16
Date
8-25-15
STATE OF CALIFORNIA

SHEET:
T-1
1 OF 20 SHEETS



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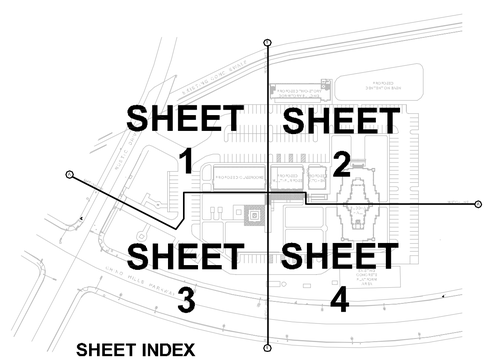


SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: JOSEPH A. VARONA ASLA CLA CMP737
PRINCIPAL LANDSCAPE ARCHITECT, CALIFORNIA #3067
(PH) 951-702-1911 (FX) 951-702-0239
ORANGE COUNTY OFFICE
1 PARK PLAZA, SUITE 112, IRVINE, CALIFORNIA 92614
(PH) 949-250-1915 (FX) 949-250-1901

SHEET TITLE: LANDSCAPE CONSTRUCTION PLAN

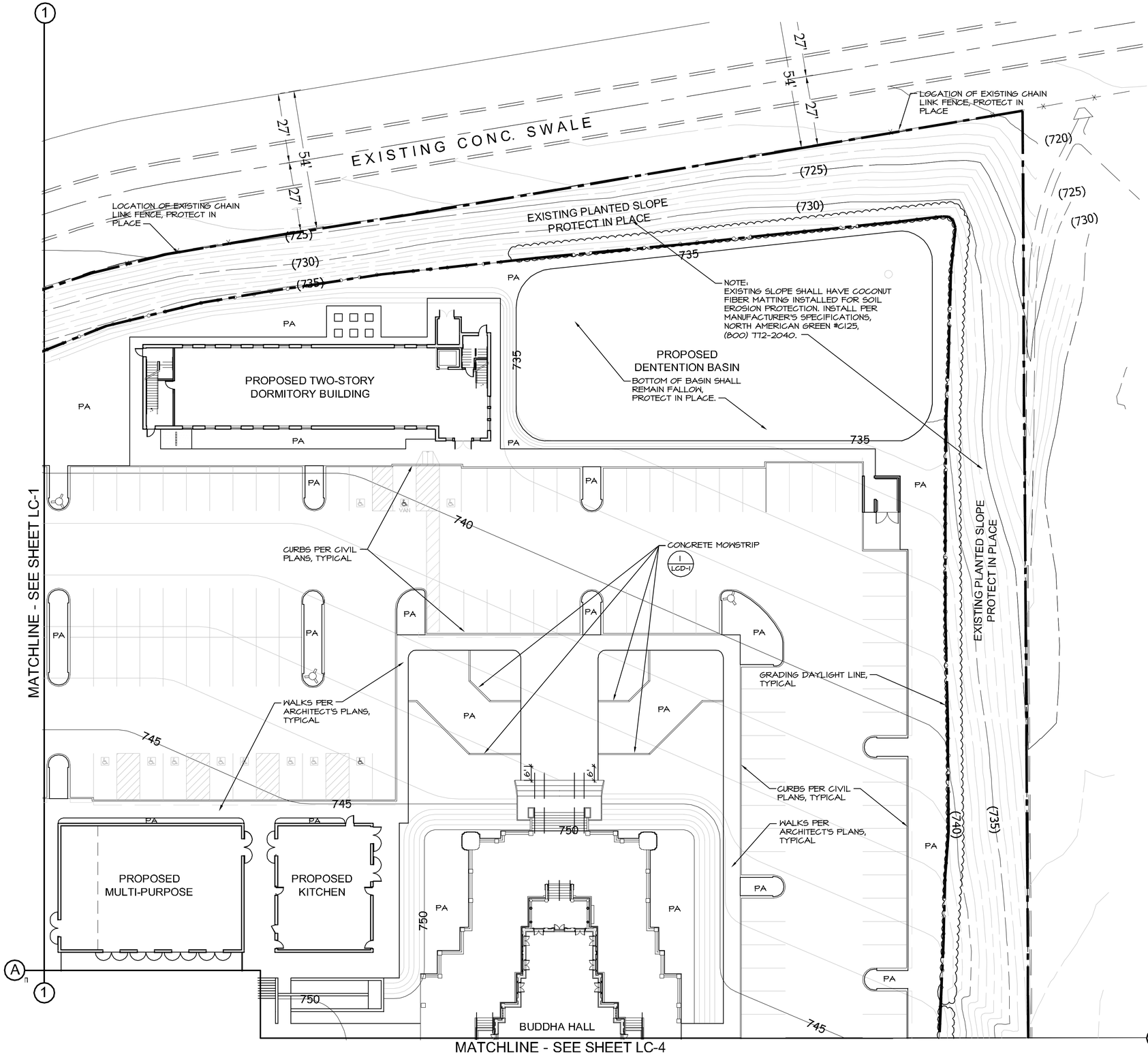
CLIENT: WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

PROJECT: WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
PATRICK H. ROBERTS No. 5911
6-30-16
6-02-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LC-1

2 OF 20 SHEETS



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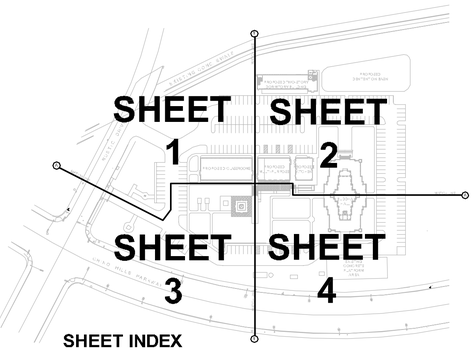

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LICENSED LANDSCAPE ARCHITECT
ROBERT H. ROBERTS
No. 5431
6-30-16
6-03-15
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LC-2
	3 OF 20 SHEETS

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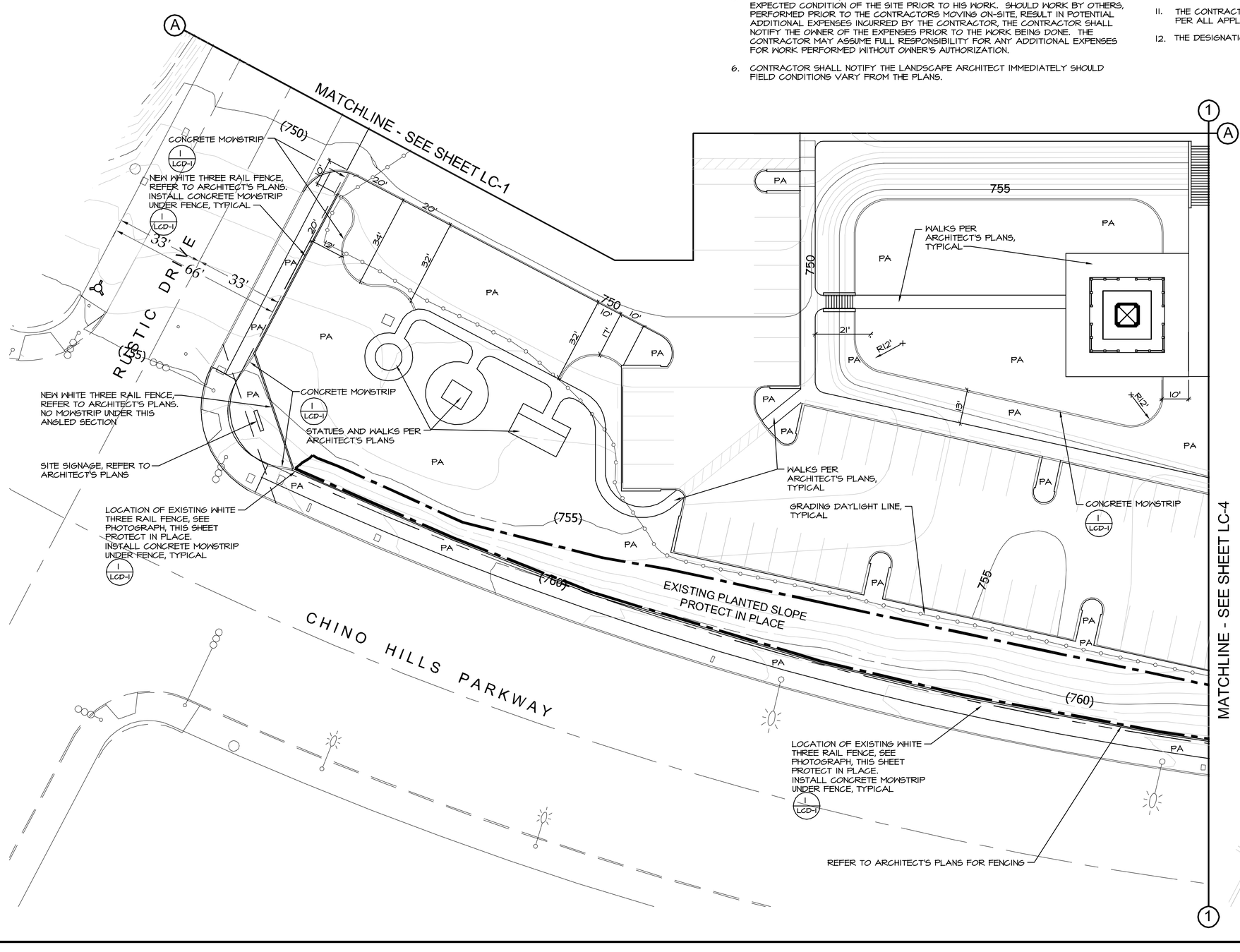
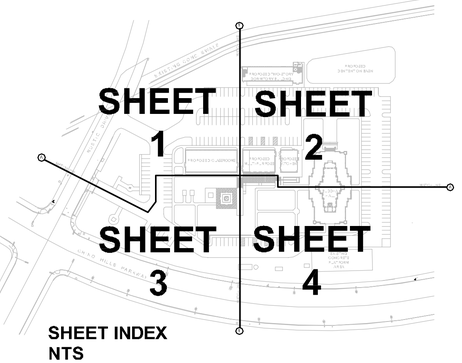


EXISTING 3-RAIL PERIMETER FENCE



SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: JOSEPH A. VARONA ASLA CLA CMT737
PO BOX 4111 ■ MISSION VIEJO, CALIFORNIA 92690
(PH) 949-702-1911 (FX) 949-702-0230
ORANGE COUNTY OFFICE
2600 MICHELSON DRIVE, SUITE 112, IRVINE, CALIFORNIA 92614
(PH) 949-250-1515 (FX) 949-250-1901

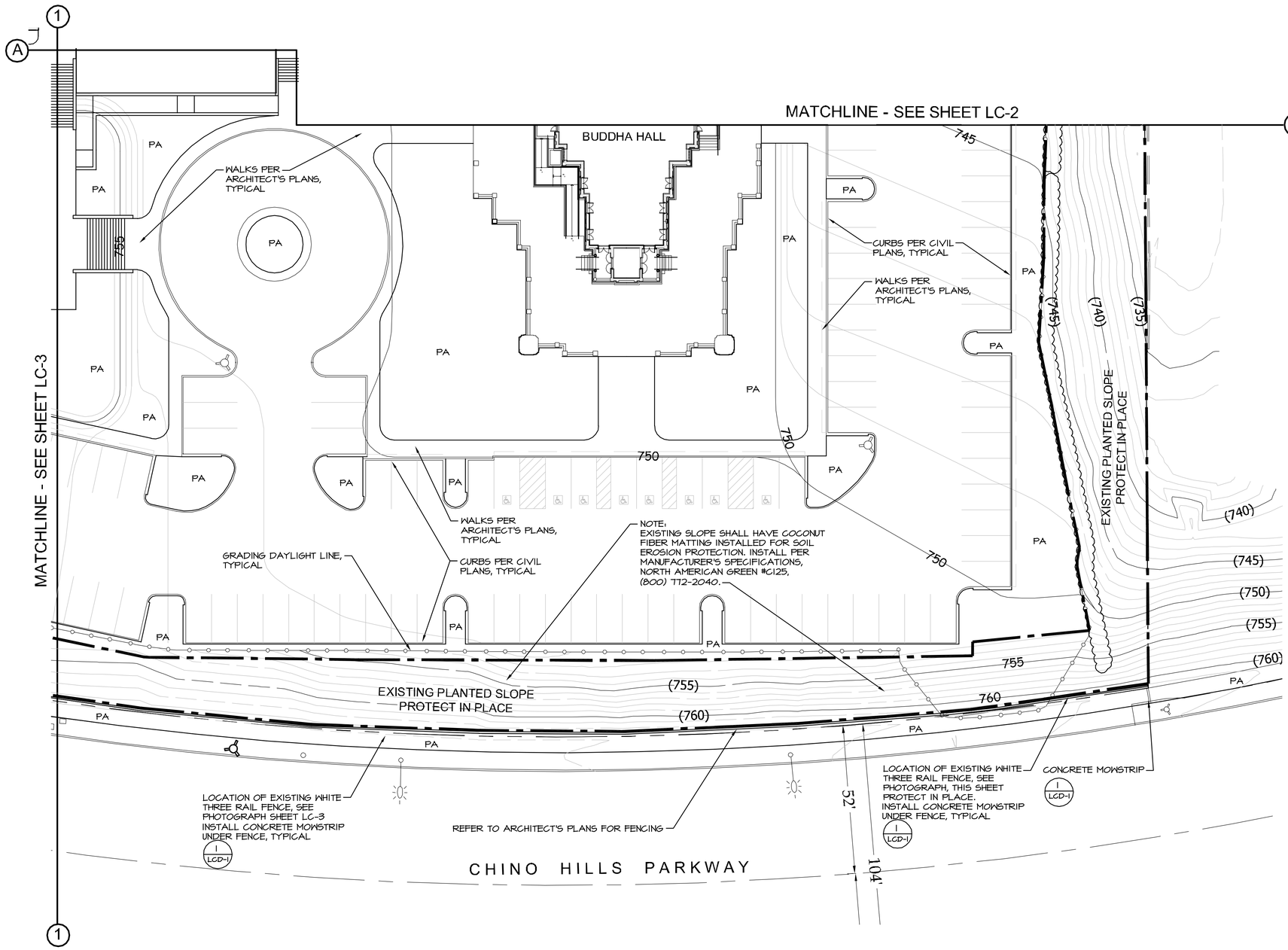
SHEET TITLE: LANDSCAPE CONSTRUCTION PLAN

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

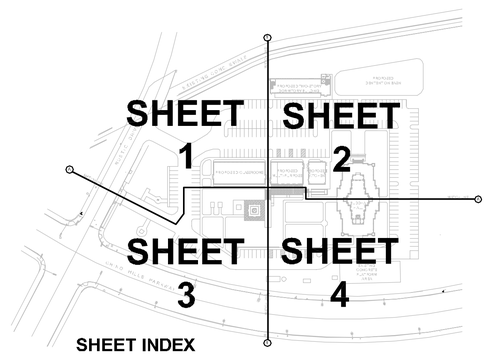
LICENSED LANDSCAPE ARCHITECT
ROBERT R. ROBERTS, JR.
8-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LC-3
	4 OF 20 SHEETS



GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO APPLICABLE LOCAL CODES.
2. BASE SHEET INFORMATION FOR THESE PLANS WAS DERIVED FROM PLANS BY GILLIS + PANICHAPAN ARCHITECTS, COSTA MESA, CALIFORNIA, (714) 668-4260.
3. CONTRACTOR SHALL MAKE HIMSELF FULLY AWARE OF SITE CONDITIONS PRIOR TO ISSUING HIS BID. LACK OF KNOWLEDGE OF EXISTING SITE CONDITIONS SHALL NOT BE A BASIS FOR ADDITIONAL COSTS DURING CONSTRUCTION.
4. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY SHOULD ANY DISCREPANCIES BE FOUND ON THESE PLANS. ANY WORK PERFORMED BY THE CONTRACTOR PRIOR TO RECEIVING A CLARIFICATION FROM THE LANDSCAPE ARCHITECT MAY REQUIRE REMOVAL AND RECONSTRUCTION OR WORK PERFORMED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
5. AT THE TIME OF BID, THE CONTRACTOR SHALL MAKE THE OWNER AWARE OF THE EXPECTED CONDITION OF THE SITE PRIOR TO HIS WORK. SHOULD WORK BY OTHERS, PERFORMED PRIOR TO THE CONTRACTORS MOVING ON-SITE, RESULT IN POTENTIAL ADDITIONAL EXPENSES INCURRED BY THE CONTRACTOR, THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE EXPENSES PRIOR TO THE WORK BEING DONE. THE CONTRACTOR MAY ASSUME FULL RESPONSIBILITY FOR ANY ADDITIONAL EXPENSES FOR WORK PERFORMED WITHOUT OWNER'S AUTHORIZATION.
6. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY SHOULD FIELD CONDITIONS VARY FROM THE PLANS.
7. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION. ANY DAMAGE TO EXISTING SITE ELEMENTS OR UTILITIES SHALL BE IMMEDIATELY AND PROPERLY REPAIRED TO ITS FORMER STATE AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION PRIOR TO BEGINNING WORK.
9. CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR ON THE SITE AT ALL TIMES DURING CONSTRUCTION THROUGH COMPLETION OF PICK-UP WORK.
10. CONTRACTOR SHALL REMOVE ALL EXCESS SOIL GENERATED BY HIS OPERATIONS FROM THE SITE, PER ALL APPLICABLE CODES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF DEBRIS FROM SITE, PER ALL APPLICABLE CODES, AS WAS CREATED FROM HIS CONSTRUCTION.
12. THE DESIGNATION "PA" DENOTES PLANTING AREA.



SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: JOSEPH A. VARONA ASLA CLA CMT737
PO BOX 1716, HUNTINGTON BEACH, CALIFORNIA 92647
(PH) 949-702-1911 (FX) 949-702-0239
ORANGE COUNTY OFFICE
2600 MICHELSON DRIVE, SUITE 112, IRVINE, CALIFORNIA 92614
(PH) 949-250-1515 (FX) 949-250-1901

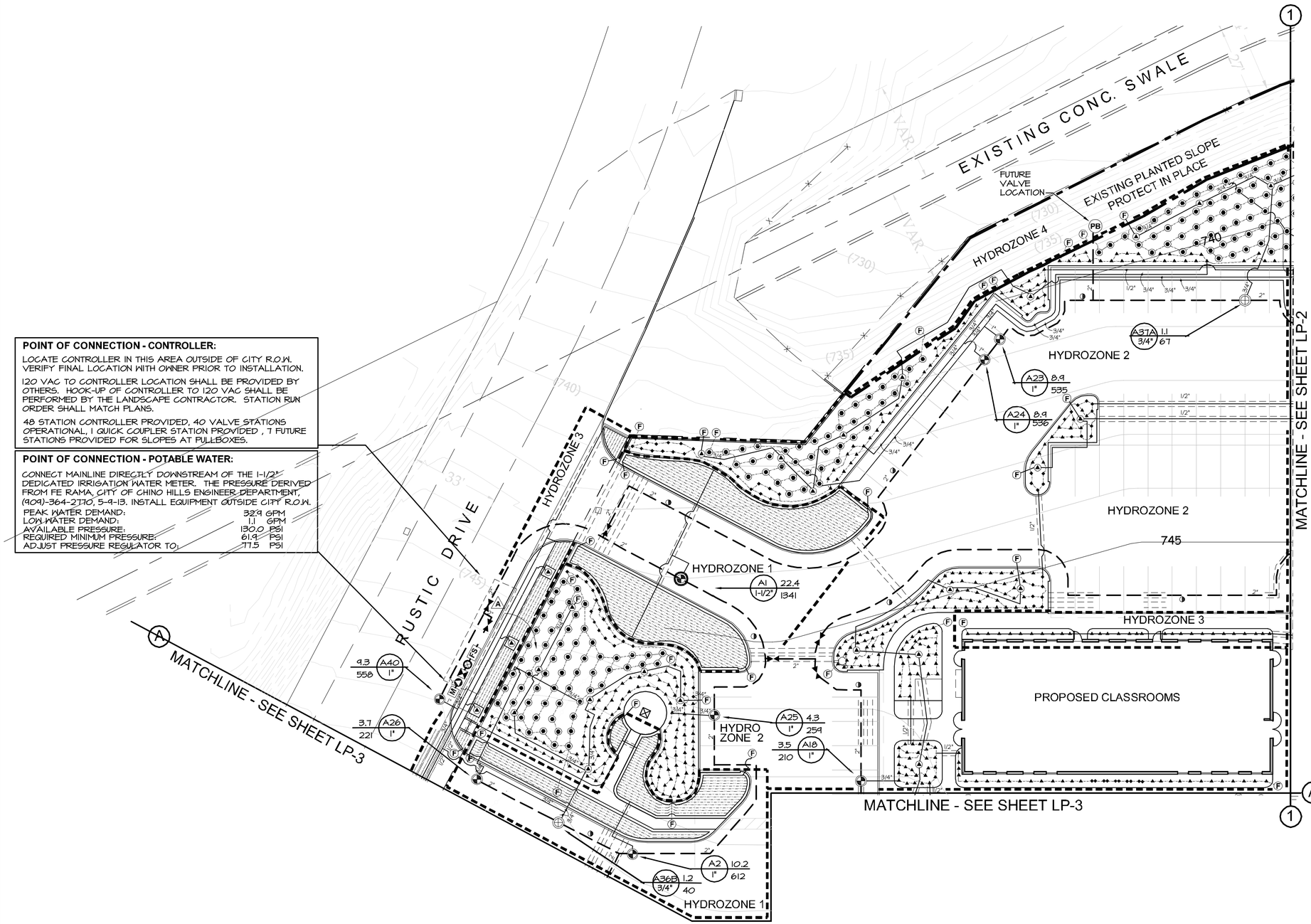
SHEET TITLE: **LANDSCAPE CONSTRUCTION PLAN**

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
JOSEPH A. VARONA No. 5062
8-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LC-4
	5 OF 20 SHEETS



POINT OF CONNECTION - CONTROLLER:

LOCATE CONTROLLER IN THIS AREA OUTSIDE OF CITY R.O.W. VERIFY FINAL LOCATION WITH OWNER PRIOR TO INSTALLATION.

120 VAC TO CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. HOOK-UP OF CONTROLLER TO 120 VAC SHALL BE PERFORMED BY THE LANDSCAPE CONTRACTOR. STATION RUN ORDER SHALL MATCH PLANS.

48 STATION CONTROLLER PROVIDED, 40 VALVE STATIONS OPERATIONAL, 1 QUICK COUPLER STATION PROVIDED , 7 FUTURE STATIONS PROVIDED FOR SLOPES AT PULLBOXES.

POINT OF CONNECTION - POTABLE WATER:

CONNECT MAINLINE DIRECTLY DOWNSTREAM OF THE 1-1/2" DEDICATED IRRIGATION WATER METER. THE PRESSURE DERIVED FROM FE RAMA, CITY OF CHINO HILLS ENGINEER DEPARTMENT, (909)-364-2710, 5-9-13. INSTALL EQUIPMENT OUTSIDE CITY R.O.W.

PEAK WATER DEMAND:	32.9 GPM
LOW WATER DEMAND:	1.1 GPM
AVAILABLE PRESSURE:	130.0 PSI
REQUIRED MINIMUM PRESSURE:	61.9 PSI
ADJUST PRESSURE REGULATOR TO:	77.5 PSI

IRRIGATION LEGEND:

SYMBOL	PRODUCT	MODEL	DESCRIPTION
M	——	——	WATER METER
A	RAINBIRD	ESP-LXMEF-ET	TEMPLE ON-SITE CONTROLLER
PB	CARSON	910-12B	PULLBOX
	WILKINS	500	PRESSURE REDUCING VALVE
	FEBCO	825Y	RP BACKFLOW PREVENTER
	HAMMOND	8201	BRONZE FULL PORT BALL VALVE
	RAINBIRD	100-PESB	NORMALLY-CLOSED MASTER VALVE
FI	EZ FLO	EZ005	FERTILIZER INJECTOR
FS	CST	IFC-150C	FLOW SENSOR
	RAINBIRD	PEB	ELECTRIC REMOTE CONTROL VALVE
	RAINBIRD	33DLRC	QUICK COUPLING VALVE
	RAINBIRD	PA-85	(2) BUBBLERS IN PERFORATED PIPES

2"	BURIED PRESSURE MAINLINE PIPING
1/2"	BURIED NON-PRESSURE LATERAL LINE
	BURIED RAINBIRD XT-700 LATERAL LINE TUBING
	RAINBIRD #XFCV-06-12 SUB-SURFACE DRIPLINE
2"	PIPE SLEEVE, PVC SCH. 40
2"	CONTROL WIRE SLEEVE, PVC SCH. 40

DRIP IRRIGATION LEGEND:

SYM	PRODUCT	MODEL
	RAINBIRD	XCZ-075-PRF DRIP CONTROL ZONE KIT
	RAINBIRD	XCZ-PRB-100-COM DRIP CONTROL ZONE KIT
	RAINBIRD	XCZ-PRB-150-COM DRIP CONTROL ZONE KIT
F	SPEARS OR EQUIVALENT	#2622 DRIP FLUSH VALVE
	RAINBIRD	36" BOX TREE DRIP DETAIL (SLOPE)
	RAINBIRD	24" BOX TREE DRIP DETAIL (SLOPE)
	RAINBIRD	15 GALLON TREE DRIP DETAIL (SLOPE)
	NETAFIM	WPC ON-SLOPE SINGLE 2 GPH EMITTER
	NETAFIM	WPC ON-SLOPE SINGLE 1 GPH EMITTER
	RAINBIRD	TREE ASSEMBLY (FLAT AREAS)
	RAINBIRD	TREE ASSEMBLY (FLAT AREAS)
	RAINBIRD	TREE ASSEMBLY (FLAT AREAS)
	RAINBIRD	TREE ASSEMBLY (FLAT AREAS)
	RAINBIRD	SHRUB EMITTER (FLAT AREAS)
	RAINBIRD	SHRUB EMITTER (FLAT AREAS)

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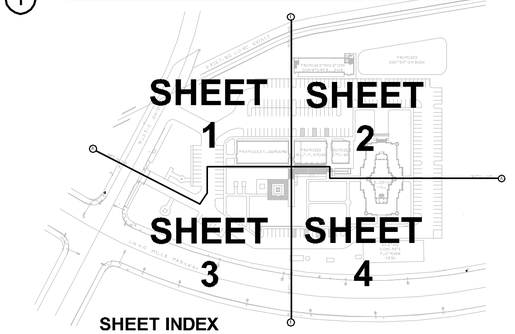

SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CONSTRUCTION MGMT. · JOSEPH A. MORONI AGLI CUA CM#737
27999 SMYTH DRIVE, VALENCIA, CALIFORNIA 91355
(PH) 661-702-1911 (FAX) 661-702-0283
LANDSCAPE ARCHITECTURE · IRRIGATION DESIGN
1300 REYNOLDS AVENUE #112, IRVINE, CALIFORNIA 92614
(PH) 949-250-1515 (FX) 949-250-1891

SHEET TITLE: **LANDSCAPE IRRIGATION PLAN**

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT · ROBERT M. KORVETT · No. 3744 · 11-30-14 Renewal Date · 8-31-16 Renewal Date · 8-25-16 Date · STATE OF CALIFORNIA

Signature · 11-30-14 Renewal Date · Date · STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LI-1
	6 OF 20 SHEETS

EXISTING CONC. SWALE

EXISTING PLANTED SLOPE PROTECT IN PLACE

FUTURE VALVE LOCATION

HYDROZONE 4

PROPOSED DENTENTION BASIN

PROPOSED TWO-STORY DORMITORY BUILDING

HYDROZONE 2

HYDROZONE 1

HYDROZONE 3

PROPOSED MULTI-PURPOSE

PROPOSED KITCHEN

BUDDHA HALL

MATCHLINE - SEE SHEET LI-1

MATCHLINE - SEE SHEET LI-4

A22 8.3 1" 447 | A21 1.5 3/4" 90 | 3.4 A20 1" 203 | 2.5 A19A 3/4" 151 | A8 5.3 1" 320 | A9 11.2 1" 667 | A6 20.6 1-1/2" 1237 | A39 2.0 1" | 4.1 A19B 1" 248 | A37B 1.5 3/4" 91 | 2.2 A10 3/4" 130 | 2.9 A32 3/4" 174 | 2.8 A33 3/4" 167.2 | 6.9 A31 1" 416

IRRIGATION LEGEND:

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M	——	——	WATER METER
A	RAINBIRD	ESP-LXMEF-ET	TEMPLE ON-SITE CONTROLLER
PB	CARSON	910-12B	PULLBOX
	WILKINS	500	PRESSURE REDUCING VALVE
	FEBCO	825Y	RP BACKFLOW PREVENTER
	HAMMOND	8201	BRONZE FULL PORT BALL VALVE
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FS	CST	IFC-150C	FLOW SENSOR
	RAINBIRD	PEB	ELECTRIC REMOTE CONTROL VALVE
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	RAINBIRD	PA-8S	(2) BUBBLERS IN PER-FORATED PIPES

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NOTES AND LEGENDS:
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SHEET INDEX
NTS

SHEET 1 | SHEET 2 | SHEET 3 | SHEET 4

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: JOSEPH A. VIRGINIA ASLA, CLA, CMT/ST
2211 MICHELSON DRIVE, SUITE 112, IRVINE, CALIFORNIA 92614
(TEL) 949-250-1911 (FAX) 949-705-0293
ORANGE COUNTY OFFICE:
2211 MICHELSON DRIVE, SUITE 112, IRVINE, CALIFORNIA 92614
(TEL) 949-250-1915 (FAX) 949-250-1911

SHEET TITLE: LANDSCAPE IRRIGATION PLAN

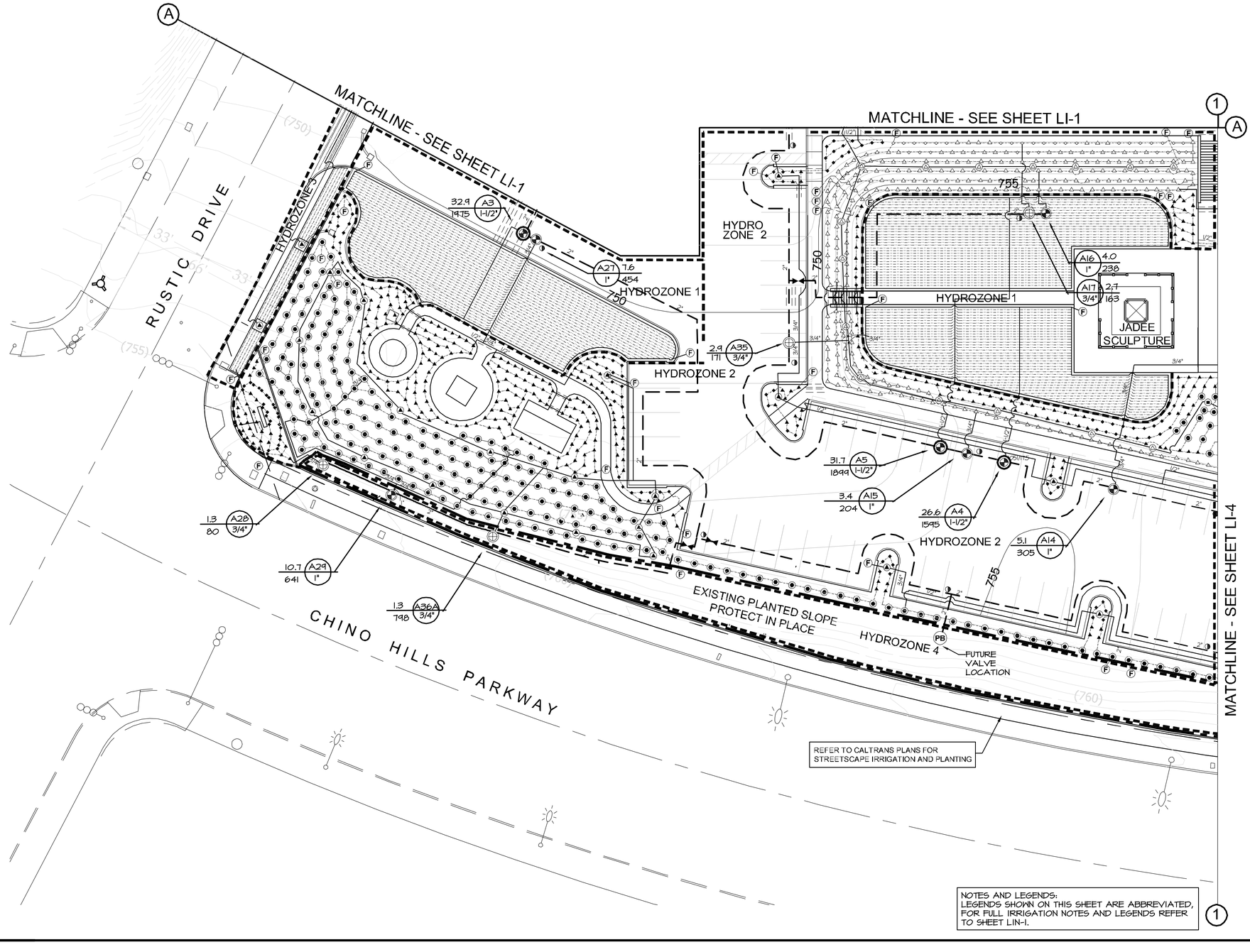
PROJECT: WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA

CLIENT: WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT M. KOBZEFF No. 5497
11-30-16 Renewal Date
8/28/16 Date
STATE OF CALIFORNIA

Signature
11-30-14 Renewal Date
Date
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LI-2
7 OF 20 SHEETS	



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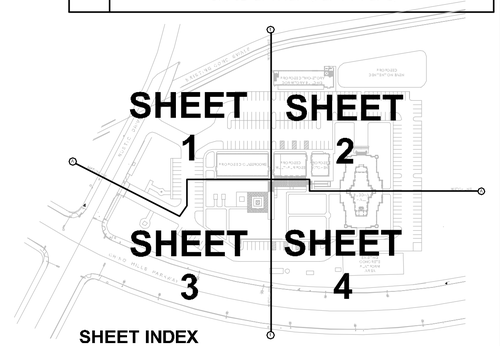

SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: JOSEPH A. VARNINI ASLA, CLA, CMIT/37
2380 EUCLID AVENUE, CORONA, CALIFORNIA 91733
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ORANGE COUNTY OFFICE:
2400 E. KATELLA AVENUE, SUITE 415, ANAHEIM, CALIFORNIA 92614
(PH) 949-250-1515 (FX) 949-250-1931

SHEET TITLE: LANDSCAPE IRRIGATION PLAN

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT H. ROBZEFF, RLA
8-31-16
Renewal Date
STATE OF CALIFORNIA

TCL
Signature
11-30-14
Renewal Date
Date
STATE OF CALIFORNIA

JOB NO.	12017
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SCALE:	1" = 20'
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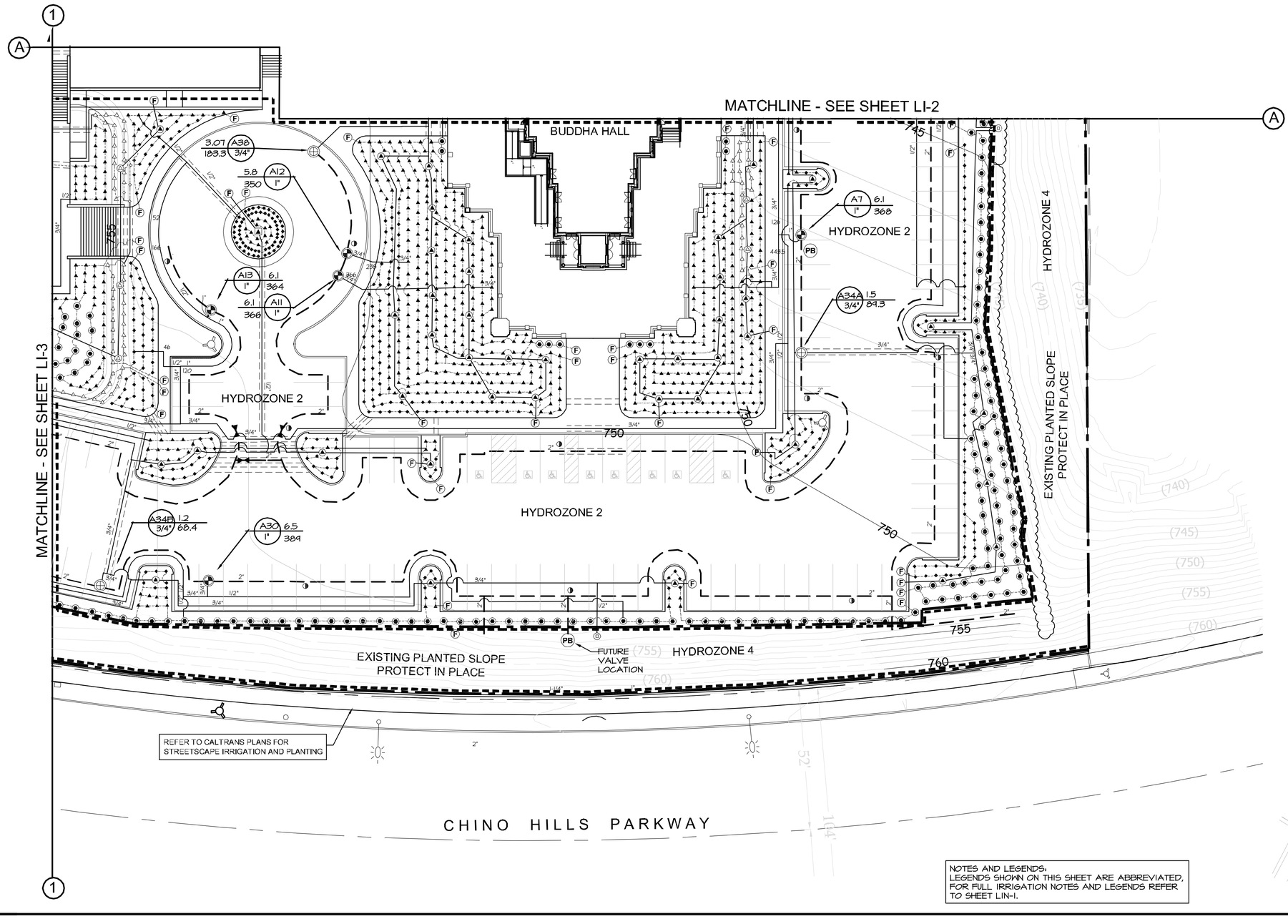
SHEET:	LI-3

8 OF 20 SHEETS



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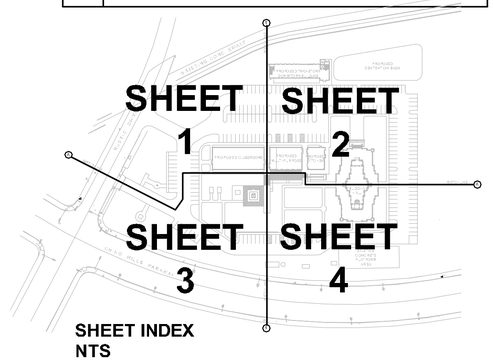

SHEET INDEX
NTS

REVISIONS	BY

TCLA, Inc.
CORPORATE OFFICE: 27281 LAS RAMBLAS, SUITE A, MISSION VIEJO, CA. CA. 92737 (714) 364-1037
SAN JOSE OFFICE: 1390 RIDDER PARK DRIVE, SAN JOSE, CA. 95131 (714) 364-1037
1390 REYNOLDS AVENUE #112, IRVINE, CALIFORNIA 92614 (949) 250-1515 (FX) 949-250-1591

SHEET TITLE: LANDSCAPE IRRIGATION PLAN

CLIENT: WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

PROJECT: WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
GARRETT H. ROREX
No. 5331
11-30-16
RENEWAL DATE
STATE OF CALIFORNIA

Signature
11-30-14
Renewal Date
Date
STATE OF CALIFORNIA

JOB NO.	12017
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DRAWN:	JG
SHEET:	LI-4
9 OF 20 SHEETS	

DRIP PRESSURE LOSS CHART	HIGH SYS.HEAD:	752'
VALVE: A3	POC ELEV:	748'
GPM: 32.9 GPH: 1975	PSI AT POC:	130.0
1-1/2" WATER METER	2.1	PSI
1-1/2" BACKFLOW PREVENTER	12.0	PSI
1" MASTER VALVE	6.9	PSI
1" FLOW SENSOR, (FIXED)	1.0	PSI
265 LF OF 2" MAINLINE	2.7	PSI
FITTINGS (20% MAINLINE LOSS)	0.5	PSI
1-1/2" REMOTE CONTROL VALVE KIT	15.0	PSI
LATERAL LINE LOSSES, (FIXED)	5.0	PSI
FLUSH VALVE	15.0	PSI
ELEVATION (+) UPHILL, (-) DOWNHILL	1.7	PSI
① TOTAL SYSTEM LOSSES:	61.9	PSI
SUMMARY:		
② AVAILABLE STATIC PRESSURE AT POC:	130.0	PSI
③ AVAILABLE DYNAMIC PRESSURE AT POC: ②X .75	97.5	PSI
④ REQ'D SYSTEM MINIMUM DYNAMIC PRESSURE: ①	61.9	PSI
⑤ RESIDUAL DYNAMIC PRESSURE: ③ - ④	35.6	PSI

NOTE: ALL DRIP IRRIGATION VALVES HAVE PRESSURE REGULATION, REFER TO IRRIGATION LEGEND

DRIP PRESSURE LOSS CHART	HIGH SYS.HEAD:	743'
VALVE: A11	POC ELEV:	748'
GPM: 20.6 GPH: 1237	STATIC PSI AT POC:	130.0
1-1/2" WATER METER	1.0	PSI
1" BACKFLOW PREVENTER	12.0	PSI
1" MASTER VALVE	3.0	PSI
1-1/2" FLOW SENSOR, (FIXED)	1.0	PSI
650 LF OF 2" MAINLINE	2.8	PSI
FITTINGS (20% MAINLINE LOSS)	0.6	PSI
1-1/2" REMOTE CONTROL VALVE	10.0	PSI
LATERAL LINE LOSSES, (FIXED)	5.0	PSI
FLUSH VALVE	15.0	PSI
ELEVATION (+) UPHILL, (-) DOWNHILL	-2.2	PSI
① TOTAL SYSTEM LOSSES:	48.2	PSI
SUMMARY:		
② AVAILABLE STATIC PRESSURE AT POC:	130.0	PSI
③ AVAILABLE DYNAMIC PRESSURE AT POC: ②X .75	97.5	PSI
④ REQ'D SYSTEM MINIMUM DYNAMIC PRESSURE: ①	48.2	PSI
⑤ RESIDUAL DYNAMIC PRESSURE: ③ - ④	49.3	PSI

NOTE: ALL DRIP IRRIGATION VALVES HAVE PRESSURE REGULATION, REFER TO IRRIGATION LEGEND

DRIP IRRIGATION LEGEND:

SYMBOL	PRODUCT	MODEL	DESCRIPTION	DETAIL
	RAINBIRD	XCZ-075-PRF	LOW-FLOW CONTROL ZONE KIT. KIT INCLUDES 3/4" VALVE, AND 30 PSI INLINE PRESSURE REGULATOR. FLOW RATES FROM 0. 2 GPM TO 5 GPM.	4 / LCD-2
	RAINBIRD	XCZ-PRB-100-COM	MEDIUM-FLOW CONTROL ZONE KIT. KIT INCLUDES 1" PESB SCRUBBER VALVE, QUICK-CHECK PRESSURE REGULATING BASKET STRAINER, AND 40 PSI INLINE PRESSURE REGULATOR. FLOW RATES FROM 3 GPM TO 20 GPM.	5 / LCD-2
	RAINBIRD	XCZ-PRB-150-COM	HIGH-FLOW CONTROL ZONE KIT. KIT INCLUDES (1) 1-1/2" PESB SCRUBBER VALVE, AND (2) 40 PSI PRESSURE REGULATING BASKET FILTERS. FLOW RATES FROM 15 GPM TO 40 GPM.	6 / LCD-2
Ⓕ	SPEARS OR EQUIVALENT	#2622	PVC BALL VALVE FOR SYSTEM FLUSH VALVE WITH 48" FLUSH HOSE EXTENSION LINE SIZE	5 / LCD-3
	RAINBIRD	VARIES	36" TREE IRRIGATION DETAIL ON-SLOPE USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	2 / LCD-3
	RAINBIRD	VARIES	24" TREE IRRIGATION DETAIL ON-SLOPE USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	3 / LCD-3
	RAINBIRD	VARIES	15 GALLON TREE IRRIGATION DETAIL ON-SLOPE USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	4 / LCD-3
	NETAFIM	WPC	ONE (1)-SINGLE OUTLET, ON-SLOPE, WITH 2-GPH NETAFIM WPC20-250 DRIP EMITTER WITH BUG CAP ON RAINBIRD XQ ¼" DISTRIBUTION TUBING AND RAINBIRD XT025 GREY TRANSFER FITTING.	7,8&9 / LCD-2
	NETAFIM	WPC	ONE (1)-SINGLE OUTLET, ON-SLOPE, WITH 1-GPH NETAFIM WPC10-250 DRIP EMITTER WITH BUG CAP ON RAINBIRD XQ ¼" DISTRIBUTION TUBING AND RAINBIRD XT025 GREY TRANSFER FITTING.	7,8&9 / LCD-2
	RAINBIRD	TREE ASSEMBLY	48" TREE IRRIGATION DETAIL USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	10 / LCD-2
	RAINBIRD	TREE ASSEMBLY	36" TREE IRRIGATION DETAIL USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	11 / LCD-2
	RAINBIRD	TREE ASSEMBLY	24" TREE IRRIGATION DETAIL USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	12 / LCD-2
	RAINBIRD	TREE ASSEMBLY	15 GALLON TREE/LARGE SHRUB IRRIGATION DETAIL USING RAINBIRD XF SERIES DRIPLINE AND SINGLE EMITTERS, SEE DETAIL	1 / LCD-3
	RAINBIRD	SHRUB EMITTER	ONE (1)-SINGLE OUTLET, WITH 2-GPH RAINBIRD XERI-BUG DRIP EMITTER	7,8&9 / LCD-2
	RAINBIRD	SHRUB EMITTER	ONE (1)-SINGLE OUTLET, WITH 1-GPH RAINBIRD XERI-BUG DRIP EMITTER	7,8&9 / LCD-2

EMITTER LEGEND

	CONTAINER SIZE	BASIN DIAMETER	BASIN AREA	EMITTER	EMITTER GPH	NUMBER EMITTERS PER PLANT	TOTAL GPH PER PLANT
TREES:							
CEDRUS DEODARA	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
CHITALPA TASHKENTENSIS	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
FICUS RUBIGINOSA	48" BOX	8'	50 SF	—	SEE DETAIL	SEE DETAIL	15.4
FICUS RUBIGINOSA	36" BOX	6'	30 SF	—	SEE DETAIL	SEE DETAIL	9.5
JACARANDA ACUTIFOLIA	36" BOX	6'	30 SF	—	SEE DETAIL	SEE DETAIL	9.5
KOELREUTERIA BIPINNATA	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
LOPHOSTEMON CONFERTA	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
MAGNOLIA GRANDIFLORA	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
PYRUS KAWAKAMII	24" BOX	4'	12 SF	—	SEE DETAIL	SEE DETAIL	5.7
SHRUBS:							
ALOE 'BLUE ELF'	1 GALLON	1.5'	2 SF	XB-10PC	1	1	1.0
ACACIA REDOLENS	5 GALLON - LARGE	3'	7 SF	—	SEE DETAIL	SEE DETAIL	3.5
ARBUTUS UNEDO 'COMPACTA'	5 GALLON	2'	3 SF	XB-20PC	1	2	2.0
ARCTOSTAPHYLOS 'PACIFIC MIST'	5 GALLON - LARGE	3'	7 SF	—	SEE DETAIL	SEE DETAIL	3.5
CEANOTHUS 'JULIA PHELPS'	5 GALLON - LARGE	3'	7 SF	—	SEE DETAIL	SEE DETAIL	3.5
CARISSA MACROCARPA 'G.C.'	1 GALLON	1.5'	2 SF	XB-20PC	2	1	2.0
CALLISTEMON 'LITTLE JOHN'	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
CUPRESSUS SEMPERVIRENS	TRANSPLANTED	3'	7 SF	—	SEE DETAIL	SEE DETAIL	3.5
GERANIUM SANGUINEUM	1 GALLON	1.5'	2 SF	XB-20PC	2	1	2.0
HETEROMELES ARBUTIFOLIA	5 GALLON - LARGE	3'	7 SF	—	SEE DETAIL	SEE DETAIL	3.5
HEMEROCALLIS HYBRID	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
LEUCOPHYLLUM 'LYNN'S LEGACY'	5 GALLON	2'	3 SF	XB-10PC	1	2	2.0
LIGUSTRUM JAPONICUM 'TEXANUM'	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
LIRIOPE MUSCARI 'BIG BLUE'	1 GALLON	1.5'	2 SF	XB-20PC	2	1	2.0
LANTANA 'NEW GOLD'	1 GALLON	1.5'	2 SF	XB-10PC	1	1	1.0
MYOPORUM PARVIFOLIUM 'P.C.'	1 GALLON	1.5'	2 SF	XB-10PC	1	1	1.0
ROSA 'CHINA DOLL'	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
ROSA 'ICEBERG'	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
SALVIA GREGGII	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0
TRACHELOSPERMUM JASMINOIDES	1 GALLON	1.5'	2 SF	XB-20PC	2	1	2.0
VINES:							
PARTHENOCISSUS TRICUSPIDATA	5 GALLON	2'	3 SF	XB-20PC	2	1	2.0

NOTE: PROVIDE AND INSTALL AT EACH EMITTER OUTLET, REQUIRED QUANTITY OF RAINBIRD "XQ" 1/4" DISTRIBUTION TUBING, #DBC-025 DIFFUSER BUG CAP AND PC DIFFUSER CAPS IF EMITTER IS OVER 2 GPH. BURY ALL DISTRIBUTION TUBING AT MINIMUM 9" BELOW GRADE (EXCEPT AT END OF TUBING AT BUG CAP/EMITTER).

IRRIGATION LEGEND:

SYMBOL	PRODUCT	MODEL	DESCRIPTION	DETAIL
M	——	——	IRRIGATION WATER METER PROVIDED BY OWNER - 1-1/2", SEE CIVIL ENGINEER'S PLANS.	——
A	RAINBIRD	ESP-LXMEF-ET	AUTOMATIC IRRIGATION CONTROLLER 'A'. FACTORY ASSEMBLED CONTROLLER WITHIN A "STRONGBOX" VANDAL-RESISTANT STAINLESS STEEL ENCLOSURE. IMPERIAL SUPPLY, GREEN PRODUCT SALES, DARYL GREEN, (949) 584-7311. CONTROLLER NO ICA6-RB3-48/SP/ETMA-LX/RMPM-UA/2RRC/32EX/IFS-150C/HFL. CONTROLLER INCLUDES: RAIN SENSOR ON ENCLOSURE SP: SURGE PROTECTION IFS-150C - 1-1/2" FLOW SENSOR RMPM: REMOTE CONTROL UNIT TO BE BOUGHT, CONNECTED AND GIVEN TO OWNER. ETMA -ET MANAGER WEATHER BASED DATA FOR CONTROLLER IS OFFERED AS A PUBLIC SERVICE FREE OF CHARGE BY RAINBIRD AND VALLEY SOIL. SEE SHEET LIN-2 FOR DATA.	3 / LCD-1
PB	CARSON	910-12B	10" ROUND PLASTIC CONTROL AND COMMON WIRE PULL BOX. COIL MINIMUM 36" OF WIRE WITHIN BOX.	10 / LCD-1
	WILKINS	500	PRESSURE REDUCING VALVE ON BACKFLOW PREVENTER RISER - LINE SIZE	4 / LCD-1
	FEBCO	825Y	RP BACKFLOW PREVENTER - 1-1/2". INSTALL WITHIN A "STRONGBOX" LOW PROFILE SMOOTH TOUCH STAINLESS STEEL METAL WIRE MESH ENCLOSURE # SBBC-4555 (18"W X 47"L X 30"H)	4 / LCD-1
	HAMMOND	8201	BRONZE FULL PORT BALL VALVE - LINE SIZE TO 3"	11 / LCD-1
	RAINBIRD	100-PESB	NORMALLY-CLOSED MASTER VALVE - 1". PROVIDE WITH RAINBIRD SOL-ADA SOLENOID ADAPTER.	8 / LCD-1
FI	EZ FLO	EZ005	FERTILIZER INJECTOR SYSTEM IN BOX	9 / LCD-1
FS	CST	IFC-150C	FLOW SENSOR - 1-1/2".	7 / LCD-1
	RAINBIRD	PEB	ELECTRIC REMOTE CONTROL VALVE IN BOX - SIZE PER PLAN	1 / LCD-2
	RAINBIRD	33DLRC	QUICK COUPLING VALVE WITH YELLOW RUBBER LOCKING CAP - 3/4". USE CONTROLLER STATION NUMBER 48 FOR QUICK COUPLING VALVE OPERATION.	12 / LCD-1
	RAINBIRD	PA-8S	(2) BUBBLERS IN PERFORATED PIPES	3 / LCD-2
2"			BURIED PRESSURE MAINLINE PIPING, SIZE PER PLAN. USE CLASS 315 FOR PIPE 2" AND LARGER AND SCHEDULE 40 FOR 1-1/2" AND SMALLER.	5 / LCD-1
1/2"			BURIED NON-PRESSURE LATERAL LINE PIPING, PVC SCHEDULE 40, SIZE PER PLAN	5 / LCD-1
			BURIED RAINBIRD XT-700 LATERAL LINE TUBING - 1/2" POLYETHYLENE LATERAL TUBING	5 / LCD-1
			RAINBIRD #XFCV-06-12 SUB-SURFACE DRIPLINE WITH CHECKVALVE CAPABILITY. INSTALL DRIPLINE AT 6" AWAY FROM HARDSCAPE EDGE AND 12" SPACING BETWEEN PARALLEL DRIPLINE. INSTALL DRIPLINE AT 4" BELOW FINISH GRADE AND STAKE DRIPLINE AT 4' ON-CENTER WITH RAINBIRD #LDI6STK STAKES. CONNECT DRIPLINE WITH RAINBIRD "EASY FIT" MDC FITTINGS.	7,8,9 / LCD-3 1&3 / LCD-4
2"			PIPE SLEEVE, PVC SCH. 40, FOR IRRIGATION PIPING INSTALLED UNDER PAVING, SIZE NOTED ON PLAN. IF NO SIZE NOTED, USE TWICE THE DIAMETER OF THE INTERIOR PIPE. IRRIGATION CONTRACTOR SHALL INSTALL SLEEVING, INCLUDING WALL PENETRATIONS WHERE NECESSARY.	6 / LCD-1
2"			CONTROL WIRE SLEEVE, PVC SCH. 40, INSTALLED UNDER PAVING BY IRRIGATION CONTRACTOR. SEE "SLEEVE LEGEND" FOR SIZE OF SLEEVE.	6 / LCD-1

REVISIONS	BY

TCLA, Inc.
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2211 E. FRANCISCO BLVD. SAN BERNARDINO, CA 92405
(P) (909) 883-7707 (F) (909) 883-7717
ORANGE COUNTY OFFICE:
1 CORPORATE PARK, SUITE 112, IRVINE, CALIFORNIA 92614
(P) (949) 430-1505 (F) (949) 430-1801

SHEET TITLE: **LANDSCAPE IRRIGATION NOTES & LEGENDS**

PROJECT: **WAT PHRA THAT DOI SUTHEP USA**
CHINO HILLS, CALIFORNIA, 91709

CLIENT: **WAT PHRA THAT DOI SUTHEP USA**
2348 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
LEONARD H. KORZEP No. 2497
6-30-16
RENEWAL DATE
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	---
DRAWN:	JG
SHEET:	**LIN-1**
	10 OF **20** SHEETS

EXISTING SLOPE IRRIGATION NOTE:

THE EXISTING SLOPE AREA SHALL BE PROTECTED IN PLACE, AND SHALL RECEIVE THE FOLLOWING WORK.

1. THE ENTIRE SLOPE AREA SHALL RECEIVE COCONUT FIBER EROSION CONTROL MATTING AS SHOWN ON THE LANDSCAPE CONSTRUCTION PLAN..

2. PRIOR TO THE MATTING BEING INSTALLED THE SLOPE SHALL RECEIVE THE SAME WEED ABATEMENT WORK AS THE REST OF THE SITE, AND SHALL BE MAINTAINED THROUGHOUT THE TERM OF THIS CONTRACT.

3. PROVIDE DIFFERENT COLORED WIRES THROUGH THE PULLBOXES AS SHOWN ON PLAN FOR STATIONS NUMBERED A41 THROUGH A47. STATION A48 SHALL REMAIN OPEN FOR CONNECTION TO THE MASTER VALVE FOR THE OPERATION OF THE QUICK COUPLING VALVES.

EACH OF THE ABOVE NINE (1) WIRES SHALL BE OF A DIFFERING COLOR AND BE RUN THROUGH EVERY PULLBOX AT THE PERIMETER OF THE PARKING LOT AS SHOWN ON PLAN. RUN THE WIRES TO THE WIRE STRIP INSIDE THE CONTROLLER ENCLOSURE AND PROVIDE ENOUGH WIRE FOR AN EASY FUTURE CONNECTION TO THE CONTROLLER STRIP. PROVIDE A MINIMUM 36" LENGTH OF PIGTAIL TO EACH WIRE IN EACH PULLBOX FOR EASY FUTURE VALVE CONNECTIONS. DO NOT INSTALL VALVES IN THESE SEVEN (1) BOXES.

INSTALL A VERTICAL 2" MAINLINE STUB INSIDE EACH PULLBOX LOCATION FOR FUTURE VALVE INSTALLATION. CAP VERTICAL PIPE WITH A GLUED SCHEDULE 80 PVC CAP.

OWNER TO INSTALL FUTURE VALVES FOR EXISTING SLOPE IRRIGATION TO NEW CONTROLLER AT A LATER DATE.

MAWA: MAXIMUM APPLIED WATER ALLOWANCE: (ETo per City L&W Conservation Guidelines)

MAWA = (ETo x 0.7 x LA x 0.62) + (ETO x 1.0 x SLA x 0.62) = Gallons per year for LA + SLA.
where:
MAWA = Maximum Applied Water Allowance (gallons per year)
ETO = Reference Evapotranspiration (inches per year)
ETAF = Evapotranspiration Adjustment Factor
LA = Landscaped Area (square feet)
SLA = Special Landscaped Area (square feet)
0.7 = ETAF for Landscaped Area
1.0 = ETAF for Special Landscaped Area
0.62 = Conversion factor (to gallons per square foot)

MAWA Calculation: On-site potable water meter

	ETo		ETAF		LA or SLA (square ft.)		Conversion		MAWA (Gallons per Year)
MAWA for LA	54.6	x	0.7	x	134,465	x	0.62	=	3,186,336
MAWA for SLA	54.6	x	1.0	x	0	x	0.62	=	0
							Total MAWA =		3,186,336

EAWU: ESTIMATED APPLIED WATER USE (Per CityLandscape and Water Conservation Guidelines)

EAWU = ETo x K_L x LA x 0.62 / IE = Gallons per year
where:
EAWU = Estimated Applied Water Use (gallons per year)
ETO = Reference Evapotranspiration (inches per year)
K_L = Landscape Coefficient
LA = Landscaped Area (square feet)
0.62 = Conversion factor (to gallons per square foot)
IE = Irrigation Efficiency

LANDSCAPE COEFFICIENT:
$K_L = K_s \times K_d \times K_{mc}$
K_s = species factor - 0.1 (dry) - 0.9 (wet)
K_d = density factor - 0.5 (sparse) - 1.3 (dense)
K_{mc} = microclimate factor - 0.5 (cool) - 1.4 (hot)

EAWU Calculation: On-site potable water meter

No.	Hydrozone	ETo		K_L		LA or SLA (square ft.)		Conversion		IE		EAWU (Gallons/Yr.)
(1)	Turf (On-site)	54.6	x	.8	x	16,305	x	0.62	/	.90	=	613,285
(2)	Moderate	54.6	x	.5	x	68,575	x	0.62	/	.90	=	1,289,667
(3)	Turf (ROW)	54.6	x	.8	x	970	x	0.62	/	.90	=	29,188
(4)	Existing Slope	54.6	x	.5	x	48,615	x	0.62	/	.90	=	914,286
										Total EAWU =		2,846,426

WIRE SLEEVE LEGEND:

SLEEVE SIZE	MAXIMUM # WIRES	SLEEVE SIZE	MAXIMUM # WIRES
1"	6	1 1/2"	14
1 1/4"	10	2"	25

MORE THAN 25 WIRES - VERIFY WITH LANDSCAPE ARCHITECT

IRRIGATION SYMBOL LEGEND:

OVERHEAD SYSTEMS:
- A5 / P — DENOTES CONTROLLER (LETTER) AND VALVE (NUMBER) SEQUENCE
- 33 — DENOTES MAXIMUM GPM FLOW THROUGH VALVE
- DENOTES VALVE SIZE

DRIP SYSTEMS:
- A6 / P — DENOTES CONTROLLER (LETTER) AND VALVE (NUMBER) SEQUENCE
- 21.4 — DENOTES MAXIMUM GALLONS PER MINUTE (GPM) FLOW THROUGH VALVE
- 1281 — DENOTES MAXIMUM GALLONS PER HOUR (GPH) FLOW THROUGH VALVE
- DENOTES VALVE SIZE

RAINBIRD ET MANAGER INFORMATION SHEET:
ET MANAGER HOTLINE: (877) 351-6566
CONTACT: CORY ANDERSON (951) 767-5512
savewater@valleysoil.com

WEATHER STATION REGION 2
LOCATION: RIVERSIDE, CALIFORNIA
CITY: RIVERSIDE, CALIFORNIA
ELEVATION: 764 FEET

VALLEY SOIL SIGNAL PROVIDER CODE:
A: 64
B: 255
C: 84
D: 45
E: 11
F: 213
G: 102
H: 10
I: 1
J: 74

AVERAGE DAILY HISTORICAL ET:

JANUARY	0.07"
FEBRUARY	0.10"
MARCH	0.11"
APRIL	0.14"
MAY	0.14"
JUNE	0.16"
JULY	0.17"
AUGUST	0.16"
SEPTEMBER	0.14"
OCTOBER	0.11"
NOVEMBER	0.08"
DECEMBER	0.07"

IRRIGATION NOTES:

1. ALL WORK SHALL CONFORM TO APPLICABLE CODES.
2. T.C.L.A., INC. HAS PREPARED THESE PLANS FROM BASE INFORMATION PROVIDED BY GILLIS + PANICHAPAN ARCHITECTS, COSTA MESA, CALIFORNIA. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THESE PLANS FOR ALL PERTINENT INFORMATION RELATING TO SITE CONSTRUCTION.
3. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. NEVER INSTALL IRRIGATION OUTSIDE OF PROPERTY LINES OR LIMITS INDICATED ON PLAN. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR CONTRACTOR MAY BE REQUIRED TO MOVE THIS EQUIPMENT AT THE CONTRACTOR'S OWN COST.
4. DO NOT WILFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE EXISTED AT THE TIME OF THE IRRIGATION DESIGN PREPARATION. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE IMMEDIATELY. IN THE EVENT THIS NOTIFICATION IS NOT GIVEN, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY TO BRING THE SYSTEM TO A PROPER WORKING CONDITION TO THE OWNER'S SATISFACTION.
5. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL CONTROL WIRING, CONTROL WIRE SLEEVES, LATERAL AND MAINLINE PIPING, AND PIPE SLEEVING UNDER ALL PAVED AREAS PER PLAN, PRIOR TO PAVING. ALL SLEEVING SHALL BE PVC SCHEDULE 40 PIPE AND BE A MINIMUM TWICE THE ENCLOSED PIPE SIZE AND 1-1/2" MINIMUM DIAMETER.
6. 120 V.A.C. ELECTRICAL POWER SHALL BE PROVIDED TO THE CONTROLLER LOCATION BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL SOURCE TO THE CONTROLLER UNIT ONLY.
7. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE DRAWINGS AT THE POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCES BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF THE IRRIGATION SYSTEM CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ACQUIRE FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY TO BRING THE SYSTEM TO A PROPER WORKING CONDITION.
8. THE HYDRAULIC CALCULATIONS FOR THIS IRRIGATION SYSTEM HAVE BEEN ESTABLISHED USING THE MATERIALS AS SPECIFIED ON THIS PLAN. SUBSTITUTIONS MADE TO THE MATERIALS BY THE CONTRACTOR WITHOUT PREVIOUS ACCEPTANCE BY THE LANDSCAPE ARCHITECT SHALL PLACE ALL LIABILITY OF THE IRRIGATION SYSTEM ONTO THE IRRIGATION CONTRACTOR. NO SUBSTITUTIONS OF EQUIPMENT WILL BE ACCEPTABLE WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT. THE IRRIGATION CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE ALL SUBSTITUTED EQUIPMENT WITH SPECIFIED EQUIPMENT IF SO ORDERED BY THE OWNER.
9. INSTALL ALL MATERIALS AND EQUIPMENT AS SHOWN IN THE DETAILS. USE TEFLON TAPE ON ALL PVC MALE PIPE THREADS ON ALL SPRINKLER SWING JOINT AND VALVE ASSEMBLIES.
10. CONTRACTOR SHALL PROVIDE AND INSTALL IN-LINE SWING CHECK VALVES AND ADJUSTABLE IN-RISER CHECK VALVES IF CONDITIONS EXIST WHICH REQUIRE CHECK VALVES TO AVOID BACK DRAINAGE TO LOWER HEADS AND EMITTERS AT NO ADDITIONAL COST TO THE OWNER.
11. REFER TO SPECIFICATIONS FOR SUBMITTALS, INSPECTIONS AND OTHER APPLICABLE INFORMATION.
12. THE EMITTERS SELECTED REPRESENT THE BEST ESTIMATE FOR WATER FLOWS BASED ON THE PLANT TYPE, SIZE, WATER USE AND MICROCLIMATE. FIELD ADJUSTMENTS MAY BE REQUIRED DEPENDING ON PLANT PERFORMANCE. CONTRACTOR SHALL ADJUST VALVE TIMING, PROGRAM START TIMES AND EMITTER FLOWS AS REQUIRED FOR BEST GROWTH RESULTS.
13. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL CONVENTIONAL SPRAY HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
14. ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN TURF AREAS SHALL BE INSTALLED SO THE TOP OF THE SPRINKLER HEAD IS FLUSH WITH THE ADJACENT SIDEWALK, OR PAVING. ALL POP-UP HEADS AWAY FROM EDGES IN TURF SHALL BE FLUSH WITH THE TOP OF GRADE TO PREVENT CONTACT WITH MOWERS PER DETAILS.
15. WHERE SPRAY HEADS AND/OR ROTORS ARE INDICATED ON THE IRRIGATION PLANS, IT IS THE INTENT OF THE DESIGN TO INDICATE THE INSTALLATION OF POP-UP HEADS IN LANDSCAPED AREAS ADJACENT TO PEDESTRIAN AND VEHICULAR AREAS. IN THE EVENT THAT POP-UP HEADS HAVE NOT BEEN SPECIFIED IN THESE AREAS, IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO BRING THIS TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO CONSTRUCTION.
16. ALL CONVENTIONAL IRRIGATION HEADS SHALL BE SET PERPENDICULAR TO THE FINISH GRADE OF THE AREA TO BE IRRIGATED. LOCATE POP-UP HEADS 24" FROM BACK OF CURB IN CAR OVERHANG AREAS, EXCEPT IN TURF PLANTINGS.
17. FLUSH ALL LATERAL LINES WITH VALVE ASSEMBLIES INSTALLED, PRIOR OT NOZZLE AND/OR EMITTER INSTALLATION. INSTALL NOZZLES AND/OR EMITTERS AFTER FLUSHING.
18. ONE ADDITIONAL WIRE SHALL BE INSTALLED TO THE END OF EACH MAINLINE RUN FROM THE CONTROLLER LOCATION. THESE WIRES SHALL BE OF A DIFFERING COLOR THAN THE CONTROL AND COMMON WIRES FOR EASY IDENTIFICATION IN THE FIELD.

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SHEET TITLE: **LANDSCAPE IRRIGATION NOTES & LEGENDS**

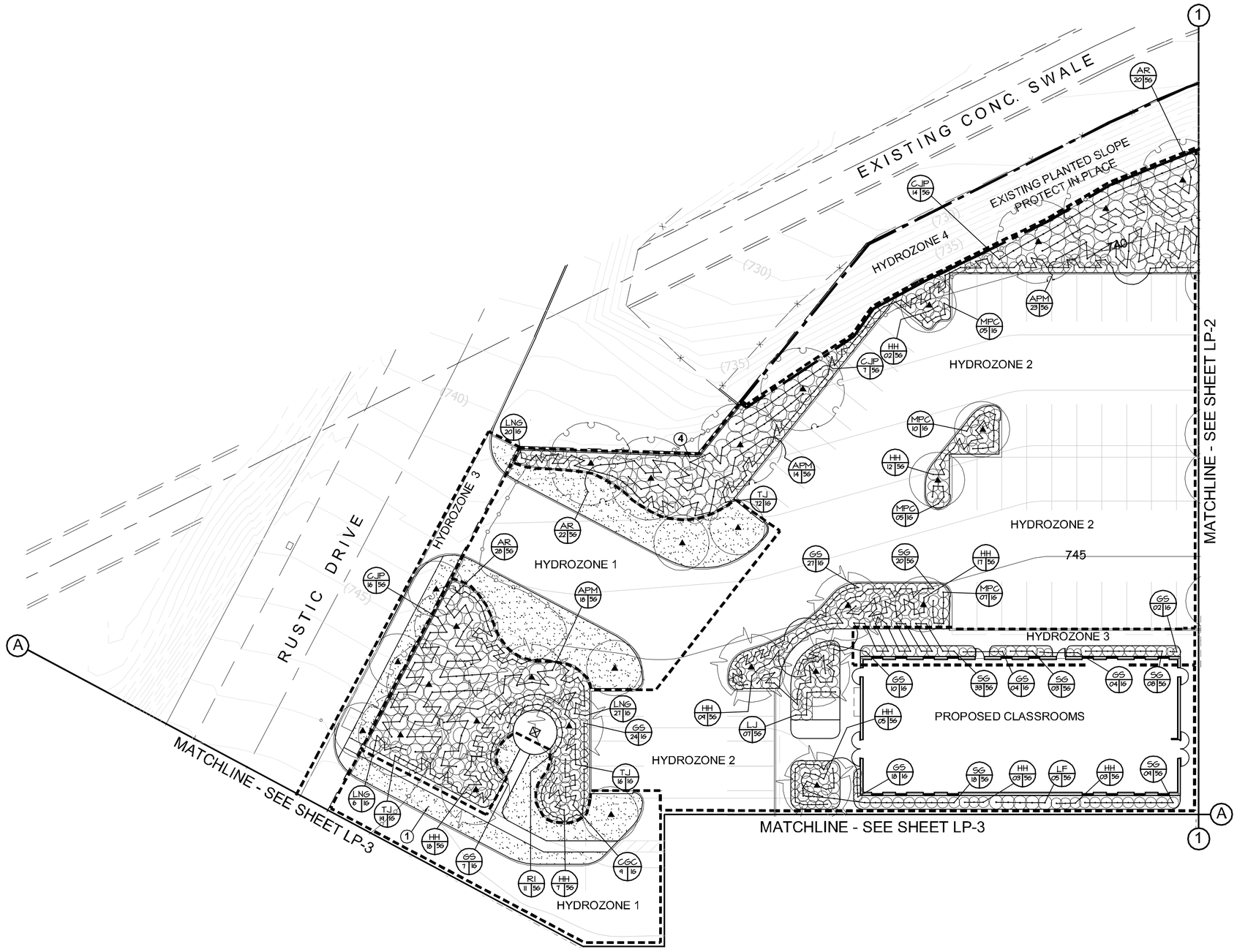
PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2348 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT M. ROBZETE No. 3603
Exp. 1-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	----
DRAWN:	JG

SHEET:
LIN-2
11 OF **20** SHEETS



SYMBOL	BOTANIC NAME	COMMON NAME
	CEDRUS DEODARA	DEODAR CEDAR
	CHITALPA TASHKENTENSIS 'PINK DAWN'	PINK DAWN CHITALPA
	FICUS RUBIGINOSA FICUS RUBIGINOSA	RUSTY-LEAF FIG RUSTY-LEAF FIG
	JACARANDA ACUTIFOLIA	JACARANDA
	KOELREUTERIA BIPINNATA STD.	CHINESE FLAME TREE
	LOPHOSTEMON CONFERTA	BRISBANE BOX
	MAGNOLIA GRANDIFLORA 'MAJESTIC BEAUTY' STD.	MAJESTIC BEAUTY SOUTHERN MAGNOLIA
	PYRUS KAWAKAMII	EVERGREEN PEAR

ABBRV.	BOTANICAL NAME
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OO / 00 | 56 — DENOTES PLANT MATERIAL, SEE LEGEND
DENOTES QUANTITY IN GROUPING, AND SIZE,
(IE. 5G=15 GALLON, 1G=1 GALLON)

DENOTES HYDROZONE AREA
SEE EAWU CALCULATION, SHEET LIN-2

NOTES AND LEGENDS:
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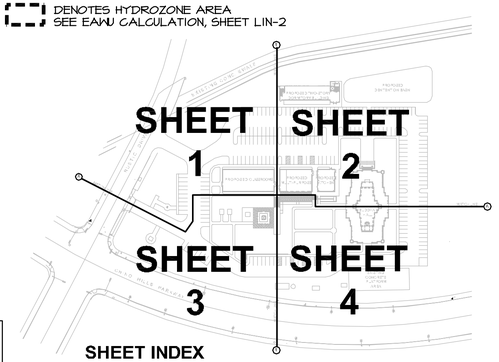

SHEET INDEX
NTS

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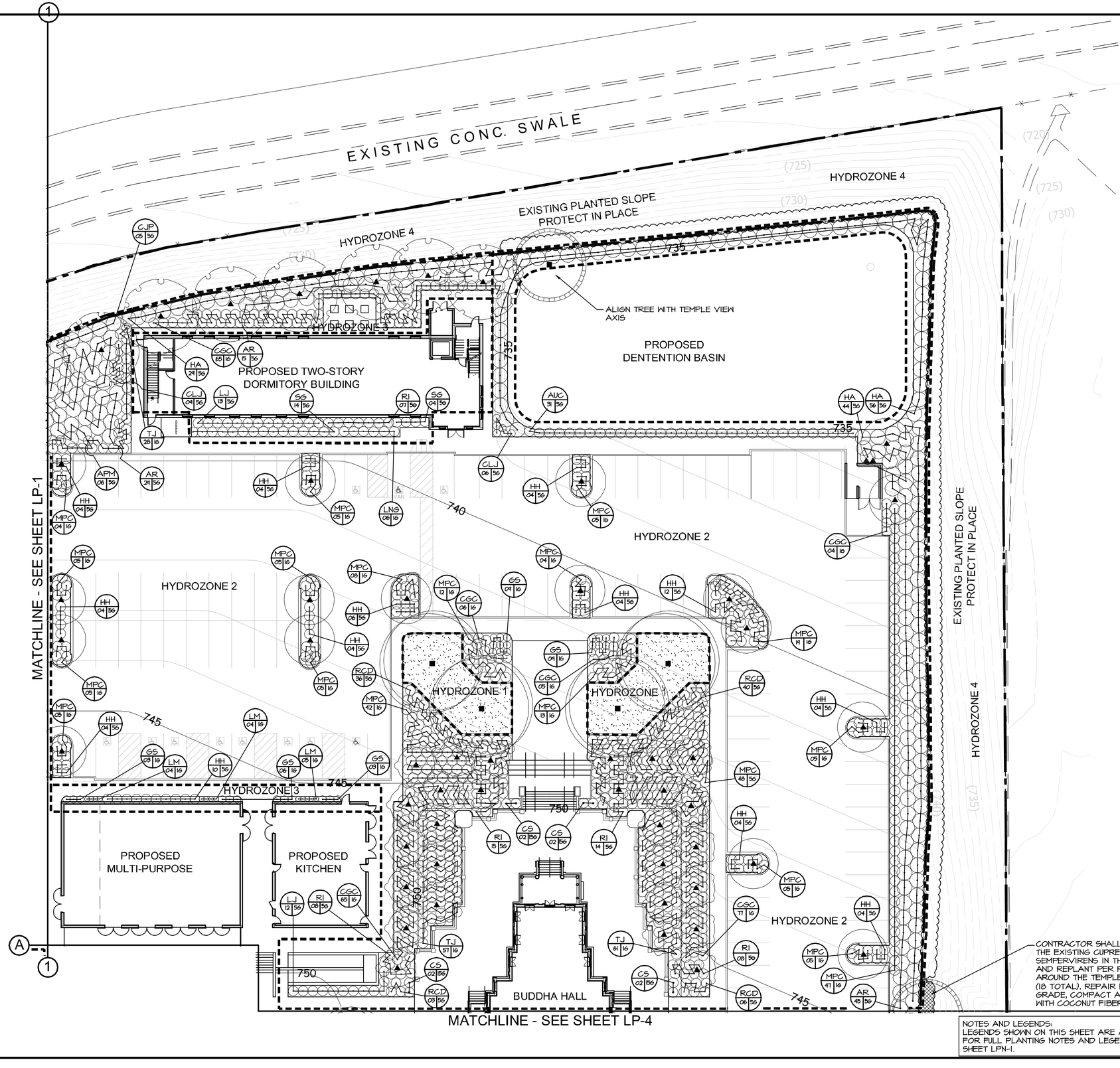
SHEET TITLE: LANDSCAPE PLANTING PLAN

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT M. ROBZEFF No. 2987
5-31-16
RENEWAL DATE
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LP-1
	12 OF 20 SHEETS



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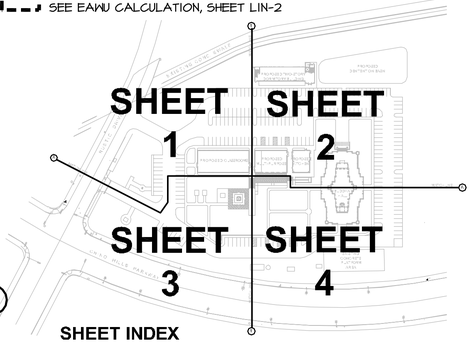

SHEET INDEX
NTS

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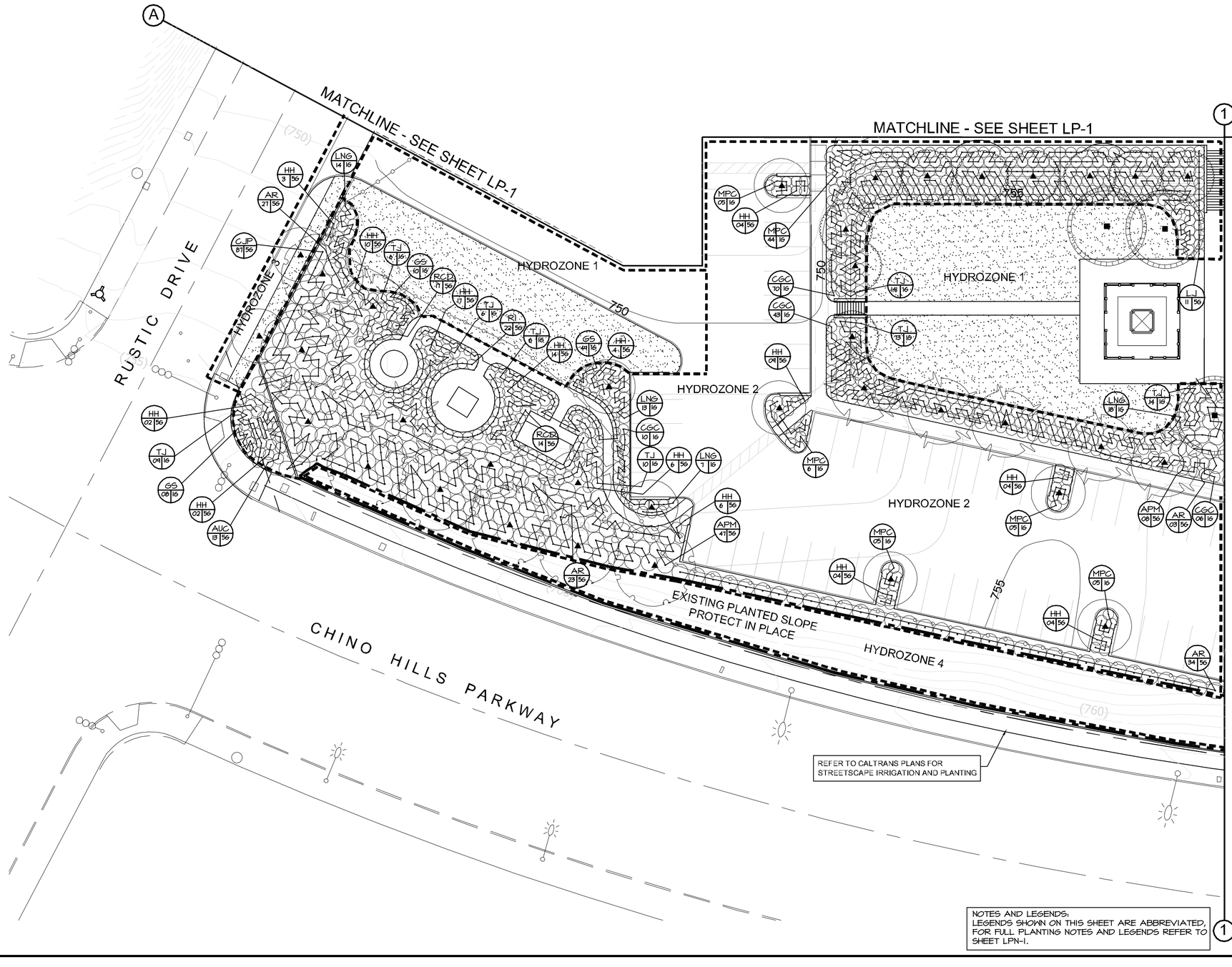
SHEET TITLE: LANDSCAPE PLANTING PLAN

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT H. ROBLEE No. 2964
EXP. 8-31-16
8-03-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LP-2
	13 OF 20 SHEETS



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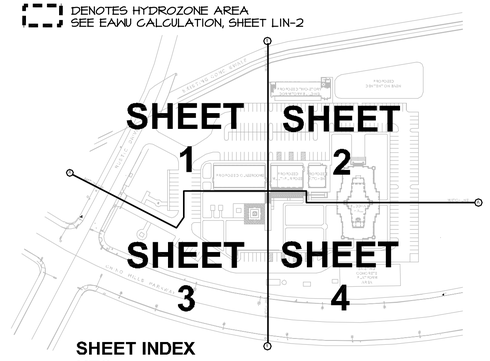

SHEET INDEX
NTS

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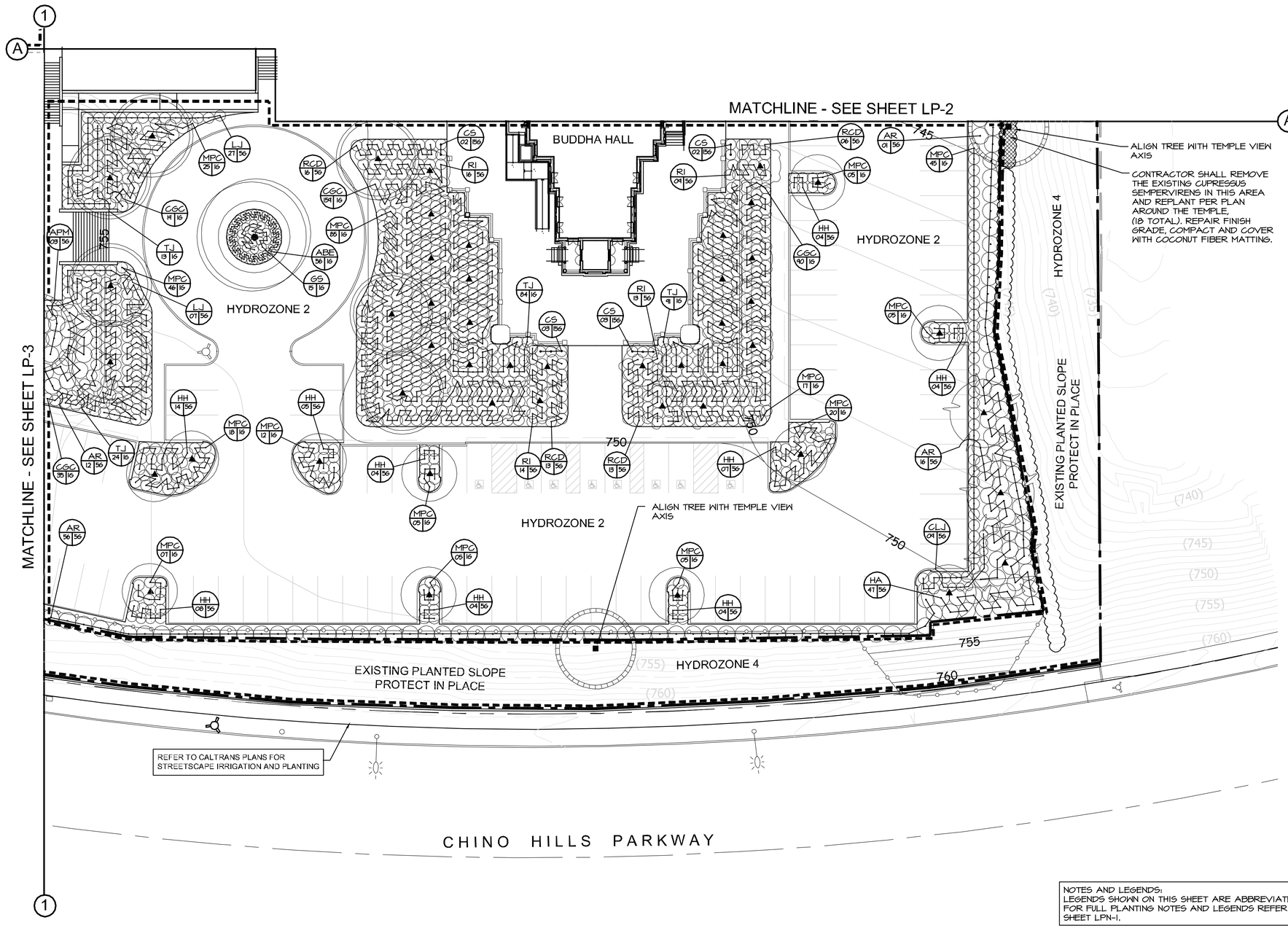
SHEET TITLE: LANDSCAPE PLANTING PLAN

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT H. WOODZELL No. 4904
6-31-16
RENEWAL DATE
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LP-3
	14 OF 20 SHEETS



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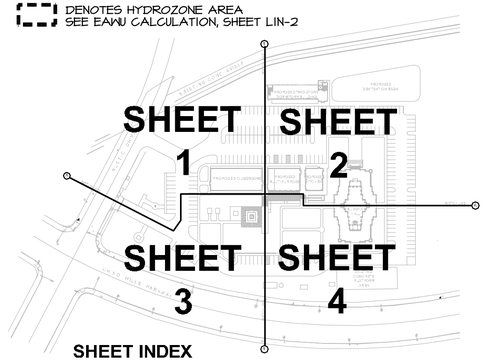

SHEET INDEX
NTS

NOTES AND LEGENDS:
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SHEET TITLE: LANDSCAPE PLANTING PLAN

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2348 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
JOSEPH A. VARONA
No. 2499
EXP. 8-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	1" = 20'
DRAWN:	JG
SHEET:	LP-4
	15 OF 20 SHEETS

TREE PROTECTION NOTES:

1. "PROTECTED ZONE" FOR EXISTING TREES: BEFORE BEGINNING ANY DEMOTION OR CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND ALL EXISTING TREES WITHIN THE CONSTRUCTION ZONE THAT ARE TO BE SAVED. THE FENCE SHALL BE INSTALLED NO CLOSER TO THE TREE THAN THE EDGE OF THE TREE'S PROTECTED ZONE, GENERALLY DEFINED AS THE AREA BEGINNING FIVE FEET OUTSIDE OF THE TREE'S DRIPLINE AND EXTENDING TOWARDS THE TREE (OR AS FAR AWAY FROM THE TRUNK AS PRACTICABLE). THE FENCING SHALL BE OF A MATERIAL AND HEIGHT ACCEPTABLE TO THE LANDSCAPE ARCHITECT. ALL CONTRACTORS AND THEIR CREWS SHALL NOT BE ALLOWED INSIDE THIS "PROTECTED ZONE" NOR SHALL THEY BE ALLOWED TO STORE OR DUMP FOREIGN MATERIALS WITHIN THIS AREA. NO WORK OF ANY KIND, INCLUDING TRENCHING, SHALL BE ALLOWED WITHIN THE PROTECTED ZONE EXCEPT AS DESCRIBED BELOW. THE FENCING SHALL REMAIN AROUND EACH TREE TO BE SAVED UNTIL THE COMPLETION OF CONSTRUCTION OPERATIONS.

2. TEMPORARY MULCH: TO ALLEVIATE SOIL COMPACTION IN ANTICIPATED AREAS OF HIGH CONSTRUCTION TRAFFIC, AND ONLY WHERE FENCING CANNOT BE SET FIVE FEET OUTSIDE OF THE DRIPLINE, THE CONTRACTOR SHALL INSTALL A LAYER OF MULCH, 9"-12" THICK, OVER ALL EXPOSED EARTH FROM THE TREE TRUNK TO 5' OUTSIDE OF THE DRIPLINE. THIS LAYER SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. WHEN PLANTING OPERATIONS ARE COMPLETED, THE MULCH SHALL BE REDISTRIBUTED THROUGHOUT ALL PLANTING AREAS IN A 3" THICK "PERMANENT" MULCH LAYER.

3. NECESSARY WORK: WHEN IT BECOMES NECESSARY TO ENTER THE "PROTECTED ZONE", SUCH AS FOR FINE GRADING, IRRIGATION INSTALLATION, AND PLANTING OPERATIONS, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE FOLLOWING RULES:

   A. EVERY EFFORT SHALL BE MADE TO PRESERVE THE EXISTING GRADE AROUND PROTECTED TREES IN AS WIDE AN AREA AS POSSIBLE.

   B. TRENCHING WITHIN THE PROTECTED ZONE OF EXISTING TREES SHALL BE PERFORMED BY HAND, AND WITH EXTREME CARE NOT TO SEVER ROOTS 1-1/2" IN DIAMETER AND LARGER. WHERE ROOTS 1-1/2" IN DIAMETER AND LARGER ARE ENCOUNTERED, THE CONTRACTOR SHALL TUNNEL UNDER SAID ROOTS. EXPOSED ROOTS THAT HAVE BEEN TUNNELED UNDER SHALL BE WRAPPED IN WET BURLAP AND KEPT MOIST WHILE THE TRENCH IS OPEN.

   C. WHERE ROOTS 1-1/2" IN DIAMETER OR LARGER MUST BE CUT DUE TO EXTENSIVE GRADE CHANGES, THOSE ROOTS MUST BE EXPOSED BY HAND DIGGING AND CUT CLEANLY. RAGGED CUTS GENERALLY DO NOT HEAL PROPERLY, AND MAY LEAVE THE TREE OPEN TO PESTS AND PATHOGENS.

   D. WHERE TRENCHING NEAR TREES HAS ALREADY OCCURRED FROM PREVIOUS CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO CONFINE HIS TRENCHING OPERATIONS TO THE PREVIOUSLY-CREATED TRENCHES, WHILE ADHERING TO THE CONDITIONS SET FORTH IN 3B.

4. POTENTIAL CONFLICTS: THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARBORIST SHOULD ANY POTENTIAL CONFLICTS ARISE BETWEEN THESE SPECIFICATIONS AND/OR LARGE ROOTS ENCOUNTERED IN THE FIELD, AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT TAKE ANY ACTION IN SUCH CONFLICTS WITHOUT THE ARBORIST'S WRITTEN APPROVAL. THE ARBORIST SHALL HAVE FINAL AUTHORITY OVER ALL METHODS NECESSARY TO HELP ENSURE THE PROTECTION AND SURVIVAL OF EXISTING TREES.

5. PRUNING: PRUNE ONLY THE TREES THAT ARE INDICATED ON THE PLANS AS REQUIRING PRUNING. PRUNE TREES ACCORDING TO INTERNATIONAL SOCIETY OF ARBORICULTURE / ANSI A300 STANDARDS:

   A. REMOVE ALL DEAD WOOD.

   B. PRUNE LIVE WOOD FOR HEALTH OR STRUCTURAL REASONS ONLY, INCLUDING THE NEED TO ELIMINATE DISEASED OR DAMAGED GROWTH, ELIMINATE STRUCTURALLY UNSOUND GROWTH, REDUCE THE POTENTIAL DISEASED OR DAMAGED GROWTH, ELIMINATE STRUCTURALLY UNSOUND GROWTH, REDUCE THE POTENTIAL FOR WIND TOPPLING OR WIND DAMAGE, OR TO MAINTAIN GROWTH WITHIN LIMITED SPACE. DO NOT REMOVE MORE THAN 25% OF ANY TREE'S LIVE FOLIAGE IN ANY ONE GROWING SEASON. PRUNE ONLY TO INTERNATIONAL SOCIETY OF ARBORICULTURE/ANSI A 300 STANDARDS, AND ONLY UNDER THE DIRECT SUPERVISION OF A CERTIFIED ARBORIST.

   C. FINAL CUTS SHALL BE MADE JUST OUTSIDE THE SHOULDER RING AREA. EXTREMELY FLUSHED CUTS WHICH PRODUCE LARGE WOUNDS AND WEAKEN THE TREE AT THE CUT SHALL NOT BE MADE.

   D. ALL TRIMMING CUTS SHALL BE PERFORMED IN SUCH A MANNER AS TO PROMOTE THE NATURAL GROWTH AND SHAPE OF EACH TREE SPECIES.

   E. IMPROPER PRUNING METHODS INCLUDING, BUT NOT LIMITED TO, "TOPPING", "TIPPING", "HEADING BACK", "DEHORNING", AND "LIONTAILING" WILL NOT BE ALLOWED. THE CONTRACTOR SHALL PAY FOR ALL WORK NECESSARY TO CORRECT SUCH PRUNING WHEN PERFORMED BY HIS CREWS OR SUBCONTRACTORS.

   F. SHOULD THE CONTRACTOR REQUIRE MORE INFORMATION, THE CONTRACTOR SHALL CONTACT THE ISA AT (217) 355-9411 FOR A COPY OF THE ANSI A300 PRUNING STANDARDS. CONTRACTOR SHALL ADHERE TO THE METHODS AND PRACTICES SET FORTH IN THIS DOCUMENT.

6. LANDSCAPE AND IRRIGATION (NATIVE OAKS ONLY): ANY FUTURE LANDSCAPE AND IRRIGATION SHOULD ADHERE TO THE FOLLOWING GUIDELINES:

   A. NO IRRIGATION OR PLANTING SHOULD OCCUR CLOSER THAN 8'-10' FROM THE TRUNK.

   B. WHERE IRRIGATION DOES OCCUR WITHIN THE PROTECTED ZONE, DRIP IRRIGATION SHOULD BE USED WHEREVER POSSIBLE. ADDITIONALLY, ONLY LOW-WATER USING PLANTS SHOULD BE PLANTED WITHIN THE PROTECTED ZONE, SPACED FAR APART CLOSE TO THE TREE. PLANTS MAY BE SPACED CLOSER TOGETHER NEAR THE EDGE OF THE PROTECTED ZONE.

ON-SITE AREA TAKEOFFS:

ON-SITE TURF AREA - 16,305 SF
MODERATE WATER USE PLANTINGS - 68,575 SF
OFF-SITE TURF AREA (ROW) - 970 SF
EXISTING SLOPE TO BE PROTECTED - 48,615 SF

TOTAL LANDSCAPE AREA - 134,465 SF.
25% MAXIMUM ALLOWABLE TURF AREA - 33,616 SF
TOTAL TURF PLANTINGS - 17,275 SF (13%)

PLANTING NOTES:

1. ALL WORK SHALL CONFORM TO APPLICABLE LOCAL CODES.
2. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHER WISE SPECIFIED.
3. ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO PLANTING.
4. ALL PLANT MATERIAL WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ANY PLANT DEEMED UNACCEPTABLE BY THE OWNER'S AUTHORIZED REPRESENTATIVE SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY MATERIAL APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE OWNER'S AUTHORIZED REPRESENTATIVE SHALL BE THE SOLE JUDGE AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
5. FINISH GRADES SHALL BE INSTALLED 1" BELOW HARDSCAPE, CURBS AND UTILITY BOXES IN TURF AREAS, AND 2" BELOW SAME IN SHRUB/GROUNDCOVER AREAS,
6. FINISH SURFACE SHALL BE A MINIMUM OF TWO (2) PERCENT AWAY FROM ALL BUILDINGS, AND MATCH CIVIL ENGINEERS FLOW LINES UNLESS OTHERWISE SHOWN.
7. ALL SHRUB PLANTING AREAS OTHER THAN SLOPES OVER 4:1 SHALL RECEIVE A SURFACE LAYER OF NITROGEN FORTIFIED SHREDDED TREE AND PLANT MATERIAL MULCH. THE MULCH SHALL CONSIST OF "FOREST FLOOR 0"-4"" MULCH AS MANUFACTURED BY AGUINAGA FERTILIZER COMPANY, IRVINE, CALIFORNIA, (949) 786-4558. PROVIDE DEPTH OF 2" MINIMUM OVER FINISH GRADE IN GENERAL PLANTING AREAS, AND 1" DEPTH WITHIN WATERING BERM AROUND PLANT BASE. NO BARE EARTH SHALL BE SHOWING THROUGH MULCH COVER. CURBS, WALKS OR OTHER PAVING SHALL BE INSTALLED 1" OVER THE TOP OF THE MULCH COVER. PROVIDE SAMPLES OF MULCH FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
8. ALL PLANTING AREAS ON SLOPES OVER 4:1 SHALL RECEIVE A COCONUT FIBER DOUBLE NET BLANKET COVER FROM ROLLS. FIBER SHALL BE AS MANUFACTURED BY NORTH AMERICAN GREEN #C125. INSTALL AND STAKE PER MANUFACTURER'S SPECIFICATIONS. INSTALL OVER IRRIGATION PIPES AND STAPLE AT 12" MAXIMUM FROM EITHER SIDE OF PIPE AT NORMAL INTERVALS DENOTED BY MANUFACTURER.
9. EXISTING PLANT MATERIAL. ANY PLANT MATERIAL DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH ONE OF THE SAME TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE, AS DETERMINED BY THE OWNER. REFER TO THE TREE PROTECTION NOTES ON THE PLANS (AS APPLICABLE).
10. THE CONTRACTOR SHALL BE AWARE OF EXISTING AND PROPOSED UTILITIES, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES AND OR ANY INJURY TO ANY PERSON.
11. THE CONTRACTOR SHALL INSTALL ROOT BARRIERS NEAR ALL TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS. ROOT BARRIERS SHALL BE "DEEP-ROOT" OR EQUIVALENT 24" DEEP PANELS. BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE, WALLS AND/OR FOUNDATIONS PER THE ROOT BARRIER DETAIL ON THESE PLANS. INSTALL PANELS PER MANUFACTURER'S RECOMMENDATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.
12. PLANT QUANTITIES SHOWN ON LEGENDS ARE FOR GENERAL INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN TAKEOFFS AND QUANTITIES.
13. THE CONTRACTOR SHALL MAINTAIN THE PROJECT IN A HEALTHY AND WEED-FREE CONDITION FOR A PERIOD OF NINETY (90) DAYS.
14. TRANSPLANTED CUPRESSUS SEMPERVIRENS, (ITALIAN CYPRESS) TREES SHALL BE BOXED AND MAINTAINED ON-SITE BY THE CONTRACTOR UNTIL SUCH TIME AS THE NEW LOCATION IS PREPARED AND TRANSPLANTING OF THE TREES CAN OCCUR. CONTRACTOR SHALL INCLUDE THESE TRANSPLANTED CYPRESS TREES ON HIS GUARANTEE.

SOILS TESTING:

1. DUE TO HEAVY SITE GRADING, AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY FOR THE FOLLOWING: SOIL FERTILITY, ORGANIC MATTER CONTENT, AGRICULTURAL SUITABILITY, AND SALT AND BORON CONTENT. EACH SAMPLE SUBMITTED SHALL CONTAIN APPROXIMATELY ONE QUART OF SOIL, BUT NO LESS. CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE):

   ANALYTICAL RESULTS FOR THE SOILS:
   - SOIL pH
   - NUTRIENTS
   - SALINITY
   - TEXTURE
   - WATER INFILTRATION RATE
   - GENERAL RECOMMENDATIONS

   PLANTING RECOMMENDATIONS:
   - BACKFILL MIXES FOR SHRUBS AND TREES
   - PRE-PLANT SOIL AMENDMENT FOR TURF AND SHRUBS

   FERTILIZER PROGRAM (NO FERTILIZER INJECTOR):
   - ESTABLISHMENT PHASE FOR TURF AND SHRUBS
   - ON-GOING MAINTENANCE PHASE FOR SAME.

2. FERTILIZER PROGRAM FOR PLANTING AREAS SERVED BY A FERTILIZER INJECTOR SHALL INCLUDE THE FOLLOWING. AFTER THE CONTRACTOR HAS RECEIVED THE SOIL LABORATORY'S SOILS REPORT, HE SHALL SEND THE REPORT ALONG WITH THE PLANTING LIST FOR ALL PLANTS USED ON THE PROJECT TO MR. TODD BURNS OF "LIVE EARTH PRODUCTS", (661) 978-7307 FOR FERTILIZER INJECTOR FERTILIZER RECOMMENDATION. INSTALL FERTILIZERS PER THEIR RECOMMENDATIONS AND RATES.

REFER TO SPECIFICATIONS FOR OTHER INFORMATION.

TREE LEGEND WUCOLS REGION 4 - SOUTH INLAND VALLEY, SUNSET ZONE 18

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	QTY	REMARKS	WUCOLS
	CEDRUS DEODARA	DEODAR CEDAR	24" BOX	25	8-11' HIGH X 4-5' WIDE	M
	CHITALPA TASHKENTENSIS 'PINK DAWN'	PINK DAWN CHITALPA	24" BOX	20	9-10' HIGH X 3-4' WIDE	L
	FICUS RUBIGINOSA FICUS RUBIGINOSA	RUSTY-LEAF FIG RUSTY-LEAF FIG	36" BOX 48" BOX	4 1	12-14' HIGH X 6-7' WIDE 14-16' HIGH X 7-8' WIDE	M M
	JACARANDA ACUTIFOLIA	JACARANDA	36" BOX	6	12-14' HIGH X 6-7' WIDE	M
	KOELREUTERIA BIPINNATA STD.	CHINESE FLAME TREE	24" BOX	7	9-10' HIGH X 3-4' WIDE	M
	LOPHOSTEMON CONFERTA	BRISBANE BOX	24" BOX	48	10-12' HIGH X 4-5' WIDE	M
	MAGNOLIA GRANDIFLORA 'MAJESTIC BEAUTY' STD.	MAJESTIC BEAUTY SOUTHERN MAGNOLIA	24" BOX	10	9-11' HIGH X 4-5' WIDE	M
	PYRUS KAWAKAMII	EVERGREEN PEAR	24" BOX	53	9-11' HIGH X 3-4' WIDE	M

NOTE: QUANTITIES SHOWN ARE FOR GENERAL INFORMATION ONLY. CONTRACTOR RESPONSIBLE FOR HIS OWN BID QUANTITES.

TREE CONTAINER SIZE LEGEND

SYMBOL	DESCRIPTION - REMARKS
▲	24"-BOX (DOUBLE STAKE PER DETAIL)
■	36"-BOX (GUY PER DETAIL)
⬟	48"-BOX (GUY PER DETAIL)

NOTE: GUY ALL TREES IN 36" AND LARGER BOXES. WHERE SPACE DOES NOT PERMIT GUYING, TRIPLE STAKE PER DETAIL.

SHRUB AND GROUNDCOVER LEGEND

ABBRV.	BOTANICAL NAME	COMMON NAME	SIZE	QTY	WUCOLS
ABE	ALOE 'BLUE ELF'	BLUE ELF ALOE	1 GALLON	56	L
AR	ACACIA REDOLENS 'LOWBOY'	LOWBOY PROSTRATE ACACIA	5 GALLON	332	L
AUC	ARBUTUS UNEDO 'COMPACTA'	DWARF STRAWBERRY BUSH	5 GALLON	44	L
APM	ARCTOSTAPHYLOS 'PACIFIC MIST'	PROSTRATE PACIFIC MIST MANZANITA	5 GALLON	119	L
CJP	CEANOTHUS 'JULIA PHELPS'	JULIA PHELPS CALIFORNIA LILAC	5 GALLON	129	L
CGC	CARISSA MACROCARPA 'GREEN CARPET'	PROSTRATE NATAL PLUM	1 GALLON	663	M
CLJ	CALLISTEMON 'LITTLE JOHN'	DWARF CALLISTEMON	5 GALLON	24	M
CS	CUPRESSUS SEMPERVIRENS	ITALIAN CYPRESS (SEE TRANSPLANT NOTES)	15 GALLON	18	L
GS	GERANIUM SANGUINEUM	BLOODY CRANESBILL	1 GALLON	208	M
HA	HETEROMELES ARBUTIFOLIA	TOYON	5 GALLON	176	L
HH*	HEMEROCALLIS X 'MONOW' STARBURST®	DWARF YELLOW DAYLILY	5 GALLON	287	M
LF	LEUCOPHYLLUM FRUTESCENS 'LYNNS LEGACY'	TEXAS RANGER	5 GALLON	5	L
LJ	LIGUSTRUM JAPONICUM 'TEXANUM'	PRIVET	5 GALLON	74	M
LM	LIRIOPE MUSCARI 'BIG BLUE'	LILY TURF	1 GALLON	13	M
LNG	LANTANA 'NEW GOLD'	NEW GOLD LANTANA	1 GALLON	112	L
MPC	MYOPORUM PARVIFOLIUM 'PUTAH CREEK'	PROSTRATE MYOPORUM	1 GALLON	645	L
RCD	ROSA 'CHINA DOLL'	PINK GROUNDCOVER ROSE	5 GALLON	164	M
RI	ROSA 'ICEBERG'	WHITE SHRUB ROSE	5 GALLON	137	M
SG	SALVIA GREGGII	AUTUMN SAGE	5 GALLON	109	L
TJ	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	1 GALLON	728	M
▲▲	PARTHENOCISSUS TRICUSPIDATA	BOSTON IVY	5 GALLON	1	M
	SUPERIOR SOD, "SUPERIOR PLUS" SOD, LOW WATER DEMAND RHIZONIMOUS FESCUE	ON-SITE SODDED TURF	FROM ROLLS	16,305 SQ. FT.	H

* AVAILABLE AT MONROVIA NURSERY, (800) 999-9211

PLANTING LEGEND:

00 / 00|56 — DENOTES PLANT MATERIAL, SEE LEGEND
DENOTES QUANTITY IN GROUPING, AND SIZE, (IE. 5G=15 GALLON, 1G=1 GALLON)

DENOTES HYDROZONE AREA
SEE EAWU CALCULATION, SHEET LIN-2

MAINTENANCE SCHEDULE:

1. LANDSCAPES SHALL BE MAINTAINED TO ENSURE WATER USE EFFICIENCY. A REGULAR MAINTENANCE SCHEDULE SHALL BE SUBMITTED WITH THE CERTIFICATE OF COMPLETION.
2. A REGULAR MAINTENANCE SCHEDULE SHALL INCLUDE, BUT NOT BE LIMITED TO, ROUTINE INSPECTION; ADJUSTMENT AND REPAIR OF THE IRRIGATION SYSTEM AND ITS COMPONENTS; AERATING AND DETHATCHING TURF AREAS; REPLENISHING MULCH; FERTILIZING; PRUNING; WEEDING IN ALL LANDSCAPE AREAS, AND REMOVING ANY OBSTRUCTION TO EMISSION DEVICES. OPERATION OF THE IRRIGATION SYSTEM OUTSIDE THE NORMAL WATERING WINDOW IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
3. REPAIR OF ALL IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY INSTALLED COMPONENTS OR THEIR EQUIVALENTS.
4. A PROJECT APPLICANT IS ENCOURAGED TO IMPLEMENT SUSTAINABLE OR ENVIRONMENTALLY-FRIENDLY PRACTICES FOR OVERALL LANDSCAPE MAINTENANCE.

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SHEET TITLE: LANDSCAPE PLANTING NOTES & LEGENDS

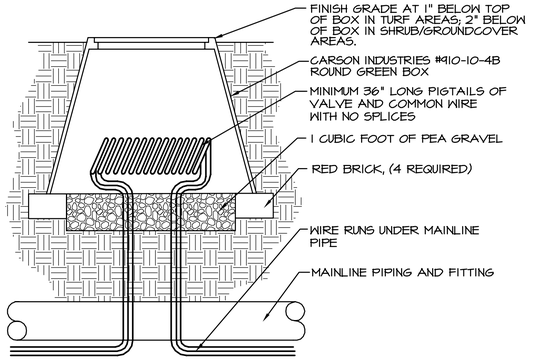
PROJECT: WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT: WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

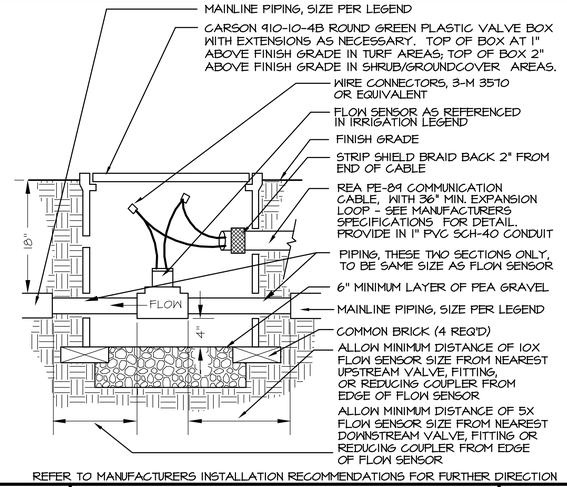
LICENSED LANDSCAPE ARCHITECT
HERBERT H. KOELZER, ASLA
6-31-16
Renewal Date
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	03-28-2014
SCALE:	----
DRAWN:	JG
SHEET:	LPN-1

16 OF 20 SHEETS

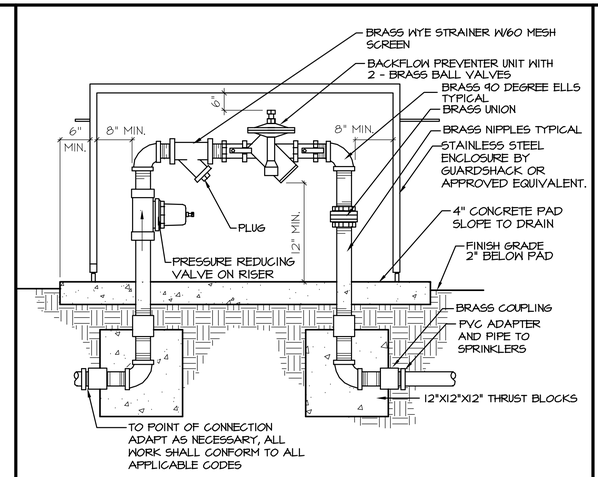


10 PULLBOX DETAIL — SCALE: NTS

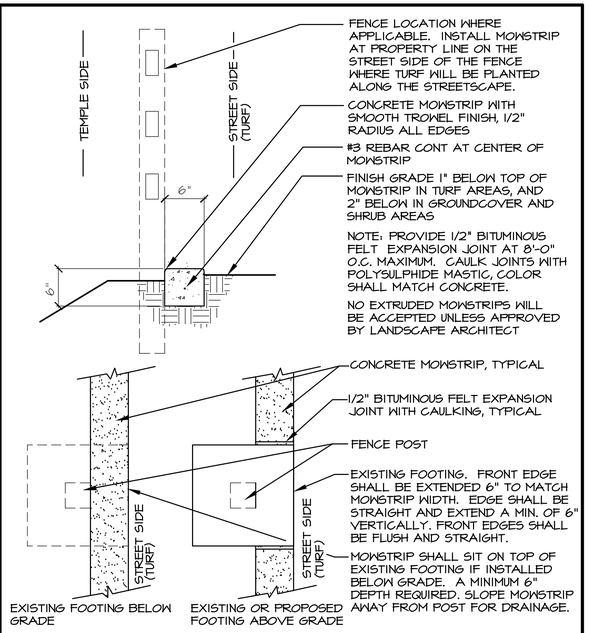


REFER TO MANUFACTURERS INSTALLATION RECOMMENDATIONS FOR FURTHER DIRECTION

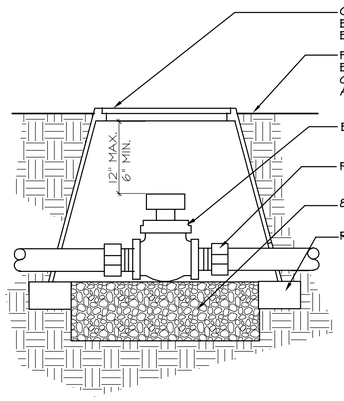
7 FLOW SENSOR DETAIL — SCALE: NTS



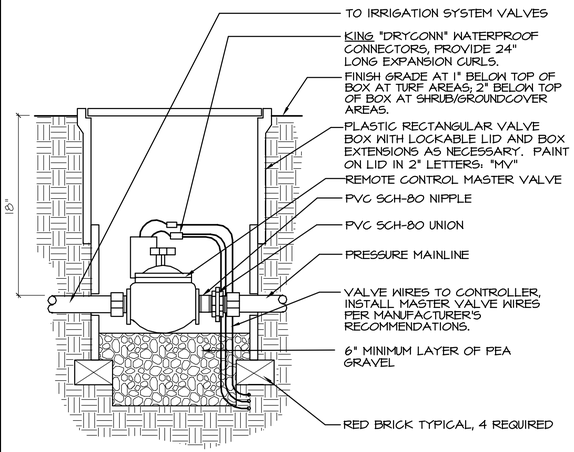
4 RP BACKFLOW PREVENTER — SCALE: NTS



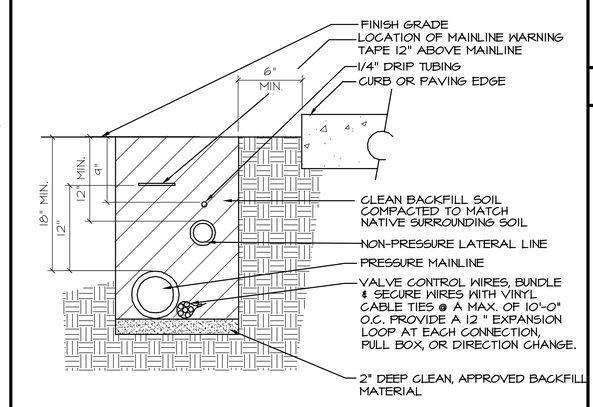
1 CONCRETE MOWSTRIP — SCALE: 1"=1'-0"



11 BALL VALVE DETAIL — SCALE: NTS

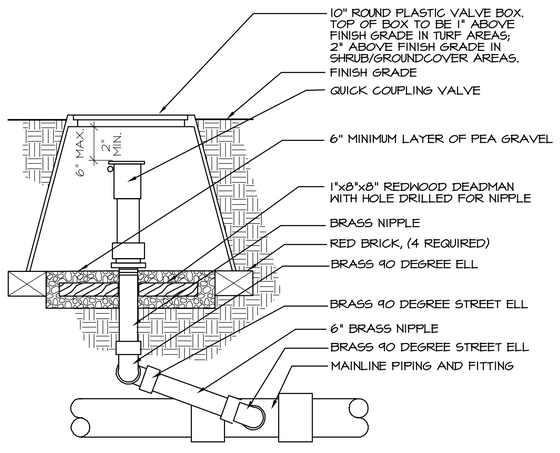


8 MASTER VALVE DETAIL — SCALE: NTS

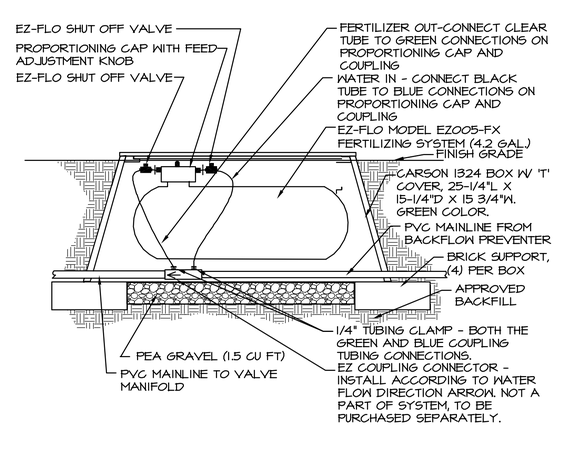


5 TRENCHING DETAIL — SCALE: NTS

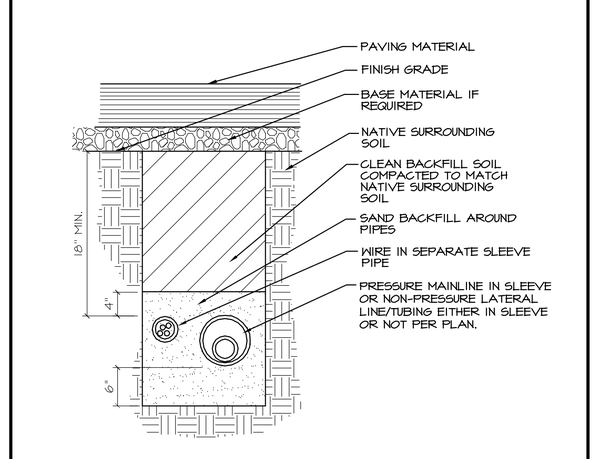
2 TURFBLOCK PLANTING — SCALE: NTS



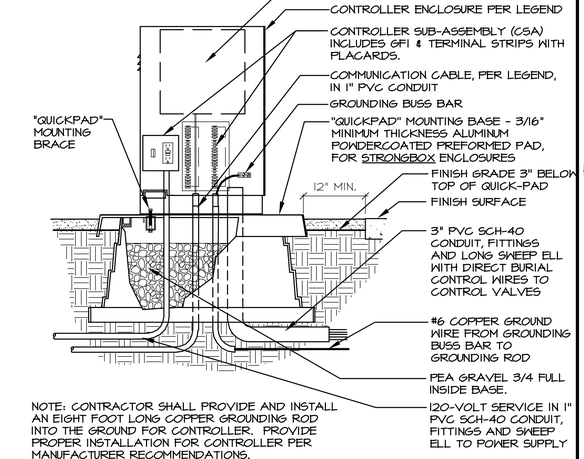
12 QUICK COUPLING VALVE — SCALE: NTS



9 FERTILIZER INJECTOR DETAIL — SCALE: NTS



6 SLEEVING DETAIL — SCALE: NTS



3 IRRIGATION CONTROLLER DETAL — SCALE: NTS

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SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS

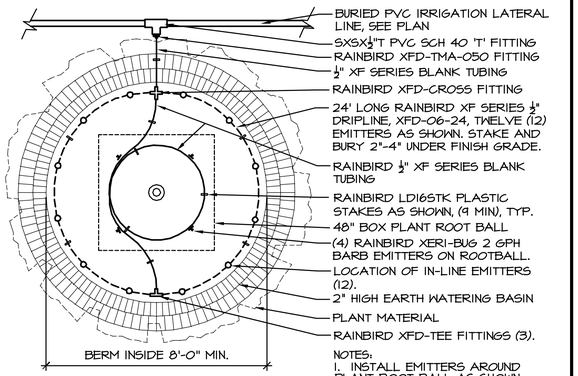
PROJECT: WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT: WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

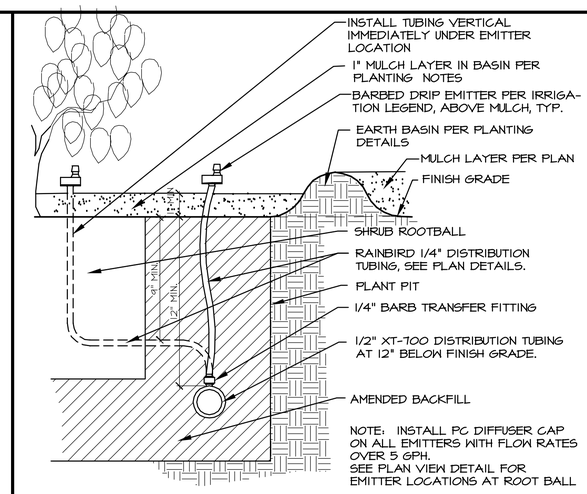
LICENSED LANDSCAPE ARCHITECT — ROBERT M. KORVER — No. 3744 — 8-31-16 — STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	AS SHOWN
DRAWN:	JG

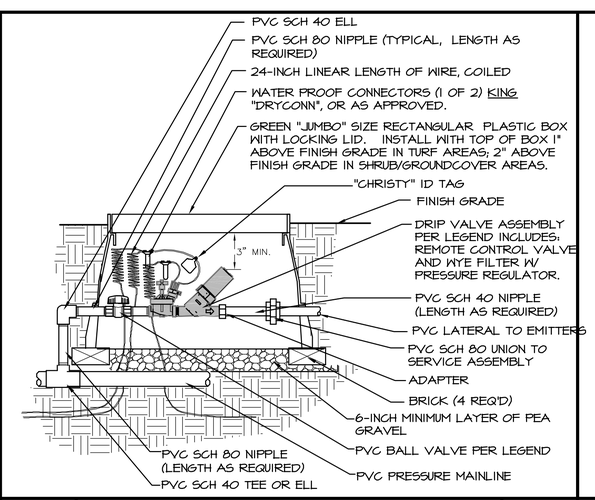
SHEET: **LCD-1**
17 OF 20 SHEETS



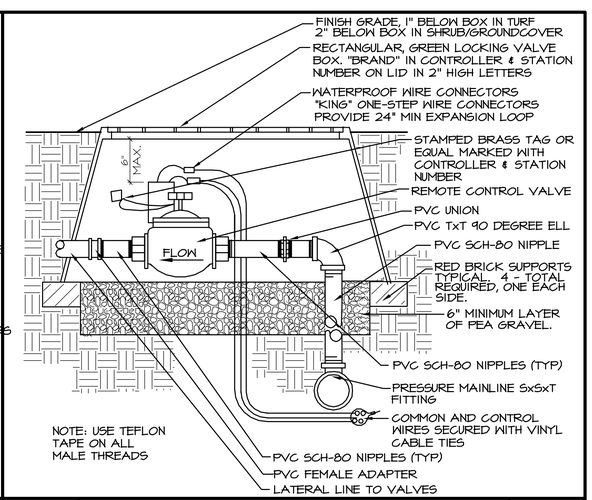
10 | 48" BOX IRRIGATION PLAN DETAIL | SCALE: NTS



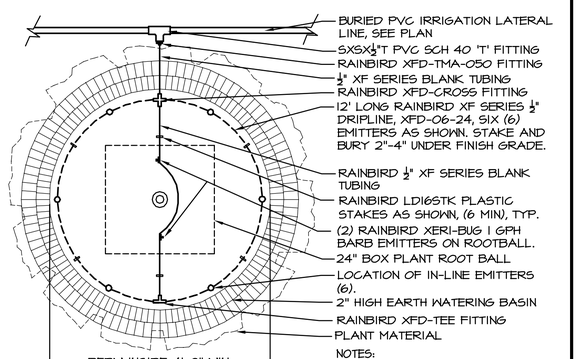
7 | DRIP EMITTER DETAIL | SCALE: NTS



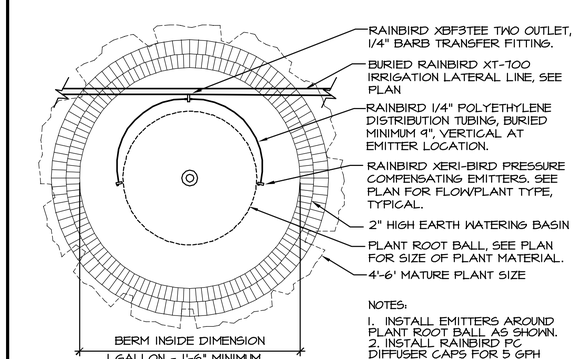
4 | 3/4" DRIP REMOTE CONTROL VALVE | SCALE: NTS



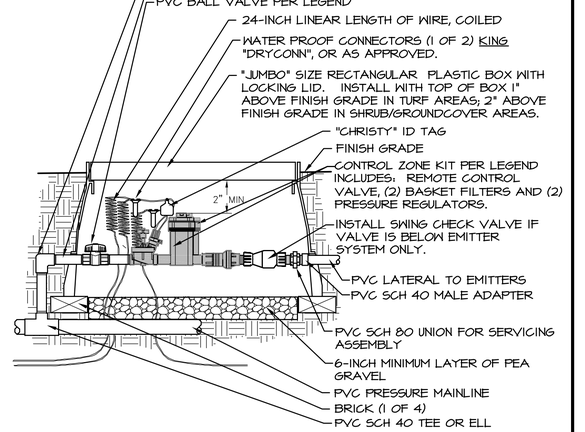
1 | REMOTE CONTROL VALVE | SCALE: NTS



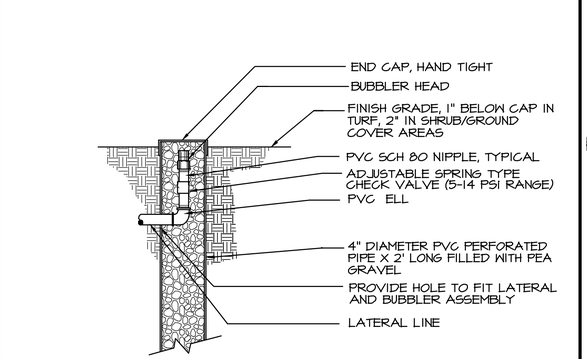
11 | 36" BOX IRRIGATION PLAN DETAIL | SCALE: NTS



8 | SINGLE EMITTER SHRUB DETAIL | SCALE: NTS



5 | 1" DRIP REMOTE CONTROL VALVE DETAIL | SCALE: NTS



2 | POP-UP SPRAY HEAD | SCALE: NTS

12 | 24" BOX IRRIGATION PLAN DETAIL | SCALE: NTS

9 | TWO EMITTER SHRUB DETAIL | SCALE: NTS

6 | 1-1/2" DRIP REMOTE CONTROL VALVE DTL. | SCALE: NTS

3 | TREE BUBBLER IN PERFORATED PIPE | SCALE: NTS

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ORANGE COUNTY OFFICE:
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(PH) 949-250-1515 (FX) 949-250-1891

SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS

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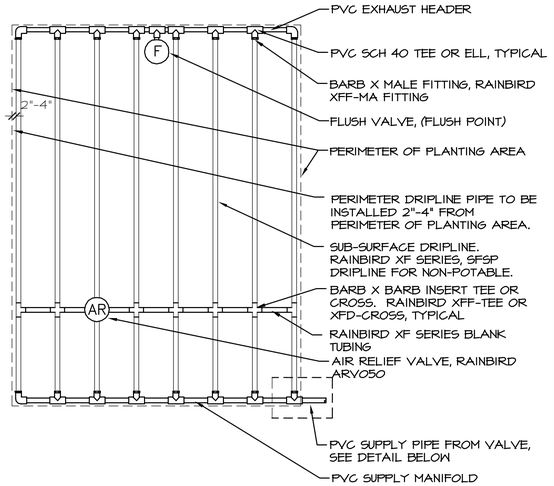
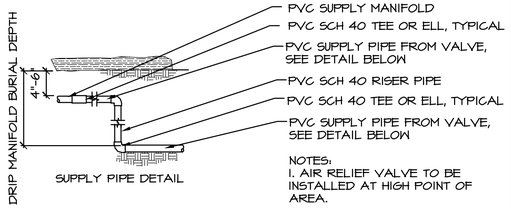
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
JEFFREY H. ROEZEE No. 5116
6-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	AS SHOWN
DRAWN:	JG
SHEET:	LCD-2
	18 OF 20 SHEETS





SUPPLY PIPE DETAIL

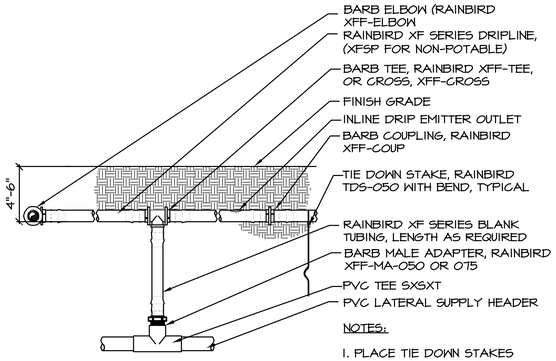
NOTES:
1. AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.

2. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50 PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

XFS Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Nominal Flow (gph)		Nominal Flow (gph)		Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

9 XFS SUB-SURFACE END FEED DIAGRAM SCALE: NTS



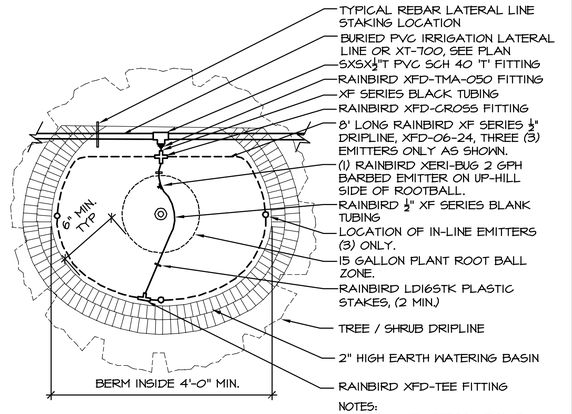
NOTE:
THIS DETAIL IS FOR USE ONLY WITH DIRECT CONNECTION TO THE DRIPLINE AS IN THE XFS SUB-SURFACE DRIPLINE CENTER FEED LAYOUT DETAIL.

NOTES:

1. PLACE TIE DOWN STAKES EVERY 3' O.C. IN SAND, 4' O.C. IN LOAM, AND 5' O.C. IN CLAY.

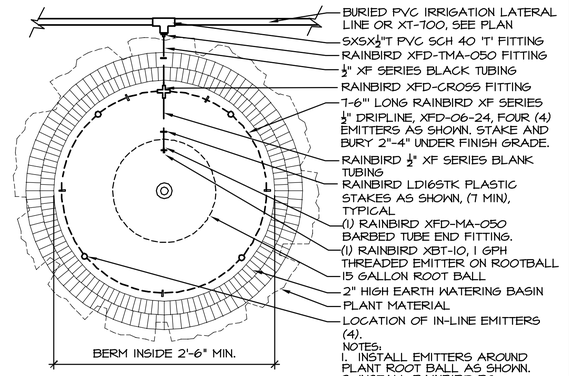
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.

7 XFS SUB-SURFACE DRIPLINE RISER ASSBLY. SCALE: NTS



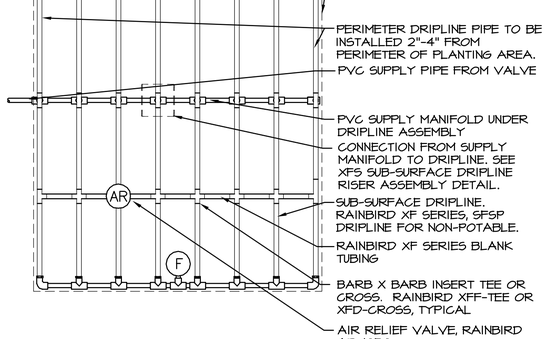
NOTES:
1. INSTALL EMITTERS AROUND PLANT ROOT BALL AS SHOWN.

4 15 GAL TREE/LARGE 5 GAL SHRUB-SLOPE SCALE: NTS



NOTES:
1. INSTALL EMITTERS AROUND PLANT ROOT BALL AS SHOWN.
2. INSTALL RAINBIRD PC DIFFUSER CAPS FOR 5 GPH EMITTERS AND LARGER.

1 15 GALLON TREE/LARGE 5 GALLON SHRUB SCALE: NTS



NOTES:
1. AIR RELIEF VALVE TO BE INSTALLED AT HIGH POINT OF AREA.

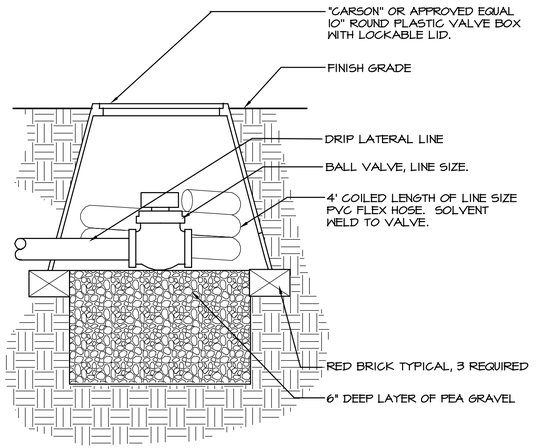
2. WHEN USING 17MM INSERT FITTINGS WITH DESIGN PRESSURE OVER 50 PSI, IT IS RECOMMENDED THAT STAINLESS STEEL CLAMPS BE INSTALLED ON EACH FITTING.

3. THIS DETAIL IS FOR CONNECTION FROM SUPPLY LINE TO DRIPLINE DIRECT. SEE XFS-SUB-SURFACE DRIPLINE RISER ASSEMBLY DETAIL.

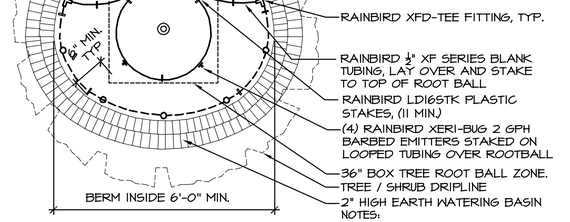
XFS Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Nominal Flow (gph)		Nominal Flow (gph)		Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

8 XFS SUB-SURFACE CENTER FEED DIAGRAM SCALE: NTS

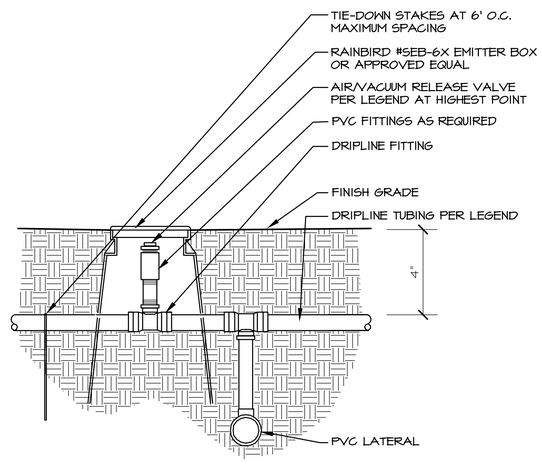


5 DRIP FLUSH VALVE SCALE: NTS

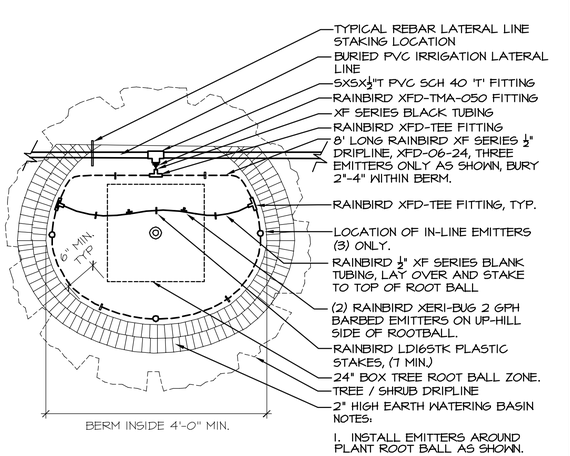


NOTES:
1. INSTALL EMITTERS AROUND PLANT ROOT BALL AS SHOWN.

2 36" BOX TREE DETAIL PLAN-SLOPE SCALE: NTS



6 AIR RELIEF VALVE IN BOX SCALE: NTS



NOTES:
1. INSTALL EMITTERS AROUND PLANT ROOT BALL AS SHOWN.

3 24" BOX TREE DETAIL - SLOPE SCALE: NTS

REVISIONS	BY

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ORANGE COUNTY OFFICE:
2211 MICHELSON DRIVE, SUITE 112 IRVINE, CALIFORNIA 92614
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SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS

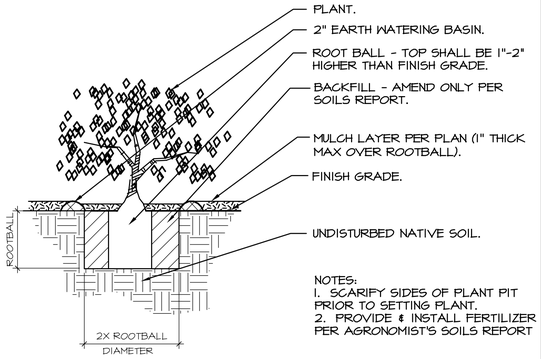
PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2348 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

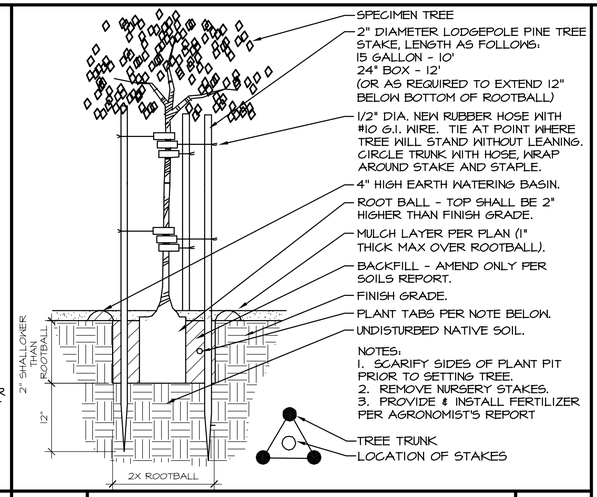
LICENSED LANDSCAPE ARCHITECT
ROBERT M. ROBZETE NO. 3407
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	----
DRAWN:	JG

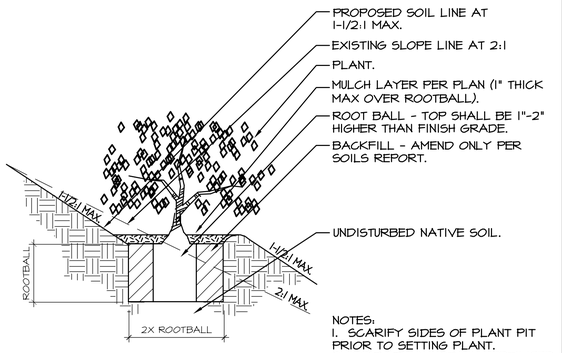
SHEET:
LCD-3
19 OF 20 SHEETS



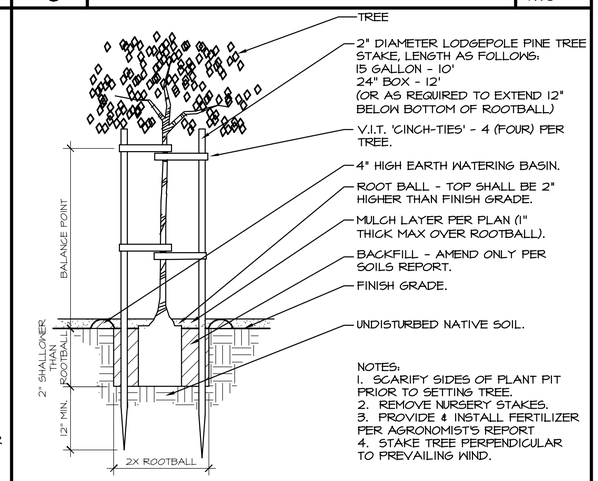
8 | SHRUB PLANTING DETAIL - FLAT | SCALE: NTS



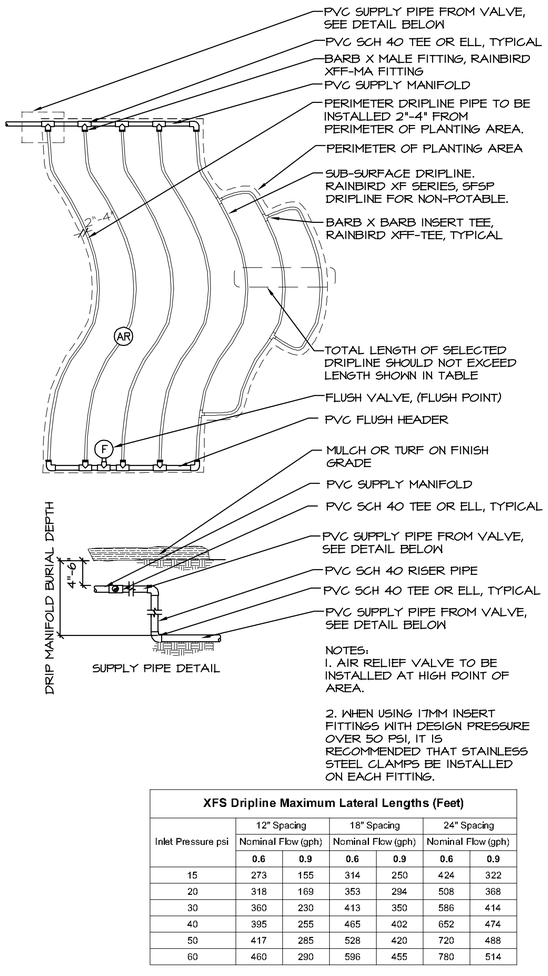
5 | TRIPLE STAKE DETAIL, 36" & 48" BOX | SCALE: NTS



9 | SHRUB PLANTING DETAIL - SLOPE | SCALE: NTS



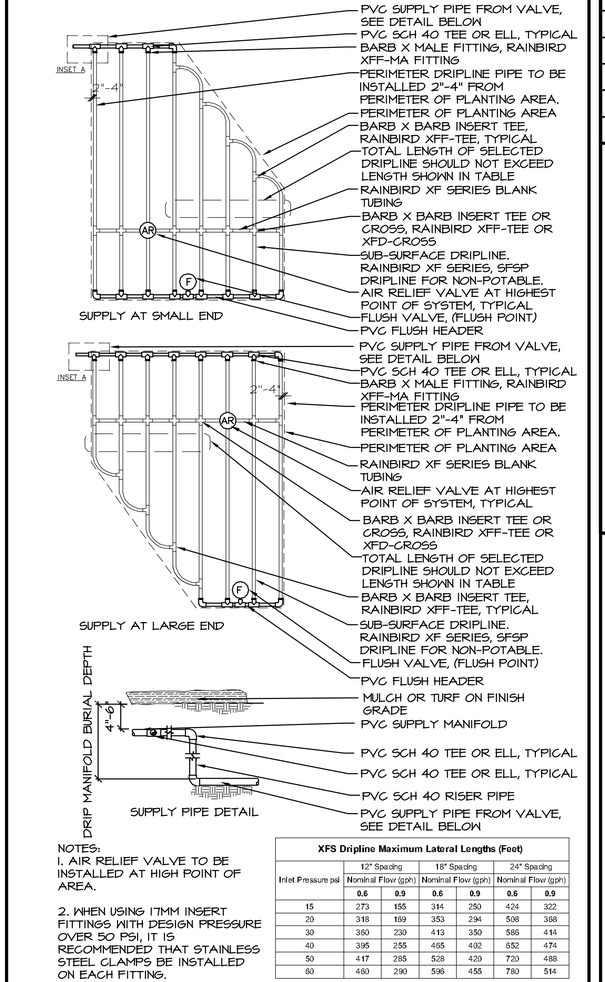
6 | TREE PLANTING DETAIL - FLAT | SCALE: NTS



XFS Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Nominal Flow (gph)		Nominal Flow (gph)		Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	368
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

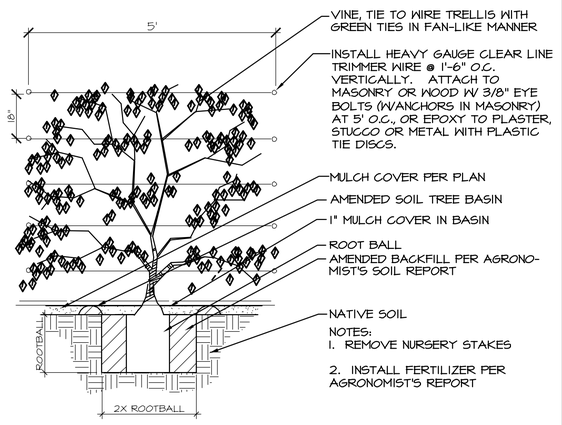
3 | SUB-SURFACE DRIPLINE ODD CURVES | SCALE: NTS



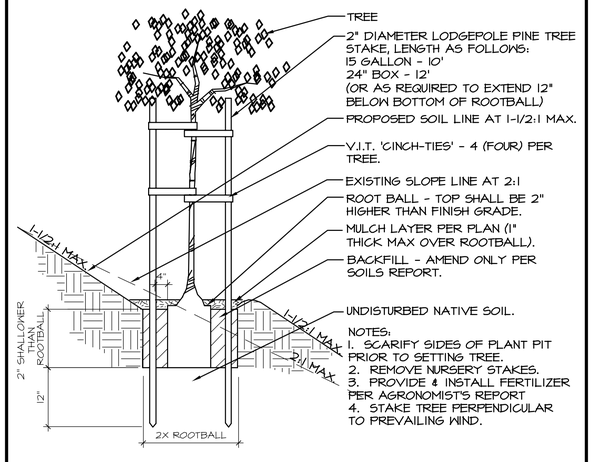
XFS Dripline Maximum Lateral Lengths (Feet)

Inlet Pressure psi	12" Spacing		18" Spacing		24" Spacing	
	Nominal Flow (gph)		Nominal Flow (gph)		Nominal Flow (gph)	
	0.6	0.9	0.6	0.9	0.6	0.9
15	273	155	314	250	424	322
20	318	169	353	294	508	388
30	360	230	413	350	586	414
40	395	255	465	402	652	474
50	417	285	528	420	720	488
60	460	290	596	455	780	514

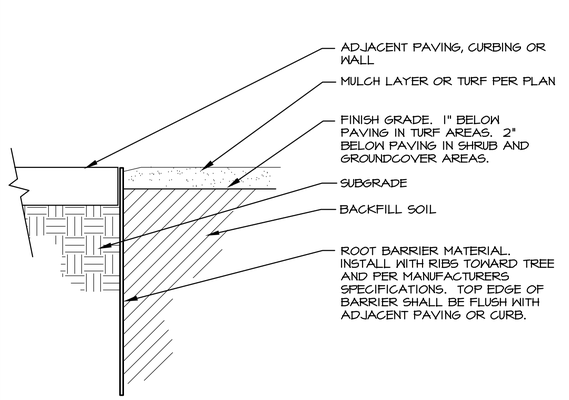
1 | SUB-SURFACE DRIPLINE IRREGULAR | SCALE: NTS



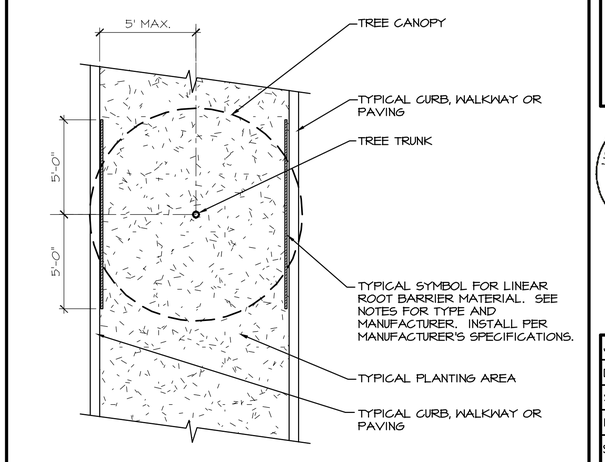
10 | VINE PLANTING DETAIL - FLAT | SCALE: NTS



7 | TREE PLANTING DETAIL - SLOPE | SCALE: NTS



4 | ROOT BARRIER DETAIL | SCALE: NTS



2 | ROOT BARRIER - PLAN VIEW | SCALE: NTS

REVISIONS	BY

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SHEET TITLE: LANDSCAPE CONSTRUCTION DETAILS

PROJECT:
WAT PHRA THAT DOI SUTHEP USA
CHINO HILLS, CALIFORNIA, 91709

CLIENT:
WAT PHRA THAT DOI SUTHEP USA
2948 CHINO HILLS PARKWAY
CHINO HILLS, CALIFORNIA, 91709

LICENSED LANDSCAPE ARCHITECT
ROBERT H. ROBZEFF No. 5004
3-31-16
STATE OF CALIFORNIA

JOB NO.	12017
DATE:	02-18-2014
SCALE:	----
DRAWN:	JG
SHEET:	LCD-4
	20 OF 20 SHEETS

CITY OF CHINO HILLS

STREET IMPROVEMENT PLANS

FOR TENTATIVE PARCEL MAP NO. 19377

CHINO HILLS PARKWAY (STATE ROUTE 142)
AND
RUSTIC DRIVE

PRELIMINARY - FOR PLAN CHECK ONLY

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THIS PLAN AND THE CURRENT STANDARD SPECIFICATIONS OF THE CITY OF CHINO HILLS ENGINEERING DEPARTMENT.
2. STANDARDS AND SPECIFICATIONS FOR TRANSPORTATION FACILITIES AND ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATION MANUAL UNLESS SPECIFICALLY MODIFIED HEREIN, AUGMENTED BY THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION.
3. STANDARD SPECIFICATIONS COVER THE USUAL CONSTRUCTION REQUIREMENTS FOR WORK SPECIFIED ON A CITY PERMIT; HOWEVER, IN THE EVENT IT IS DETERMINED THAT THE SPECIFIC WORK TO BE DONE IS OF SUCH A NATURE THAT THE METHOD OF CONSTRUCTION, TYPE AND/OR KIND OF MATERIAL IS NOT DEFINED BY THE STANDARD SPECIFICATIONS, SUCH WORK SHALL BE PERFORMED IN ACCORDANCE WITH SPECIAL PROVISIONS PREPARED FOR THE SPECIFIC WORK AND MADE A PART OF THE APPROVED PLANS.
4. WHERE CONSTRUCTION PLANS HAVE BEEN PREPARED BY OTHER THAN THE CITY ENGINEER'S STAFF, ALL LINES AND GRADES WILL BE SET AND ESTABLISHED UNDER THE DIRECTION OF THE PRIVATE ENGINEER WHO PREPARED THE PLANS OR AN ENGINEER OR SURVEYOR ACTING ON HIS BEHALF.

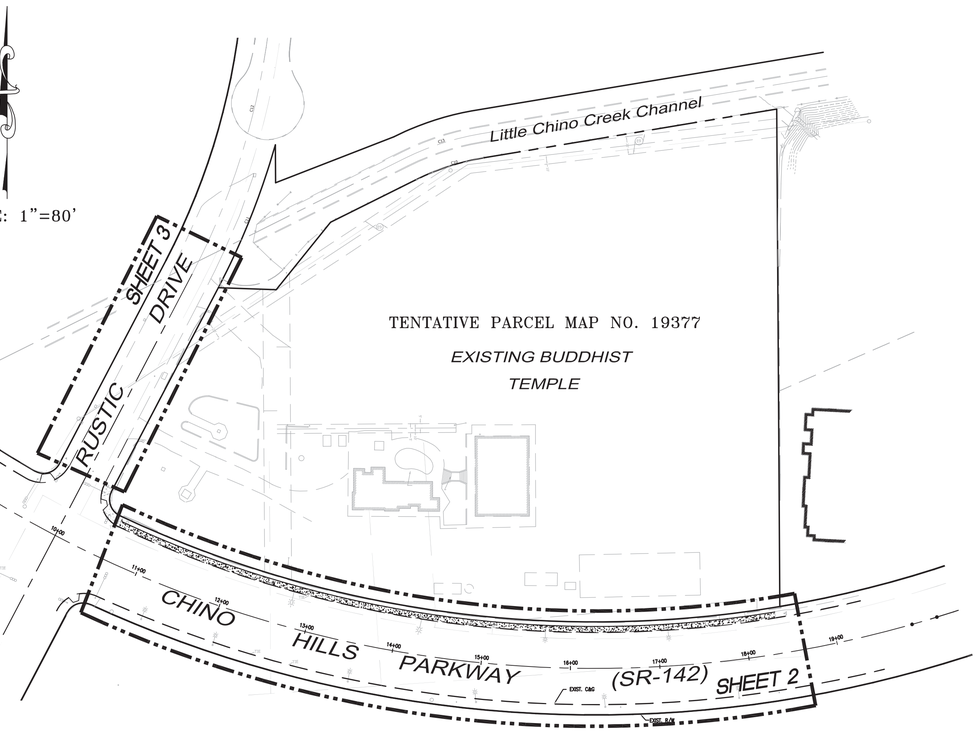
   a. ADEQUATE STAKES SHALL BE SET BY THE PRIVATE ENGINEER TO ENABLE THE CONTRACTOR TO CONSTRUCT THE WORK TO THE PLAN GRADES.
   b. STAKES SHALL NOT BE DESTROYED UNTIL THE WORK HAS BEEN REVIEWED AND APPROVED BY THE PUBLIC WORKS INSPECTOR.
   c. SUBGRADE STAKES, DRIVEN TO THE PAVEMENT SUBGRADE ELEVATION, SHALL BE SET BY THE CONTRACTOR OR PRIVATE ENGINEER. THE STAKES SHALL BE SET AT ALL HINGE, EDGE OF PAVEMENT AND CROWN POINTS WITHIN 0.01 FOOT OF SUBGRADE ELEVATION AND NOT MORE THAN 50 FOOT INTERVALS. ADDITIONAL STAKES MAY BE NEEDED AT WARPED OR VERTICAL CURVE AREAS. SUBGRADE STAKES SHALL BE IN PLACE PRIOR TO PAVING TO PERMIT SPOT CHECKING OF SUBGRADE BY THE PUBLIC WORKS INSPECTOR.

5. ALL SEWER, WATER, ELECTRIC, GAS, PHONE OR OTHER UTILITY LATERALS, MAINS OR CROSSINGS SHALL BE CONSTRUCTED PRIOR TO PAVING.
6. THE MATERIALS TO BE FURNISHED AND USED IN THIS WORK SHALL BE CONTROLLED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 6 OF THE STANDARD SPECIFICATIONS. TESTING OF MATERIALS SHALL BE IN ACCORDANCE WITH THE SCHEDULE IN SECTION 6(D). WRITTEN REPORTS OF THESE TESTS AND A PLAT SHOWING LOCATIONS, SHALL BE SUBMITTED BY THE TESTING LABORATORY TO THE PUBLIC WORKS INSPECTOR PRIOR TO PROCEEDING WITH THE NEXT CONSTRUCTION OPERATION. IF OTHER MANUFACTURED PRODUCTS ARE USED, A CERTIFICATE OF COMPLIANCE FROM THE MANUFACTURER MAY BE PROVIDED TO VERIFY THE QUALITY OF MATERIALS UNLESS OTHERWISE REQUIRED BY THE PLANS.
7. THE HOURS OF OPERATION SHALL BE FROM 6:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. OTHER HOURS SHALL REQUIRE WRITTEN AUTHORIZATION FROM THE CITY ENGINEER OR CITY BUILDING OFFICIAL.
8. NO WORK SHALL BE UNDERTAKEN WITHOUT OBTAINING ALL NECESSARY PERMITS FROM THE CITY. THE SITE SUPERINTENDENT OR FOREMAN SHALL NOTIFY THE ENGINEERING INSPECTOR (909) 364-2770 AT LEAST 48 HOURS IN ADVANCE OF ANY INSPECTIONS REQUIRED.
9. STATE LAW SB 3019 REQUIRES THE CONTRACTOR TO OBTAIN AN IDENTIFICATION NUMBER FROM UNDERGROUND SERVICE ALERT PRIOR TO THE ISSUANCE OF A CITY ENCROACHMENT PERMIT. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO FULL WORKING DAYS (48 HOURS MINIMUM) IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING PAVEMENT REMOVAL, EXCAVATION AND AC OVERLAY, WHICH COULD AFFECT ANY UNDERGROUND UTILITY.
10. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THE PLANS.
11. PRIOR TO ANY CONSTRUCTION WORK WHICH COULD DAMAGE OR CONFLICT WITH UNDERGROUND STRUCTURES OR UTILITIES, THE CONTRACTOR SHALL EXCAVATE INSPECTION HOLES TO DETERMINE THE LOCATION AND DEPTH OF SAID STRUCTURES AND UTILITIES IN THE VICINITY OF, OR WHICH MAY BE AFFECTED BY, THE PROPOSED IMPROVEMENT WORK.
12. IF EXISTING UTILITIES OR OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, WORK SHALL STOP AND THE ENGINEER BE NOTIFIED IMMEDIATELY.
13. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY PUBLIC IMPROVEMENTS DAMAGED AS A RESULT OF CONSTRUCTION AS REQUIRED BY THE PUBLIC WORKS INSPECTOR.
14. THE SITE SHALL BE KEPT REGULARLY WATERED TO MITIGATE BLOWING DUST FOR THE DURATION OF THE HIGH WINDS.
15. NO WATER SHALL BE OBTAINED FROM ANY CITY FIRE HYDRANT WITHOUT THE USE OF AN AUTHORIZED HYDRANT METER.
16. SURVEY MONUMENTS SHALL BE PROTECTED AND PERPETUATED IN PLACE. ANY DISTURBED OR COVERED MONUMENTS SHALL BE RESET BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR.
17. NEW AND EXISTING MANHOLES AND VALVE CANS SHALL BE ADJUSTED TO GRADE.
18. TRENCH BACKFILL SHALL BE DONE IN ACCORDANCE WITH CITY STANDARD DRAWING NO. W-3.
19. THE THICKNESS OF BASE MATERIAL SHALL BE DETERMINED BY SOILS TESTS AND RECOMMENDATIONS FROM THE SOILS ENGINEER. UPON COMPLETION OF ROUGH GRADING, R-VALUES, AND SAND EQUIVALENTS, THE STRUCTURAL SECTION OF STREETS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
20. THE CONTRACTOR SHALL REMOVE AND REPLACE, IN KIND PLUS ONE (1") INCH, A MINIMUM OF TWO FEET IN WIDTH OF EXISTING ASPHALT CONCRETE AND AGGREGATE BASE ADJACENT TO NEWLY CONSTRUCTED CURB AND GUTTER.
21. THE FINAL SURFACE LAYER OF ASPHALT CONCRETE (0.12' MIN.) SHALL NOT BE PLACED UNTIL ALL ONSITE IMPROVEMENTS, INCLUDING GRADING HAVE BEEN COMPLETED AND ALL UNACCEPTABLE WORK HAS BEEN CORRECTED UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS INSPECTOR.
22. THE CONTRACTOR SHALL REMOVE AND INSTALL PAVEMENT MARKINGS AND STRIPING AS REQUIRED BY THE PUBLIC WORKS INSPECTOR IN THE FIELD. THIS REQUIREMENT SHALL INCLUDE THE PAVEMENT MARKERS DESCRIBED IN THE HYDRANT SPECIFICATIONS.
23. "AS-BUILT" RECORD DRAWINGS SHALL BE FURNISHED TO THE CITY UPON COMPLETION OF THE PROJECT.
24. APPROVAL OF THESE PLANS BY THE CITY OR ITS AGENTS SHALL NOT RELIEVE THE CONTRACTOR OR THE APPLICANT OF THE RESPONSIBILITY FOR CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION. UPON REQUEST, THE APPROPRIATE PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.
25. ESTIMATE OF QUANTITIES IS PROVIDED BY THE ENGINEER ONLY FOR THE CONVENIENCE OF THE DEVELOPER. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF CONSTRUCTION QUANTITIES BEFORE SUBMITTING A BID. ANY ITEM OF WORK REQUIRED BY THESE PLANS WHICH IS NOT SPECIFICALLY LISTED IN THE ESTIMATE OF QUANTITIES SHALL BE CONSIDERED AS INCLUDED IN THE OTHER ITEMS OF WORK.

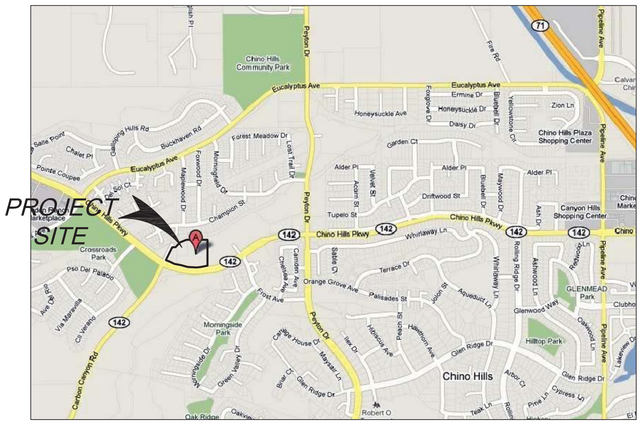
PRIVATE ENGINEER'S NOTICE TO CONTRACTOR:

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS WAS OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY THE LOCATION AND ANY DISCREPANCY BETWEEN THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR ALSO AGREES TO DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

ERIK WINATA R.C.E. DATE



INDEX MAP



VICINITY MAP
NOT TO SCALE

Underground Service Alert
CALL BEFORE YOU DIG
Call: TOLL FREE
811
www.call811.com
TWO WORKING DAYS BEFORE YOU DIG

UNAUTHORIZED CHANGES AND USES:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

REGISTERED PROFESSIONAL ENGINEER
MARIE MARSTON
RCE 38798
Exp. 03/31/17
CIVIL
STATE OF CALIFORNIA

INDEX OF SHEETS:

SHEET	DESCRIPTION
1	TITLE, INDEX MAP, VICINITY MAP AND GENERAL NOTES
2	CHINO HILLS PARKWAY STATION 10+54.06 TO 18+36.69
3	RUSTIC DRIVE STATION 10+75.76 TO 13+35.07

CITY OF CHINO HILLS
ENGINEERING DEPARTMENT
14000 CITY CENTER DRIVE
CHINO HILLS, CA 91709
TEL: (909) 364-2700
FAX: (909) 364-2729
www.chinohills.org

BENCH MARK:

ELEVATIONS ARE BASED ON CITY OF CHINO HILLS BENCH MARK "74-1-17 1980", A BRASS DISK IN CONCRETE MONUMENT LOCATED AT 3.1 MILES EASTERLY ALONG CARBON CANYON ROAD FROM ORANGE COUNTY LINE, 1 FT SOUTHERLY FROM A BARB-WIRE FENCE, 28 FT NORTHERLY FROM AND 35 FT WESTERLY FROM POWERPOLE NO. GT10954.

QUAD-033117414
B.M. ELEV.= 804.6043 FT.
DATE 05/01/81 SBCO SURVEYOR

BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING "N 27°39'44" E" OF THE CENTERLINE OF RUSTIC DRIVE, AS SHOWN IN PARCEL MAP NO. 15721, P.M.B. 194-97-99.

CITY OF CHINO HILLS INCORPORATED 1991

CIVIL WORKS Engineers, Inc.
3151 Airway Avenue, Suite T-1
Costa Mesa, CA 92626
(714) 966-9060

REVISIONS

MARK		APPR	DATE

SIZE D

CITY OF CHINO HILLS
ENGINEERING DEPARTMENT

DESIGNED BY: DRAWN BY: CHECKED BY:

SUBMITTED BY
REVIEWED BY:
ASSISTANT CITY ENGINEER DATE

APPROVED BY:
STEVEN C. NIX, CITY ENGINEER DATE
R.C.E. NO. 56810 EXP. 6/30/17

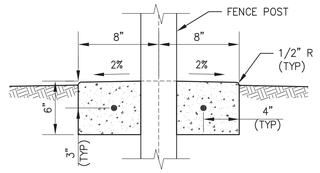
STREET IMPROVEMENT PLANS

TITLE SHEET & GENERAL NOTES

W.O. No.
CIP No. X
PROJECT No.

SHEET 1 OF 3

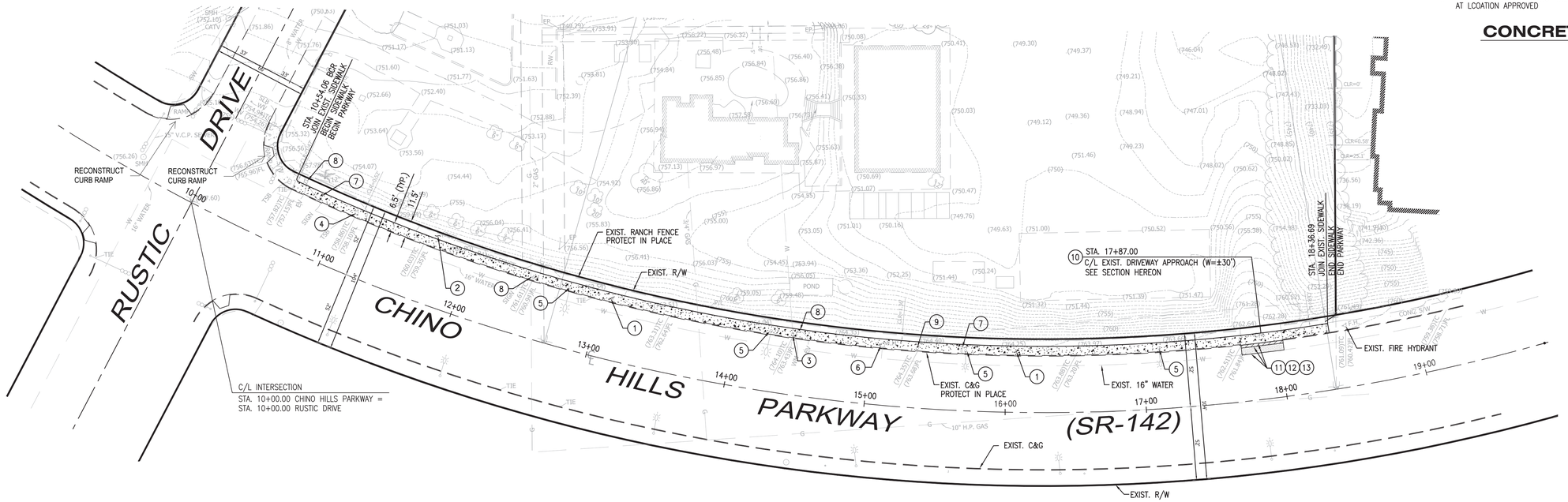
PRELIMINARY - FOR PLAN CHECK ONLY



NOTES:
1. REBAR SHALL BE CONTINUOUS WITH 12" OVERLAP WHERE SPLICED.
2. CONCRETE SHALL BE CLASS 520-C-2500 AND SAFE COLOR AS ADJACENT CONCRETE AND HAVE A SMOOTH TROWEL FINISH.
3. INSTALL WEAKENED PLANE JOINTS AT EACH FENCH POST.
4. INSTALL EXPANSION JOINTS WHERE THE MOWING STRIP ABUTS CONCRETE IMPROVEMENT AND AT LCOATION APPROVED

CONCRETE MOWING CURB

NOT TO SCALE



STREET IMPROVEMENTS ON CHINO HILLS PARKWAY REQUIRE CALTRANS APPROVAL AND ENCROACHMENT PERMIT

CONSTRUCTION NOTES:

1. CONSTRUCT 4" PCC SIDEWALK (MINOR CONCRETE, W=6.5')
2. GRADE 5' WIDE PARKWAY & CONSTRUCT STABILIZED DECOMPOSED GRANITE
3. ADJUST TO GRADE EXISTING WATER SERVICE METER
4. PROTECT IN PLACE EXISTING TRAFFIC SIGNAL PULLBOX
5. PROTECT IN PLACE EXISTING STREET LIGHT FOUNDATION
6. PROTECT IN PLACE EXISTING FIRE HYDRANT
7. PROTECT IN PLACE EXISTING SIGN POST
8. PROTECT IN PLACE EXISTING ELECTRICAL VAULT
9. PROTECT IN PLACE EXISTING VENT PIPE
10. REMOVE EXISTING CONCRETE DRIVEWAY APPROACH
11. CONSTRUCT 8" CURB & 2' GUTTER (TYPE A2) PER CALTRANS STD. PLAN A87A ON C.A.B. C.A.B. THICKNESS TO MATCH EXISTING SUBGRADE
12. SAWCUT EXIST. A.C. PAVEMENT & CONSTRUCT EXISTING PAVEMENT ON C.A.B. A.C. PAVEMENT AND C.A.B. THICKNESS TO MATCH EXISTING
13. GRIND 0.10' EXISTING A.C. PAVEMENT & OVERLAY TO MATCH EXISTING A.C. PAVEMENT
14. CONSTRUCT CONCRETE MOWING CURB UNDER FENCE PER DETAIL THIS SHEET

LEGEND:

- INDICATES PROPOSED A.C. PAVEMENT
- INDICATES REMOVE EXIST. A.C. PAVEMENT
- INDICATES GRIND & OVERLAY EXIST. A.C. PAVEMENT
- INDICATES PROPOSED CONCRETE SIDEWALK

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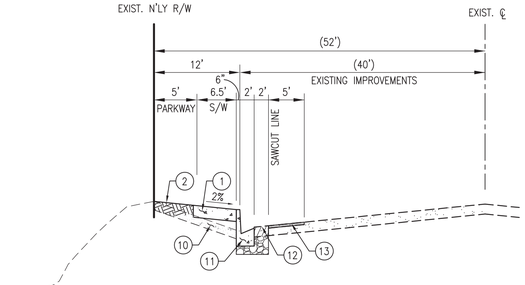
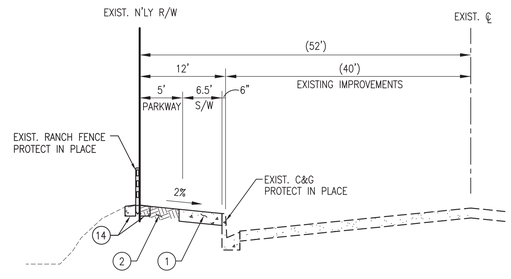


SECTION AT EXIST. DRIVEWAY

NOT TO SCALE



CHINO HILLS PARKWAY

TYPICAL SECTION
NOT TO SCALE

RECTIFIED PROFESSIONAL ENGINEER
MARTE MARSTON
RCE 38798
Exp. 03/31/17
CIVIL
STATE OF CALIFORNIA

GRAPHIC SCALE
40 20 0 40 80
SCALE: 1" = 40'

CITY OF CHINO HILLS
ENGINEERING DEPARTMENT
14000 CITY CENTER DRIVE
CHINO HILLS, CA 91709
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CIVIL WORKS Engineers, Inc.
3151 Airway Avenue, Suite T-1
Costa Mesa, CA 92626
(714) 966-9060

REVISIONS

MARK		APPR	DATE

SIZE D

CITY OF CHINO HILLS
ENGINEERING DEPARTMENT
DESIGNED BY: | DRAWN BY: | CHECKED BY:

SUBMITTED BY
REVIEWED BY:
ASSISTANT CITY ENGINEER DATE

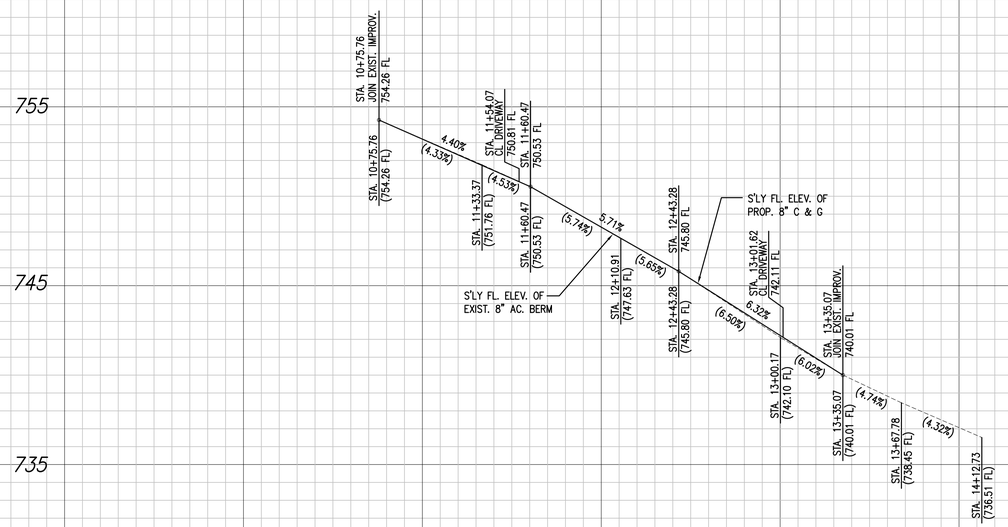
APPROVED BY:
STEVEN C. NIX, CITY ENGINEER DATE
R.C.E. NO. 56810 EXP. 6/30/17

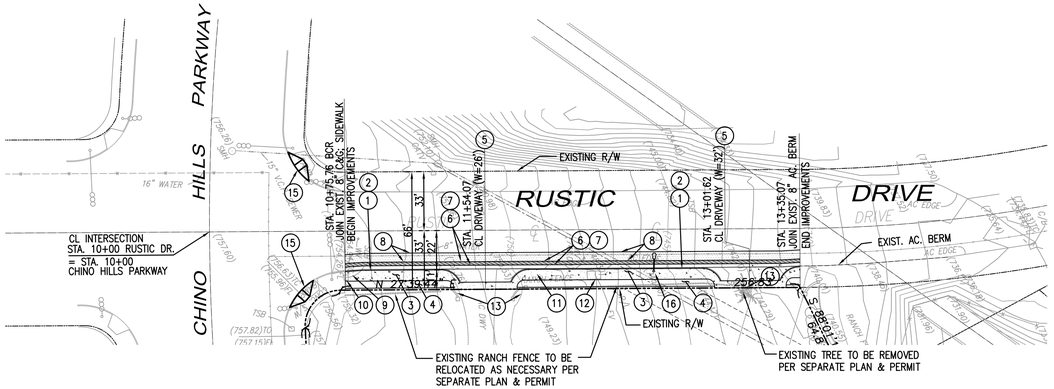
STREET IMPROVEMENT PLANS
CHINO HILLS PARKWAY (SR-142)
STA 10+54.06 TO STA 18+36.69

W.O. No.
CIP No. X
PROJECT No.
SHEET 2 OF 3

PRELIMINARY - FOR PLAN CHECK ONLY

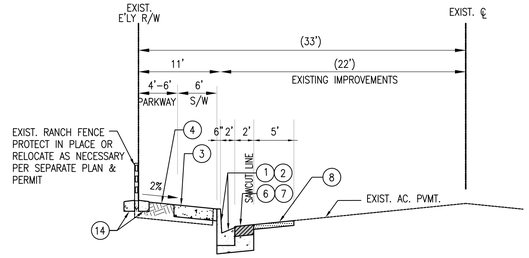
SCALE: HOR. 1"= 40'
VERT. 1"= 4'





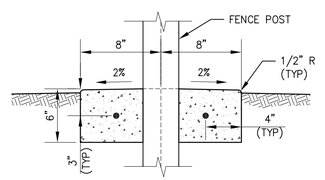
CONSTRUCTION NOTES:

1. REMOVE EXISTING 8" AC BERM
2. CONSTRUCT 8" CURB AND GUTTER PER CITY OF CHINO HILLS STANDARD PLAN 109, MODIFIED FOR 24" GUTTER. TOP OF CURB ELEVATION TO MATCH THE EXISTING TOP OF EXISTING AC BERM ELEVATION
3. CONSTRUCT CURB ADJACENT SIDEWALK PER CITY OF CHINO HILLS STANDARD PLAN 107
4. CONSTRUCT STABILIZED DECOMPOSED GRANITE PARKWAY
5. CONSTRUCT COMMERCIAL DRIVEWAY PER CITY OF CHINO HILLS STANDARD PLAN 117, TYPE B, WIDTH PER PLAN
6. SAWCUT EXISTING AC PAVEMENT
7. CONSTRUCT AC PAVEMENT ON C.A.B. SUBGRADE. AC PAVEMENT AND C.A.B. THICKNESS TO MATCH EXISTING CONDITION
8. GRIND AND OVERLAY 0.1' MINIMUM OF EXISTING AC PAVEMENT
9. PROTECT IN PLACE EXISTING SIGN POST
10. PROTECT IN PLACE EXISTING TRAFFIC SIGNAL VAULT
11. PROTECT IN PLACE EXISTING MAILBOX
12. PROTECT IN PLACE EXISTING ELECTRICAL VAULT
13. REMOVE EXISTING BLOCK WALL
14. CONSTRUCT CONCRETE MOWING CURB UNDER FENCE PER DETAIL THIS SHEET
15. RECONSTRUCT CURB RAMP
16. INSTALL PUBLIC STREET LIGHTING PER CITY STANDARDS



RUSTIC DRIVE

TYPICAL SECTION
NOT TO SCALE



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CONCRETE MOWING CURB

NOT TO SCALE

LEGEND:

- INDICATES PROPOSED AC. PAVEMENT
- INDICATES REMOVE EXISTING AC. PAVEMENT
- INDICATES GRIND & OVERLAY EXISTING AC. PAVEMENT
- INDICATES PROPOSED CONCRETE SIDEWALK

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REGISTERED PROFESSIONAL ENGINEER
MARIE MARSTON
RCE 38798
Exp. 03/31/17
CIVIL
STATE OF CALIFORNIA

GRAPHIC SCALE
40 20 0 40 80
SCALE: 1" = 40'

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REVISIONS

MARK		APPR	DATE

SIZE D

CITY OF CHINO HILLS
ENGINEERING DEPARTMENT

DESIGNED BY:	DRAWN BY:	CHECKED BY:

SUBMITTED BY
REVIEWED BY:
ASSISTANT CITY ENGINEER DATE

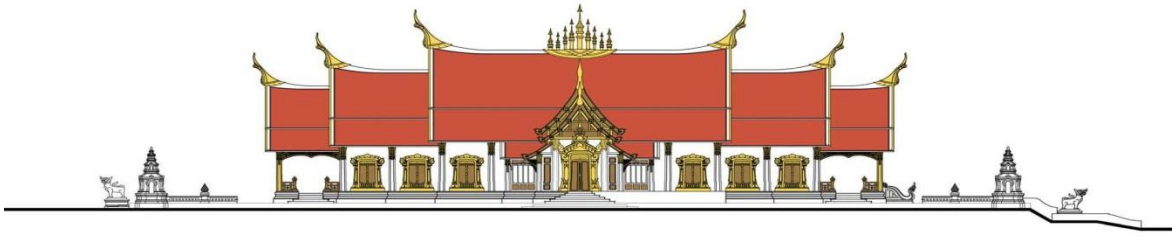
APPROVED BY:
STEVEN C. NIX, CITY ENGINEER DATE
R.C.E. NO. 56810 EXP. 6/30/17

STREET IMPROVEMENT PLANS
RUSTIC DRIVE
STA 10+75.76 TO STA 13+35.07

W.O. No.
CIP No. X
PROJECT No.
SHEET 3 OF 3

Appendix B

Air Quality/Greenhouse Gas Emissions Study



Air Quality and Greenhouse Gas Study

New Buddhist Temple Project

prepared for
City of Chino Hills
Community Development Department
14000 City Center Drive
Chino Hills, California 91709

prepared by
Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93001

February 2017

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
www.rinconconsultants.com

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1.2 Project Summary 1
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Appendices

Appendix A CalEEMod Air Quality and Greenhouse Gas Model Worksheets and Math Equations

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1 Project Description

1.1 Introduction

This study analyzes the potential air quality and greenhouse gas (GHG) impacts of the proposed temple expansion of the existing Buddhist Temple located east of Rustic Drive and north of Chino Hills Parkway in the City of Chino Hills. Rincon Consultants, Inc. prepared the study under contract to Chino Hills, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). This analysis considers both temporary impacts that would result from project construction and long-term impacts associated with operation of the project.

1.2 Project Summary

The following describes the project background and the currently proposed project, as well as analytical approach taken to complete the air quality and GHG emissions analysis.

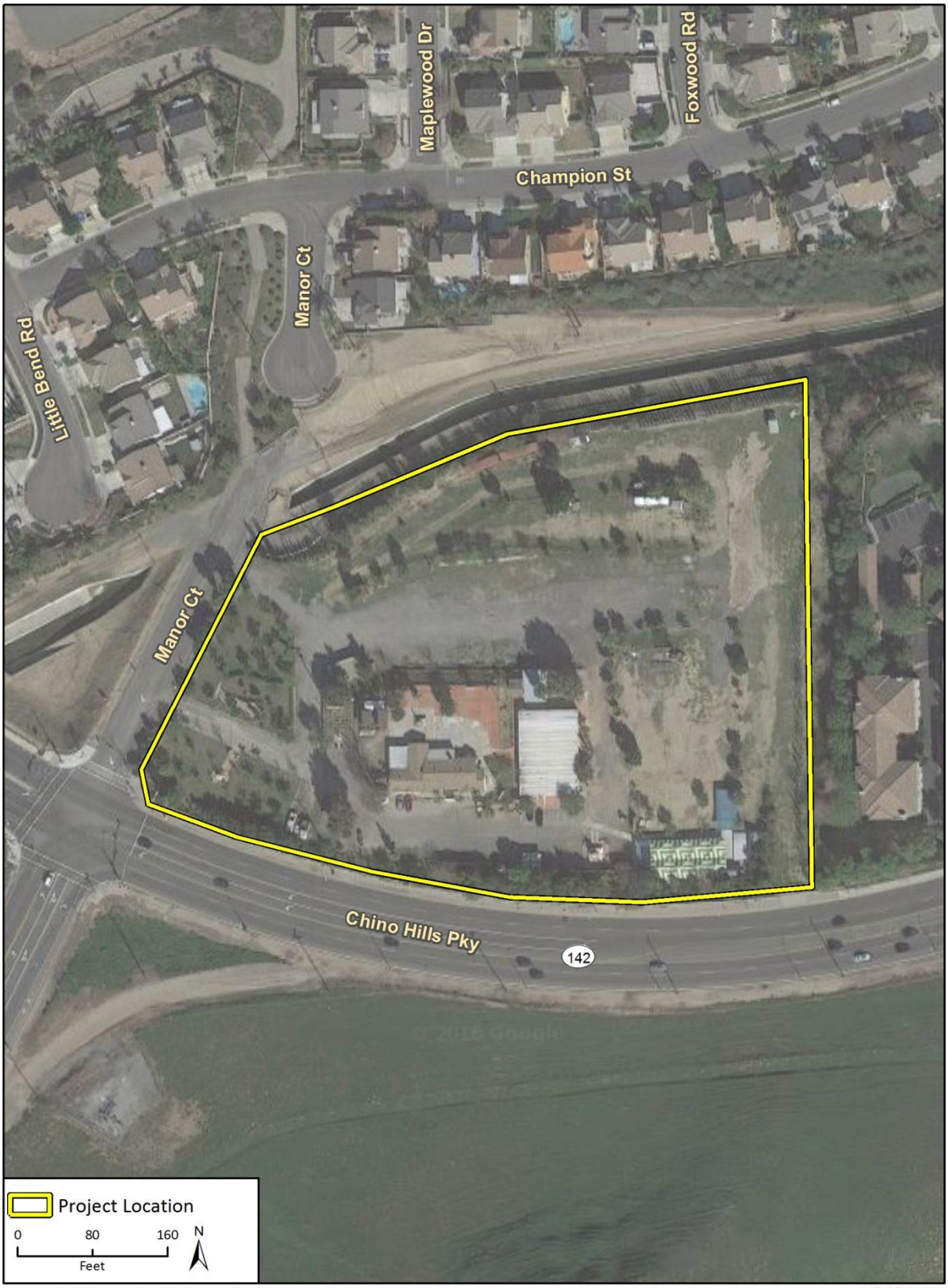
Project Background

The project site is located at 2948 Chino Hills Parkway at the Wat Phra That Doi Suthep Buddhist Temple in the City of Chino Hills. The project site encompasses 7.3 acres (317,988 square feet (sf)) and is currently occupied with several buildings associated with its current use. The site has 3,520 sf of dormitory space and a 5,470 sf hall. Typically 15 to 20 people visit the site Monday through Saturday and 60 to 80 people visit on Sunday. The Temple hosts major events 10 times per year with 80 to 100 attendees. The grounds surrounding the existing buildings and structures consist of paved driveways and parking lots surrounded by landscaped lawns and gardens. The areas of the project site that are not dominated by development or ornamental landscaping consist of bare dirt with gravel and sparse vegetation. Based on aerial photographs the site has been developed and utilized as a Buddhist Temple since at least 2002. Existing site conditions are shown in Figure 1.

Current Proposal

The proposed project involves the demolition of existing buildings for development of new buildings and structures at the existing Buddhist Temple site to accommodate temple expansion. The project would combine three parcels into one for the proposed development. Development of the proposed project is expected to be completed in three (3) consecutive phases. Phase I would begin in the year 2018 and would be completed within three years, Phase II would be completed within 1.5 years and Phase III would be completed within 15 months. Phase I would include development of a 3,100 sf Buddha Hall, 1,900 sf kitchen/restroom building, and surface parking; Phase II would involve construction of a 9,025 sf monk dormitory; and Phase III would involve demolition of the 3,520 sf dorm and 5,470 sf hall and the construction of a 5,775 sf classrooms/office building, a 3,600 sf meditation area, and additional surface parking. Upon completion of the proposed development, the project site would contain a total of 300 parking spaces, 293 standard and seven handicap accessible spaces located around the exterior of the site. Racks for bicycle parking would be provided onsite. The project site would be landscaped around the exterior as well as throughout the site and would include ornamental tree species such as pink dawn chitalpa, Chinese flame tree, evergreen pear, and deodar cedar.

Figure 1 Existing Site Conditions



2 Air Quality

2.1 Background

Local Climate and Meteorology

The project site is within the South Coast Air Basin (SCAB), which is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, substantial vehicular traffic, and industry.

Air pollutant emissions within the SCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

Air Quality Regulation

The federal and state governments have established ambient air quality standards for the protection of public health. The United State Environmental Protection Agency (U.S. EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (ARB) is the state equivalent in the California EPA. County-level Air Pollution Control Districts (APCDs) provide local management of air quality. The ARB has established air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The ARB has established 14 air basins statewide.

The U.S. EPA has set primary national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead (Pb). Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, the State of California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards. Table 1 lists the current federal and state standards for regulated pollutants.

The South Coast Air Quality Management District (SCAQMD) is the designated air quality control agency in the SCAB. The SCAB is designated nonattainment for the federal and state one-hour and eight-hour ozone standards, the federal and state PM_{10} standards, the federal 24-hour $PM_{2.5}$ standard, and the state and federal annual $PM_{2.5}$ standard. The SCAB is in attainment of all other federal and state standards. Characteristics of ozone, CO, NO_2, and suspended particulates are described below.

Table 1 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	1-Hour	---	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	---	---
	24-Hour	---	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM_{10}	Annual	---	20 $\mu g/m^3$
	24-Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
PM_{25}	Annual	12 $\mu g/m^3$	12 $\mu g/m^3$
	24-Hour	35 $\mu g/m^3$	---
Lead	30-Day Average	---	1.5 $\mu g/m^3$
	3-Month Average	0.15 $\mu g/m^3$	---

ppm = parts per million;

$\mu g/m^3$ = micrograms per cubic meter

Source: ARB, Ambient Air Quality Standards, 2016.

Ozone

Ozone (O_3) is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic gases (ROG[1]). NO_X is formed during the combustion of fuels, while reactive organic gases are formed during combustion and evaporation of organic solvents. Because O_3 requires sunlight to form, it mostly occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

[1] Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, from an air quality perspective two groups are important: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC). SCAQMD uses the term VOC to denote organic precursors.

Carbon Monoxide

CO is a local pollutant that is found in high concentrations only near fuel combustion equipment and other sources of CO. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Elevated concentrations, therefore, are usually only found near areas of high traffic volumes. CO's health effects are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Nitrogen Dioxide

NO_2 is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. Nitrogen dioxide is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO_2 absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of ozone/smog and acid rain.

Suspended Particulates

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM_{10} (which measures no more than 10 microns in diameter) and $PM_{2.5}$, (a fine particulate measuring no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the small particulates (PM_{10} and $PM_{2.5}$) and $PM_{2.5}$ can be different. Major man-made sources of PM_{10} are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer, $PM_{2.5}$ particulates are generally associated with combustion processes as well as being formed in the atmosphere as a secondary pollutant through chemical reactions. $PM_{2.5}$ is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Current Air Quality

The SCAQMD operates a network of air quality monitoring stations throughout the SCAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the California and federal standards. The monitoring station located closest to the project site is the Pomona station, located at 924 N. Garey Avenue, approximately six miles north of the project site. Table 2 indicates the number of days that each of the standards has been exceeded at the Pomona station. However, this station does not monitor PM emissions; therefore, data for PM emissions were obtained from the Upland monitoring station, which is the second-closest station and is located approximately 10.5 miles northeast of the project site.

Table 2 Ambient Air Quality at the Monitoring Station

Pollutant	2013	2014	2015
8 Hour Ozone (ppm), 8-Hr Average	0.125	0.123	0.136
Number of Days of State exceedances (>0.087)	12	22	30
Number of days of Federal exceedances (>0.079)	0.100	0.100	0.100
Ozone (ppm), Worst Hour	22	53	53
Number of days of State exceedances (>0.09 ppm)	15	33	36
Number of days of Federal exceedances (>0.112 ppm)	*	*	*
Nitrogen Dioxide (ppb) - Worst Hour	0	0	0
Number of days of State exceedances	0.078	0.088	0.072
Number of days of Federal exceedances	0	0	0
Particulate Matter 10 microns, μg/m^3, Worst 24 Hours[1]	96.8	80.8	77.7
Number of days above Federal standard (>150 μg/m^3)	*	*	*
Particulate Matter <2.5 microns, μg/m^3, Worst 24 Hours[1]	83.2	40.0	73.4
Number of days above Federal standard (>35 μg/m^3)	*	*	*

Source: ARB, 2013, 2014, and 2015 Annual Air Quality Data Summaries, 2015.

Pomona Monitoring Station unless otherwise noted.

[1]Upland monitoring station data

* There was insufficient (or no) data available to determine the value.

Air Quality Management Plan

Under state law, the SCAQMD is required to prepare a plan for air quality improvement for pollutants for which the District is in nonattainment. Every 3 years, the SCAQMD prepares a new Air Quality Management Plan (AQMP), which updates the previous plan and has a 20-year horizon. The SCAQMD adopted the Final 2012 AQMP on December 7, 2012 and forwarded it to the ARB for review in February 2013. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. Currently, the SCAQMD has released a revised Draft 2016 AQMP, which is a comprehensive and integrated plan primarily focused on addressing the ozone standards. The draft plan is a regional and multi-agency effort (SCAQMD ARB, Southern California Association of Governments [SCAG], and U.S. EPA). State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The Draft 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and updated emission inventory methodologies for various source categories. The Draft 2016 AQMP is currently being considered for adoption, but has not been adopted by the SCAQMD Board at this time.

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore, schools, hospitals, and residences.

Sensitive receptors likely to be affected by air quality impacts associated with construction of the proposed project include single-family residences located 165 feet to the north across Little Chino Creek, additional single-family residences located 100 feet to the west across Rustic Drive, and an apartment complex adjacent to the project site located 50 feet to the east. Residences within the proposed project, including the existing dormitory, would also be sensitive receptors.

2.2 Impact Analysis

Methodology and Significance Thresholds

This air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of the project.

Project construction would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. Some of this equipment would be used during grading activities as well as when structures are constructed. It is assumed that all construction equipment used would be diesel-powered. The project's construction emissions were calculated using the California Emissions Estimator Model (CalEEMod) software version 2016.3.1 using model defaults for the types and number of pieces of equipment that would be used onsite during each of the construction phases. For the demolition phase the square footage of demolition was based on the existing square footage of the buildings on the project site. The construction schedule was based on project information and the architectural coating phase was changed to overlap with building construction, representing a more realistic construction practice.

Construction of the project would involve demolition of existing buildings, site grading, excavation, construction, and other construction-related activities.

Operational emissions associated with the proposed project were also estimated using CalEEMod. Operational emissions include mobile source emissions, energy emissions, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of onsite development. Proposed project traffic generation rates from the Traffic Impact Analysis prepared by Linscott Law & Greenspan Engineers (2017) were used for the traffic analysis in order to provide a conservative estimate of the potential traffic generation emissions. Emissions attributed to energy use include natural gas consumption for space and water heating. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coating. The two buildings that would be demolished during project construction are currently in use; therefore, their operational emissions were also modeled and accounted for in this study.

Regional Thresholds

To determine whether a project would have a significant impact to air quality, Appendix G of the CEQA Guidelines questions whether a project would:

1) Conflict with or obstruct implementation of the applicable air quality plan
2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation
3) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)
4) Expose sensitive receptors to substantial pollutant concentrations
5) Create objectionable odors affecting a substantial number of people

The SCAQMD recommends the following quantitative regional significance thresholds for temporary construction activities and long-term project operation within the SCAB:

Construction Thresholds	Operational Thresholds
75 pounds per day of ROG	55 pounds per day of ROG
100 pounds per day of NO_X	55 pounds per day of NO_X
550 pounds per day of CO	550 pounds per day of CO
150 pounds per day of PM_{10}	150 pounds per day of SO_X
55 pounds per day of $PM_{2.5}$	150 pounds per day of PM_{10}
	55 pounds per day of $PM_{2.5}$

Localized Significance Thresholds

In addition to regional thresholds, the 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 *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 consideration 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. LSTs have been developed for NO_X, CO, PM_{10}, and $PM_{2.5}$. LSTs are not applicable to mobile sources such as cars on a roadway (SCAQMD, Final Localized Significance Threshold Methodology, 2003). As such, LSTs for operational emissions do not apply to onsite development, as the majority of emissions would be generated by cars on the roadways.

LSTs have been developed for emissions within construction areas up to five acres in size. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project site encompasses approximately 7.3 acres. It is unlikely that more than five acres would be under active construction at one time; therefore, this analysis utilizes the five-acre LSTs. The five-acre LSTs provide a more stringent threshold for construction emissions compared to the analysis of emissions over a larger area. According to the SCAQMD's publication, *Final Localized Significant Thresholds (LST) Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies. Because the project site is located in SRA-33 (Southwest San Bernardino Valley), LSTs for construction in SRA-33 are shown in Table 3. LSTs are provided for receptors at a distance of 82 to 1,640 feet from the project site boundary. Construction activity would occur approximately 50 feet (15.2 meters) west from the closest sensitive receptor, which is a three-story apartment complex. According to the SCAQMD's publication, *Final LST Methodology*, projects with boundaries located closer than 82 feet to the nearest receptor should use the LSTs for receptors located at 82 feet.

Table 3 SCAQMD LSTs for Construction (SRA-33)

Pollutant	Allowable emissions from a 5-acre site in SRA-33 for a receptor 82 feet away
Gradual conversion of NO_X to NO_2	270
CO	2,193
PM_{10}	16
$PM_{2.5}$	9

Source: SCAQMD, Appendix C: Mass Rage Look-up Tables, 2009.

Regulatory Requirements

The project would comply with all applicable regulatory standards. In particular, the project would comply with 2013 CALGreen Code, in addition to SCAQMD Rules 403 and 1113 and all other applicable provisions of the SCAQMD. Rules 403 and 1113 were added as mitigation in CalEEMod, as discussed below. Cal Green standards include indoor water usage reduction, regulation of outdoor water usage, and construction waste reduction.

The grading phase involves the greatest amount of heavy equipment and the greatest generation of fugitive dust. For the purposes of construction emissions modeling, it was assumed that the project would comply with the SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the SCAB. Therefore, the following conditions, which would be required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

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 onsite 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. In addition, a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide, shall be utilized to remove bulk material from tires and vehicle undercarriages before vehicles exit the site. 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 continuously over a one-hour period).

5. **Street Sweeping.** Construction contractors should sweep all onsite 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.

The architectural coating phase involves the greatest release of ROG. The emissions modeling also includes the use of low-VOC paint (50 g/L for non-flat coatings) as required by SCAQMD Rule 1113.

Construction Impacts

Table 4 summarizes maximum daily emissions of pollutants associated with construction of the proposed project. Maximum daily estimates account for compliance with the above described requirements, but do not include any additional mitigation. Emissions of CO, PM_{10}, $PM_{2.5,}$ NO_X, and ROG would not exceed SCAQMD regional thresholds or LSTs, assuming adherence to the conditions listed above required by SCAQMD Rule 403.

Table 4 Estimated Construction Emissions (lbs/day)

	Maximum Emissions[1] (lbs/day)				
Construction Year	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum lbs/day	3.2	33.1	21.2	10.4	6.1
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**
Maximum onsite lbs/day	3.1	33.1	20.6	10.2	6.0
Localized Significance Thresholds[2] (LSTs) (Onsite only)	*N/A*	*270*	*2,193*	*16*	*9*
Threshold Exceeded?	**N/A**	**No**	**No**	**No**	**No**

Notes: All calculations were made using CalEEMod. See Appendix A for calculations. Demolition, Grading, Paving, Building Construction and Architectural Coating totals include worker trips, soil export hauling trips, construction vehicle emissions and fugitive dust. Emission data is pulled from "mitigated" results that include compliance with regulations and project design features that will be included in the project.

[1] Grading phases incorporate anticipated emissions reductions from the conditions listed above, which are required by SCAQMD Rule 403 to reduce fugitive dust. The architectural coating phases incorporate anticipated emissions reductions from the conditions listed above, which are required by Rule 1113.

[2] LSTs are for a 5-acre project in SRA-33 within a distance of 82 feet from the site boundary.

Long-Term Regional Impacts

AQMP Consistency

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding forecasts used in the development of the AQMP. The 2012 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates local city general plans and the Southern California Association of Government's (SCAG) 2016 RTP socioeconomic forecast projections of regional population, housing and employment growth.

As required by Mitigation Measure LU-1 of the Final Program Environmental Impact Report (FEIR) General Plan Update, certified in February 2015 (SCH# 2013051082), the City coordinated with the San

Bernardino Association of Governments and SCAG to ensure that growth forecasts for the City, based on the 2015 General Plan Update, were incorporated into regional planning programs (Chino Hills, Final Program Environmental Impact Report General Plan Update, 2015). Therefore, the local and regional forecasts are consistent. The updated growth forecasts in SCAG's 2016 RTP/SCS estimate that the Chino Hills population will be 89,000 in 2035 and 94,900 in 2040.

The proposed project would involve the development of new structures at the Buddhist Temple for temple expansion, including a monk dormitory. The dormitory would be two-stories in height and include a total of 28 one-bedroom units (including four guest rooms), providing accommodation for a total of 28 people. This increase in population would be within the SCAG's projected 2040 population for the City of 94,900. Since population growth would be within SCAG 2016 population growth forecasts, the project would be consistent with the AQMP.

Operational Air Pollutant Emissions

Table 6 summarizes the project's operational emissions for each phase of development minus operational emissions of the existing buildings that are to be demolished. The majority of project-related operational emissions would be due to vehicle trips to and from the site. Project-generated emissions would not exceed SCAQMD recommended thresholds for ROG, NO_X, CO, SO_X, PM_{10}, or $PM_{2.5}$.

Table 6 Estimated Operational Emissions (lbs/day)

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	0.6	<0.1	2.3	<0.1	<0.1	<0.1
Energy	<0.1	0.2	0.1	<0.1	<0.1	<0.1
Mobile	1.0	4.1	11.3	<0.1	3.9	1.1
Project Total	1.6	4.3	13.7	<0.1	3.9	1.1
Current Emissions	0.8	2.4	6.8	<0.1	1.2	0.3
Net Change	0.8	1.9	6.9	<0.1	2.7	0.8
SCAQMD Thresholds	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

See Appendix A for CalEEMod computer model output. Note: Numbers may not add up due to rounding.

[1] Estimated operational emissions (lbs/day) of the proposed project after buildout of Phases I, 2, and 3.

Odors

The 1993 SCAQMD *CEQA Air Quality Handbook* identifies land uses associated with odor complaints. Because religious institution uses are not identified as land uses associated with odor complaints by SCAQMD, the project would not generate objectionable odors affecting a substantial number of people.

Toxic Air Contaminants (TACs)

The California Air Resources Board's (ARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. The primary concern with respect to heavy-traffic roadway adjacency is the long-term effect of TACs, such as diesel exhaust particulates, on sensitive receptors. The primary source of diesel exhaust particulates is heavy-duty trucks on freeways and high-volume arterial roadways. The project site is over one mile west of Highway 71 and is not within 500 feet of a freeway. According to the traffic study prepared for the proposed project, there are 383 average daily trips on Rustic Drive and 29,253 average daily trips on Chino Hills Parkway adjacent to the project site. Thus, the proposed project would not introduce sensitive receptors to an urban road with 100,000 vehicles per day, and the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

3 Greenhouse Gases

3.1 Background

This section analyzes greenhouse gas (GHG) emissions associated with the project and potential impacts related to climate change.

Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of 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. The term "climate change" is often used interchangeably with the term "global warming," but "climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years. Per the United Nations Intergovernmental Panel on Climate Change (IPCC, Summary for Policymakers, 2014), the understanding of anthropogenic warming and cooling influences on climate has led to a high confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-20th century (IPCC, Summary for Policymakers, 2014).

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHG). The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHG because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Both natural processes and human activities emit GHGs. $CO_2$and CH_4 are emitted in the greatest quantities from human activities. Emissions of $CO_2$are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Observations of CO_2 concentrations, globally-averaged temperature, and sea level rise are generally well within the range of the extent of the earlier IPCC projections. The recently observed increases in CH_4 and N_2O concentrations are smaller than those assumed in the scenarios in the previous assessments. Each IPCC assessment has used new projections of future climate change that have become more detailed as the models have become more advanced.

Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (California Environmental Protection Agency [CalEPA], Climate Action Team Report, 2006). Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHG absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide

equivalent" (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one. By contrast, CH_4 has a GWP of 25, meaning its global warming effect is 25 times greater than CO_2 on a molecule per molecule basis (IPCC, Summary for Policymakers, 2007).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CalEPA, Climate Action Team Report, 2006). However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Greenhouse Gas Emissions Inventory

Worldwide anthropogenic emissions of GHG were approximately 46,000 million metric tons (MMT, or gigatonne) of CO_2e in 2010 (IPCC, Summary for Policymakers, 2014). CO_2 emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, CO_2 was the most abundant accounting for 76 percent of total 2010 emissions. CH_4 emissions accounted for 16 percent of the 2010 total, while N_2O and fluorinated gases account for 6 and 2 percent respectively (IPCC, Summary for Policymakers, 2014).

Total U.S. GHG emissions were 6,870.5 MMT of CO_2e in 2014 (U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, 2016). Total U.S. emissions have increased by 7.4 percent since 1990; emissions increased by 1.0 percent from 2013 to 2014 (U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, 2016). The increase from 2013 to 2014 was due to relatively cool winter conditions, which led to an increase in fuels consumed for heating and cooling for the residential and commercial sectors. Additionally, transportation emissions increased as a result of a small increase in vehicle miles traveled (VMT) and fuel use across on-road transportation modes. There also was an increase in industrial production across multiple sectors resulting in slight increases in industrial sector emissions (U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, 2016). Since 1990, U.S. emissions have increased at an average annual rate of 0.3 percent. In 2014, the industrial and transportation end-use sectors accounted for 29.2 percent and 26.4 percent of CO_2 emissions (with electricity-related emissions distributed), respectively. Meanwhile, the residential and commercial end-use sectors accounted for 16.6 percent and 17.1 percent of CO_2 emissions, respectively (U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, 2016).

Based upon the California Air Resources Board (ARB) California Greenhouse Gas Inventory for 2000-2014, California produced 441.5 MMT of CO_2e in 2014 (ARB, California Greenhouse Gas Inventory for 2000-2014, 2016). The major source of GHG in California is transportation, contributing 37 percent of the state's total GHG emissions. Industrial sources are the second largest source of the state's GHG emissions, contributing 24 percent of the state's GHG emissions (ARB, California Greenhouse Gas Inventory for 2000-2014, 2016). California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. The ARB has projected statewide unregulated GHG emissions for the year 2020 will be 509.4 MMT CO_2e (ARB, California Greenhouse Gas Inventory for 2000-2014, 2016). These projections represent the emissions that would be expected to occur in the absence of any GHG reduction actions.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through potential impacts related to future air, land, and water temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Long-term trends have found that each of the past three decades has been warmer than all the previous

decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The global combined land and ocean temperature data show an increase of about 0.89°C (0.69°C–1.08°C) over the period 1901–2012 and about 0.72°C (0.49°C–0.89°C) over the period 1951–2012 when described by a linear trend. Several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations are in agreement that LSAT, as well as sea surface temperatures, has increased. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC, Summary for Policymakers, 2014).

According to the CalEPA's 2010 Climate Action Team Biennial Report, potential impacts of climate change in California may include decreased snow pack, sea level rise, and increase in extreme heat days per year, high ground-level O_3 days, large forest fires, and drought (CalEPA, Climate Action Team Biennial Report, 2010). Below is a summary of some of the potential impacts that could be experienced in California as a result of climate change.

Air Quality

Higher temperatures, which are conducive to air pollution formation, could worsen air quality in many areas of California. Climate change may increase the concentration of ground-level O_3, but the magnitude of the effect, and therefore its indirect effects, are uncertain. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thereby ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (California Energy Commission [CEC], Environmental Health and Equity Impacts from Climate change and Mitigation Policies in California, 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future water supplies in California. However, the average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage. During the same period, sea level rose eight inches along California's coast. California's temperature has risen 1°F, mostly at night and during the winter, with higher elevations experiencing the highest increase. Many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record (California Department of Water Resources [DWR], Managing and Uncertain Future, 2008; California Climate Change Center [CCCC], The Impacts of Sea-Level Rise on the California Coast, 2009).

This uncertainty complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The Sierra snowpack provides the majority of California's water supply by accumulating snow during the state's wet winters and releasing it slowly during the state's dry springs and summers. Based upon historical data and modeling DWR projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. Climate change is also anticipated to bring warmer storms that result in less snowfall at lower elevations, reducing the total snowpack (DWR, Managing and Uncertain Future, 2008).

Hydrology and Sea Level Rise

As discussed above, climate change could potentially affect: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. According to The Impacts of Sea-Level Rise on the California Coast, prepared by the CCCC (CCCC, The Impacts of Sea-Level Rise on the California Coast, 2009), climate change has the potential to induce substantial sea level rise in the coming century. The rising sea level increases the likelihood and risk of flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, as observed by satellites, ocean buoys and land gauges, was approximately 3.2 mm per year, which is double the observed 20th century trend of 1.6 mm per year (World Meteorological Organization [WMO], A Summary of Current and Climate Change Findings and Figures, 2013). As a result, sea levels averaged over the last decade were about 8 inches higher than those of 1880 (WMO, A Summary of Current and Climate Change Findings and Figures, 2013). Sea levels are rising faster now than in the previous two millennia, and the rise is expected to accelerate, even with robust GHG emission control measures. The most recent IPCC report (2013) predicts a mean sea–level rise of 11-38 inches by 2100. This prediction is more than 50 percent higher than earlier projections of 7-23 inches, when comparing the same emissions scenarios and time periods. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply due to salt water intrusion. In addition, increased CO_2 emissions can cause oceans to acidify due to the carbonic acid it forms. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has a $30 billion annual agricultural industry that produces half of the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater air pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (CCCC, Climate Scenarios for California, 2006).

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on the local and global levels. Increasing concentrations of GHGs are likely to accelerate the rate and severity of climate change impacts. Scientists project that the average global surface temperature could rise by 1.0-4.5°F (0.6-2.5°C) in the next 50 years, and 2.2-10°F (1.4-5.8°C) during the next century, with substantial regional variation. Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes, such as carbon cycling and storage (Parmesan, Ecological and Evolutionary Responses to Recent Climate Change, 2006).

Regulatory Setting

The following regulations address both climate change and GHG emissions.

Federal Regulations

The United States Supreme Court in Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120) held that the U.S. EPA has the authority to regulate tail pipe emissions from motor-vehicles under the federal Clean Air Act.

The U.S. EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The first annual reports for these sources were due in March 2011.

On May 13, 2010, the U.S. EPA issued a Final Rule that took effect on January 2, 2011, setting a threshold of 75,000 tons of CO_2e/year for GHG emissions. New and existing industrial facilities that meet or exceed that threshold will require a permit after that date. On November 10, 2010, the U.S. EPA published the "PSD and Title V Permitting Guidance for Greenhouse Gases." The U.S. EPA's guidance document is directed at state agencies responsible for air pollution permits under the Federal Clean Air Act to help them understand how to implement GHG reduction requirements while mitigating costs for industry. It is expected that most states will use the U.S. EPA's new guidelines when processing new air pollution permits for power plants, oil refineries, cement manufacturing, and other large pollution point sources.

On January 2, 2011, the U.S. EPA implemented the first phase of the Tailoring Rule for GHG emissions Title V Permitting. Under the first phase of the Tailoring Rule, all new sources of emissions are subject to GHG Title V permitting if they are otherwise subject to Title V for another air pollutant and they emit at least 75,000 tons of CO_2e/year. Under Phase 1, no sources were required to obtain a Title V permit solely due to GHG emissions. Phase 2 of the Tailoring Rule went into effect July 1, 2011. At that time new sources were subject to GHG Title V permitting if the source emits 100,000 tons of CO_2e/year, or they are otherwise subject to Title V permitting for another pollutant and emit at least 75,000 tons of CO_2e/year.

On July 3, 2012 the U.S. EPA issued the final rule that retains the GHG permitting thresholds that were established in Phases 1 and 2 of the GHG Tailoring Rule. These emission thresholds determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities.

California Regulations

California Air Resources Board (ARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. California has a numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires ARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, U.S. EPA granted the waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025. Fleet average emission standards would reach 22 percent reduction from 2009 levels by 2012 and 30 percent by 2016. The Advanced Clean Cars program coordinates the goals of the Low Emissions Vehicles (LEV), Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (ARB, Staff Report, 2011).

In 2005, the governor issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. EO S-3-05 provides that by 2010, emissions shall be reduced to 2000 levels; by 2020,

emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent below 1990 levels (CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, 2006). In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA, Climate Action Team Report to Governor Schwarzenegger and the Legislature, 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc. In April 2015, the governor issued EO B-30-15, calling for a new target of 40percent below 1990 levels by 2030.

California's major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the "California Global Warming Solutions Act of 2006," signed into law in 2006. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels; the same requirement as under S-3-05), and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO_2e. The Scoping Plan was approved by ARB on December 11, 2008, and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan. Implementation activities are ongoing and ARB is currently the process of updating the Scoping Plan.

In May 2014, ARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines ARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in EO S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (ARB, AB 32 Scoping Plan, 2017).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

ARB Resolution 07-54 establishes 25,000 MT of GHG emissions as the threshold for identifying the largest stationary emission sources in California for purposes of requiring the annual reporting of emissions. This threshold is just over 0.005 percent of California's total inventory of GHG emissions for 2004.

Senate Bill (SB) 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by directing ARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles for 2020 and 2035. In addition, SB 375 directs each of the state's 18 major Metropolitan Planning Organizations (MPO) to prepare a "sustainable communities strategy" (SCS) that contains a growth strategy to meet these emission targets for inclusion in the RTP. On September 23, 2010, ARB adopted final regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035.

The SCAG was assigned targets of an 8 percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

In April 2011, the governor signed SB 2X, requiring California to generate 33 percent of its electricity from renewable energy by 2020.

On September 8, 2016, the governor signed SB 32 into law, which requires the State to further reduce GHGs to 40 percent below 1990 levels by 2030. SB 32 is an extension of AB 32. The other provisions of AB 32 remain unchanged. ARB is currently working to update the Scoping Plan to provide a framework for achieving the 2030 target. The updated Scoping Plan is expected to be completed and adopted by ARB in 2017 (ARB, AB 32 Scoping Plan, 2017).

For more information on the Senate and Assembly Bills, Executive Orders, and reports discussed above, and to view reports and research referenced above, please refer to the following websites: www.climatechange.ca.gov and www.arb.ca.gov/cc/cc.htm.

California Environmental Quality Act

Pursuant to the requirements of SB 97, the Resources Agency has adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines provide general 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. To date, a variety of air districts have adopted quantitative significance thresholds for GHGs.

Local Regulations

The San Bernardino County Regional Greenhouse Gas Reduction Plan provided San Bernardino Associated Governments (SANBAG) and the 21 participating cities with an inventory of GHG emissions, targets, and reduction strategies for each City. The City of Chino Hills has not adopted a Climate Action Plan (CAP); however, Chino Hills is included in the San Bernardino Regional Greenhouse Gas Reduction Plan. This reduction plan also summarizes the actions that each city has selected in order to reduce GHG emissions, and each city's progress towards their selected GHG reduction goal (SANBAG, San Bernardino County Regional Greenhouse Gas Reduction Plan, 2014).

The City of Chino Hills selected a goal to reduce emissions to a level that is 20 percent below its projected emissions level in 2020. The City will meet and exceed this goal subject to reduction measures that are technologically feasible and cost-effective per AB 32 through a combination of State (92 percent) and local (8 percent) efforts. The City actually exceeds this goal with only state/county level actions (112 percent of goal), but has committed to additional local measures and to support applicable regional measures. Additional reduction is achieved through local measures including solar installation for existing housing, equipment upgrades at wastewater treatment plants, and SB X7-7 for water reduction. The City's emissions target for 2020, which has already been achieved, is 384,542 MT CO_2e (SANBAG, San Bernardino County Regional Greenhouse Gas Reduction Plan, 2014). The Chino Hills General Plan 2015 includes GHG related policies. The City's General Plan includes the following goals and associated policies related to GHG emissions:

Goal CN-3: Promote sustainable practices that conserve natural resources and reduce greenhouse gas emissions.

- **Policy CN-3.1:** Endorse green building design in new and existing construction.
  - **Action CN-3.1.1:** Implement green building policies that promote increased use of energy efficiency, alternative energy, recycled materials, renewable resources, local materials, water efficiency, and pollution reduction.
  - **Action CN-3.1.2:** Establish programs that encourage homeowners to reduce energy consumption.
  - **Action CN-3.1.3:** Seek available funding sources that can be applied toward green building programs.
  - **Actions CN-3.1.4:** Coordinate with state and regional agencies to ensure that alternative energy facilities are compatible with Chino Hills' natural and built environment.
- **Policy CN-3.2.6:** Develop and implement a Climate Action Plan.
  - **Action CN-3.2.1:** Reduce greenhouse gas emissions in City operations.
  - **Action CN-3.2.2:** Power city vehicles and equipment with reduced carbon dioxide emissions fuels.
  - **Action CN-3.2.3:** Provide Climate Action Plan information and resources to the Chino Hills community.

3.2 Impact Analysis

Significance Thresholds

Based on Appendix G of the State CEQA Guidelines, impacts related to GHG emissions from the project would be significant if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

In guidance provided by the SCAQMD's GHG CEQA Significance Threshold Working Group in September 2010, SCAQMD considered a tiered approach to determine the significance of residential and commercial projects. The draft tiered approach is outlined in meeting minutes dated September 29, 2010.

> **Tier 1** - If the project is exempt from further environmental analysis under existing statutory or categorical exemptions, there is a presumption of less than significant impacts with respect to climate change. If not, then the Tier 2 threshold should be considered.
>
> **Tier 2** - Consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines section 15064(h)(3),

15125(d) or 15152(a). Under this Tier, if the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If there is not an adopted plan, then a Tier 3 approach would be appropriate.

Tier 3 - Establishes a screening significance threshold level to determine significance. The Working Group has provided a recommendation of 3,000 metric tons (MT) of CO_2e per year for mixed use projects.

Tier 4 - Establishes a service population threshold to determine significance. The Working Group has provided a recommendation of 4.8 MT of CO_2e per year for land use projects.

Because the City of Chino Hills has not adopted a qualified GHG reduction plan, the proposed project is evaluated based on the SCAQMD's recommended Tier 3 significance threshold of 3,000 MT of CO_2e per year. The Tier 3 screening level threshold is intended to assess small and average sized projects and is the most appropriate threshold for the proposed project.

This analysis is based on the methodologies recommended by the California Air Pollution Control Officers Association [CAPCOA] (2008) *CEQA and Climate Change* white paper. The analysis focuses on CO_2, N_2O, and CH_4 as these are the GHG emissions that onsite development would generate in the largest quantities.

Study Methodology

CO_2, CH_4, and N_2O emissions were calculated to identify the magnitude and nature of the project's potential GHG emissions and environmental effects. The analysis focuses on CO_2, CH_4, and N_2O because these make up 98.9 percent of all GHG emissions by volume (IPCC 2007) and are the GHG emissions that the project would emit in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis, but because the project is a residential development, the quantity of fluorinated gases would not be significant since fluorinated gases are primarily associated with industrial processes. Emissions of all GHGs are converted into their equivalent GWP in MT CO_2e. Small amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would also be emitted; however, these other GHGs would not substantially add to the total GHG emissions. Calculations are based on the methodologies discussed in the CAPCOA *CEQA and Climate Change* white paper (CAPCOA, CEQA and Climate Change, 2008) and included the use of the California Climate Action Registry (CCAR) *General Reporting Protocol* (CCAR, General Reporting Protocol, 2009).

GHG emissions associated with the project were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.1 (Appendix A).

Operational Emissions

CalEEMod calculates operational emissions from the proposed project, which include CO_2, N_2O, and CH_4. Energy-related emissions are from electricity and natural gas use. The emissions factors for natural gas combustion are based on EPA's AP-42, (Compilation of Air Pollutant Emissions Factors) and CCAR. Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (SCAQMD, CalEEMod User's Guide, 2016).

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from ARB, U.S. EPA, and district supplied emission factor values (SCAQMD, CalEEMod User's Guide, 2016).

Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (SCAQMD, CalEEMod User's Guide, 2016). Waste disposal rates by land use and overall composition of

municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Emissions from water and wastewater use calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Southern California.

For mobile sources, CO_2 and CH_4 emissions from vehicle trips to and from the project site were quantified using CalEEMod. Because CalEEMod does not calculate N_2O emissions from mobile sources, N_2O emissions were quantified using the CCAR *General Reporting Protocol* (2009) direct emissions factors for mobile combustion (see Appendix A for calculations). The estimate of total daily trips associated with the project was based on CalEEMod defaults. Emission rates for N_2O emissions were based on the vehicle fleet mix output generated by CalEEMod and the emission factors found in the CCAR *General Reporting Protocol*.

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the *CEQA and Climate Change* white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA, CEQA and Climate Change, 2008). In accordance with SCAQMD's recommendation, GHG emissions from construction of the project are amortized over a 30-year period (the assumed life of the project) and added to annual operating emissions.

Construction of the proposed project would generate temporary GHG emissions primarily due to the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling. CalEEMod was used to estimate emissions associated with the construction period, based on the construction schedule supplied by the project applicant. Complete results from CalEEMod and assumptions can be viewed Appendix A.

The volume of demolition material was estimated based on the square footage and height of the buildings to be demolished. The acres graded were estimated in CalEEMod based on the number of passes that would need to occur on the project site for grading. The construction schedule was based on the schedule supplied by the project applicant, and the architectural coating phase was changed to overlap with building construction, representing a more realistic construction practices.

Project Impacts

The following summarizes project emissions and compares calculated emissions to the recommended GHG emissions threshold of 3,000 MT CO_2e/year.

Construction Emissions

For the purpose of this analysis, it is assumed that construction activity would occur over a period of approximately five years, with completion by the end of 2023 and full operation by the start of 2024. As shown in Table 7, construction activity for the project would generate an estimated 1,778 MT of CO_2e. When amortized over a 30-year period, construction of the project would generate about 59 MT of CO_2e per year.

Table 7 Estimated Construction Emissions of Greenhouse Gases

Construction Year	Annual Emissions MT CO_2e
2018	240.1
2019	366.8
2020	391.2
2021	179.8
2022	325.1
2023	275.2
Total	1,778.2 metric tons
Amortized over 30 years	**59.3 metric tons/year**

See Appendix A for CalEEMod results.

Combined Construction, Stationary, and Mobile Source Emissions

Table 8 combines the construction, operational, and mobile GHG emissions associated with development of the project. As shown, annual emissions from the proposed project would total approximately 536 MT of CO_2e. These emissions do not exceed the 3,000 MT per year threshold.

Table 8 Combined Annual Emissions MT CO2e/year

Emission Source	Project Emissions
Construction	59.3
Operational	
Area	0.5
Energy	167.5
Solid Waste	47.8
Water	31.3
Mobile	
CO_2 and CH_4	409.3
N_2O	20.7
Minus Existing Operational	200.6
Net Total	**535.8 metric tons**
SCAQMD Threshold	*3,000*
Exceeds Threshold?	No

Source: Calculations were made in CalEEMod, see Appendix A for full model output. Values have been rounded.

Consistency with GHG Reduction Plans and Policies

Although the City of Chino Hills has not adopted a local CAP or another form of a GHG Reduction Plan, there are a number of General Plan policies that were established to reduce the citywide levels of GHG

over time, which were summarized under Local Regulations above. The project would be consistent with the San Bernardino County Regional Greenhouse Gas Reduction Plan, because the City of Chino Hills has already achieved the 20 percent below 1990 levels by 2020 with State and local plans and measures. The proposed project is consistent with pertinent General Plan policies, specifically Policy CN-3.1 where the City should endorse green building design in new and existing construction. The design and implementation of the proposed project would comply with Cal Green Building Standards, which includes measures to reduce emissions. The project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/ L. Table 9 illustrates the project's consistency with relevant goals and strategies embodied in Chapter 5, *On the Road to Greater Mobility and Sustainable Growth,* of the 2016 RTP/SCS (SCAG, RTP/SCS, 2016).

Table 9 Consistency with Applicable SCAG RTP/SCS GHG Emission Reduction Strategies

Reduction Strategy	Project Consistency
Land Use Actions and Strategies	
Focus new growth around transit The 2016 RTP/SCS land use pattern reinforces the trend of focusing growth in the region's High Quality Transit Areas (HQTAs). Concentrating housing and transit in conjunction concentrates roadway repair investments, leverages transit and active transportation investments, reduces regional life cycle infrastructure costs, improves accessibility, avoids greenfield development, and has the potential to improve public health and housing affordability. HQTAs provide households with alternative modes of transport that can reduce VMT and GHG emissions.	**Consistent** Although the primary use of the proposed project would be private-institutional, the project would also include a residential use (monk dormitory). The proposed project would be approximately 0.4 mile west from a bus stop and would include bicycle parking as well as parking for clean air vehicles. This would incentivize modes of transport that reduce both VMT and GHG emissions.
Plan for growth around livable corridors The Livable Corridors strategy seeks to create neighborhood retail nodes that would be walking and biking destinations by integrating three different planning components: 1. Transit improvements 2. Active transportation improvements (i.e. improved safety for walking and biking) 3. Land use policies that include the development of mixed-use retail centers at key nodes and better integrate different types of ritual uses.	**Consistent** The proposed project would be located in an urban area and in close proximity to commercial and residential uses. The site is transit-oriented as it is located approximately 0.4 miles west form a bus stop, which provides for public access to retail, commercial uses, and services throughout the City of Chino Hills. The project would also provide bicycle racks, which would incentivize greater use of alternative transportation to access public transit. As such, temple patrons and monks residing on Temple grounds would have accessibility to public transit.
Provide more options for short trips 38 percent of all trips in the SCAG region are less than three miles. The 2016 RTP/SCS provides two strategies to promote the use of active transport for short trips. Neighborhood Mobility Areas are meant to reduce short trips in a suburban setting, while "complete communities" support the creation of mixed-use districts in strategic growth areas and are applicable to an urban setting.	**Consistent** The proposed project would involve construction of a religious facility adjacent to residential development and approximately 0.4 mile west from a bus stop. The project would also include parking for clean air vehicles as well as bicycle parking. As such, alternative means of transportation (i.e. biking, walking, and busing) would be available for accessibility to the project site.
Transportation Strategies	
Preserve our existing transit system Ensuring that the existing transportation system is operating efficiently is critical for the success of HQTAs, Livable Corridors, and other land use strategies outlined in the 2016 RTP/SCS.	**Consistent** The project site is located in an area surrounded by existing development. The proposed project would be infill development near existing transit roadways; however, construction is not expected to result in temporary roadblocks.

Reduction Strategy	Project Consistency
Transit Initiatives	
Develop first-mile/last-mile strategies on a local level to provide an incentive for making trips by transit, bicycling, walking, or neighborhood electric vehicle or other ZEV options.	**Consistent** The proposed project would be located approximately 0.4 mile west of a bus stop and would include bicycle parking, which would incentivize greater use of alternative transportation to access public transit.
Other Initiatives	
Reduce emissions resulting from a project through implementation of project features, project design, or other measures. Incorporate design measures to reduce energy consumption and increase use of renewable energy.	**Consistent** The design and implementation of the proposed project would comply with CALGreen Building Standards, which includes measures to reduce emissions. The proposed project would also include parking for clean air vehicles as well as several racks of bicycle parking. The project would also comply with SCAQMD Rule 1113 that limits ROGs from building architectural coatings to 50 g/ L.

Source: SCAG, RTP/SCS, 2016.

In September 2016, SB 32 was signed into law, formally codifying the 40 percent GHG emission reduction target adopted by Governor Brown in April 2015 through an executive order (B-30-15) into California legislation. SB 32 became effective on January 1, 2017 and requires the ARB to develop technologically feasible and cost effective regulations to achieve the targeted 40 percent GHG emission reduction. The ARB is currently working to update the Scoping Plan to provide a framework for achieving the 2030 target. While the current San Bernardino County Regional Greenhouse Gas Reduction Plan does not have a 2030 target, Chino Hills does demonstrate a 2020 reduction which is 7% greater than that required by AB 32. As such, Chino Hills has shown substantial progress towards meeting the 2030 target and when combined with state reduction strategies will result in a fair share contribution towards meeting the states 2030 goal. Furthermore, this project has shown consistency with the applicable RTP/SCS GHG reduction strategies. Therefore, the project would not conflict with the State's 2030 GHG reduction goals as outlined in SB 32.

The project would be constructed in accordance with the California Green Business Standards, which require energy efficiency, water efficiency, and material conservation and resource efficiency. The project proposed project would include bicycle parking to support an alternative means of transportation to the project site. The project would also include landscaped areas open to all patrons of the Buddhist Temple and would reduce trips to parks in the vicinity.

The project would be consistent with applicable land use and zoning designations upon approval of General Plan Amendment 13GPA01 to change the project site from Commercial to Institutional, and Zone Change 13ZC01 to change the zoning designation from Neighborhood Commercial to Institutional-Private. The project would not conflict with any State regulations intended to reduce GHG emissions statewide, and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the project would not conflict with any plan, policy, or legislation related to GHG emissions.

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4 References

Association of Environmental Professionals (AEP). 2017. CEQA Statute and Guidelines. Accessed February 2017 at: http://www.califaep.org/images/ceqa/statute-guidelines/2017/CEQA_Handbook_2017_with_covers.pdf.

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA).

California Air Resources Board (ARB). 2012. Ambient Air Quality Standards. Accessed February 2017 at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

_____. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Accessed January 2017 at: https://www.arb.ca.gov/ch/handbook.pdf.

_____. 2011. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles. Accessed February 2017 at: http://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf

_____. 2015. 2012, 2013, & 2014 Annual Air Quality Data Summaries. Accessed October 2016 at: http://www.arb.ca.gov/adam/topfour/topfour1.php.

_____. 2015a. California Greenhouse Gas Emission Inventory – 2015 Edition. Accessed February 2017 at: http://www.arb.ca.gov/cc/inventory/data/data.htm

_____. 2015b. Frequently Asked Questions About Executive Order B-30-15. Accessed February 2017 at: http://www.arb.ca.gov/newsrel/2030_carbon_target_adaptation_faq.pdf

_____. 2017. AB 32 Scoping Plan Website. Accessed February 2017 at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

California Climate Action Registry (CCAR). 2009. General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1.

California Climate Change Center (CCCC). 2009. The Impacts of Sea-Level Rise on the California Coast.

_____. 2006. California Climate Change Center. Climate Scenarios for California.

California Department of Water Resources (DWR). 2008. Managing an Uncertain Future: Climate Change Adaption Strategies for California's Water.

California Energy Commission (CEC). 2009. Environmental Health and Equity Impacts from Climate Change and Mitigation Policies in California: A Review of the Literature.

California Environmental Protection Agency (CalEPA), March 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

_____. 2010. Climate Action Team Biennial Report. Final Report.

Chino Hills, City of. 2015. Final Program Environmental Impact Report General Plan Update. State Clearinghouse No. 2013051082. Accessed February 2017 at: http://www.chinohills.org/DocumentCenter/View/11274

_____. 2015b. *City of Chino Hills General Plan*. Accessed February 2017 at: https://www.chinohills.org/DocumentCenter/View/11275

Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

_____. 2013. Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

_____. 2014. Summary for Policymakers. In: Climate Change 2014, Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Linscott, Law & Greenspan, Engineers Inc. Traffic Impact Analysis Report: Founders Village, Chino Hills, California. 2017.

Parmesan, C. August. 2006. Ecological and Evolutionary Responses to Recent Climate Change.

San Bernardino Associated Governments (SANBAG). 2014. San Bernardino County Regional Greenhouse Gas Reduction Plan. Accessed February 2017 at: http://www.sanbag.ca.gov/planning2/greenhousegas/Final_SBCRegionalGHGReduction.pdf

Southern California Association of Governments (SCAG). 2016. Regional Transportation Plan/Sustainable Communities Strategy 2016-2040 (RTP/SCS), Demographics and Growth Forecast Appendix. 2016. Accessed February 2017 at: http://rtpscs.scag.ca.gov/Pages/default.aspx.

South Coast Air Quality Management District (SCAQMD). 1993. CEQA Air Quality Handbook. Tables A9-11-A and A9-12-A.

_____. 2003. Final Localized Significance Threshold Methodology. Revised July 2008.

_____. 2009. Appendix C: Mass Rate Look-up Tables. Accessed February 2017 at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

_____. 2013. Final 2012 Air Quality Management Plan. 2013. Accessed February 2017 at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan

_____. 2017. California Emission's Estimator Model (CalEEMod). 2016. CalEEMod User's Guide. Accessed February 2017 at: http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2.

United States Environmental Protection Agency (U.S. EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. U. S. EPA #430-R-11-005. Accessed February 2017 at: https://www.epa.gov/sites/production/files/2016-04/documents/us-ghg-inventory-2016-chapter-executive-summary.pdf

World Meteorological Organization (WMO). 2013. A summary of current and climate change findings and figures.

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Air Quality and Greenhouse Gas Study Appendix A

CalEEMod Results and Equations

New Buddhist Temple (Phase I Construction Emissions)

South Coast, Summary Report

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.59	Acre	0.59	25,871.00	0
Parking Lot	53.55	1000sqft	1.23	53,549.00	0
Place of Worship	5.00	1000sqft	0.64	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics -

Land Use - Acreage and square feet based on project site plans.

Construction Phase - Phase I is estimated to last 3 years. Defaults changed to approximate 3-year development.

Grading - Approximately 2.5 acres of site preparation and 0.478 acres graded (based on site plans)

Architectural Coating - Per SCAQMD Rule 1113, which requires use of low-VOC paint (50 g/L for nonflat coatings).

Vehicle Trips - City park denotes landspaped areas (decorative lawns and gardens), no additional trips generated.

Area Coating - Per SCAQMD Rule 1113, use of low-VOC paint (50 g/L) for both residential and non-residential.

Construction Off-road Equipment Mitigation -

Area Mitigation -

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

New Buddhist Temple (Phase I) - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2018	Site Preparation	1.9463 W	23.6539 W	13.1463 S	0.0255 S	1.1024 S	0.9084 S	1.9463 W	23.6539 W	13.1463 S	0.0255 S	1.0703 S	0.9049 S
2018	Grading	2.2101 W	24.3318 W	10.8807 S	0.0219 S	7.3109 S	4.4164 S	2.2101 W	24.3318 W	10.8807 S	0.0219 S	3.9944 S	2.5953 S
2018	Building Construction	3.1805 W	22.5603 W	17.9011 S	0.0329 S	1.7540 W	1.3496 W	3.1805 W	22.5603 W	17.9011 S	0.0329 S	1.7540 W	1.3496 W
2019	Building Construction	2.8016 W	20.6500 W	17.2185 S	0.0328 S	1.5848 W	1.1876 W	2.8016 W	20.6500 W	17.2185 S	0.0328 S	1.5848 W	1.1876 W
2020	Building Construction	2.5092 W	19.0241 W	16.6824 S	0.0326 S	1.4394 W	1.0483 W	2.5092 W	19.0241 W	16.6824 S	0.0326 S	1.4394 W	1.0483 W
2021	Building Construction	2.2478 W	17.4700 W	16.2026 S	0.0325 S	1.3038 W	0.9180 W	2.2478 W	17.4700 W	16.2026 S	0.0325 S	1.3038 W	0.9180 W
2020	Architectural Coating	0.4548 W	1.7072 W	2.1167 S	3.7700e-003 S	0.1898 S	0.1322 S	0.4548 W	1.7072 W	2.1167 S	3.7700e-003 S	0.1898 S	0.1322 S
2021	Architectural Coating	0.4292 W	1.5478 W	2.0804 S	3.7500e-003 S	0.1729 S	0.1154 S	0.4292 W	1.5478 W	2.0804 S	3.7500e-003 S	0.1729 S	0.1154 S
2021	Paving	1.1821 W	10.6928 W	12.3388 S	0.0195 S	0.7515 S	0.5827 S	1.1821 W	10.6928 W	12.3388 S	0.0195 S	0.7515 S	0.5827 S
	Peak Daily Total	3.1805 W	24.3318 W	17.9011 S	0.0329 S	7.3109 S	4.4164 S	3.1805 W	24.3318 W	17.9011 S	0.0329 S	3.9944 S	2.5953 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	0.1316 S	6.0000e-005 S	6.0800e-003 S	0.0000 S	2.0000e-005 S	2.0000e-005 S	0.1316 S	6.0000e-005 S	6.0800e-003 S	0.0000 S	2.0000e-005 S	2.0000e-005 S
On-Site	Energy	4.8100e-003 S	0.0437 S	0.0367 S	2.6000e-004 S	3.3200e-003 S	3.3200e-003 S	4.8100e-003 S	0.0437 S	0.0367 S	2.6000e-004 S	3.3200e-003 S	3.3200e-003 S
Off-Site	Mobile	0.3069 S	1.3969 W	3.3832 S	0.0109 S	0.8411 W	0.2323 W	0.3069 S	1.3969 W	3.3832 S	0.0109 S	0.8411 W	0.2323 W
	Peak Daily Total	0.4434 S	1.4407 W	3.4261 S	0.0111 S	0.8444 W	0.2356 W	0.4434 S	1.4407 W	3.4261 S	0.0111 S	0.8444 W	0.2356 W
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

Annual GHG

Annual GHG

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2018	238.6518	0.0561	0.0000	240.0552	238.6516	0.0561	0.0000	240.0550
Construction	2019	365.3144	0.0616	0.0000	366.8534	365.3141	0.0616	0.0000	366.8531
Construction	2020	389.6339	0.0613	0.0000	391.1675	389.6335	0.0613	0.0000	391.1671
Construction	2021	59.6646	0.0168	0.0000	60.0841	59.6645	0.0168	0.0000	60.0841
Operational	2020	113.2546	0.3527	5.8060e-004	122.2448	113.2546	0.3527	5.8060e-004	122.2448
	Total								
	Significance Threshold								
	Exceed Significance?								

New Buddhist Temple (Phase 2 Construction Emissions)

South Coast, Summary Report

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	0.14	Acre	0.14	6,029.00	0
Apartments Low Rise	28.00	Dwelling Unit	0.34	9,025.00	28

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics -

Land Use - Lot acreage, square feet, and population (28 one-bedroom units) based on site plans.

Construction Phase - Phase 2 is estimated to last 1.5 years. Defualts changed to begin after Phase I.

Off-road Equipment -

Off-road Equipment -

Grading - Entire Phase 2 acreage for site preparation.

Architectural Coating - Per SCAQMD Rule 1113, use of low-VOC (50 g/L) paint.

Vehicle Trips - City park represents landscaped areas (decorative lawns and gardens), no trip generation.

Woodstoves - Assumed no woodstoves/fireplaces per site plans.

Area Coating - Per SCAQMD Rule 1113, use of low-VOC paint (50 g/L) for residential and non-residential uses.

Construction Off-road Equipment Mitigation -

Area Mitigation -

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

New Buddhist Temple (Phase 2) - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2021	Site Preparation	0.6633 W	7.8354 W	4.2152 S	0.0103 S	0.3718 S	0.2924 S	0.6633 W	7.8354 W	4.2152 S	0.0103 S	0.3630 S	0.2915 S
2021	Grading	0.8427 W	7.2830 W	7.9446 S	0.0131 S	1.2727 S	0.8328 S	0.8427 W	7.2830 W	7.9446 S	0.0131 S	0.8587 S	0.6052 S
2021	Building Construction	0.8929 W	8.4361 W	8.2203 S	0.0150 S	0.7329 W	0.4898 W	0.8929 W	8.4361 W	8.2203 S	0.0150 S	0.7329 W	0.4898 W
2022	Building Construction	0.7972 W	7.4508 W	8.0394 S	0.0149 S	0.6572 W	0.4201 W	0.7972 W	7.4508 W	8.0394 S	0.0149 S	0.6572 W	0.4201 W
2022	Paving	0.7250 W	5.9662 W	7.6598 S	0.0132 S	0.4987 S	0.3305 S	0.7250 W	5.9662 W	7.6598 S	0.0132 S	0.4987 S	0.3305 S
2022	Architectural Coating	0.7491 W	1.4220 W	1.9872 S	3.5100e-003 S	0.1380 S	0.0969 S	0.7491 W	1.4220 W	1.9872 S	3.5100e-003 S	0.1380 S	0.0969 S
	Peak Daily Total	0.8929 W	8.4361 W	8.2203 S	0.0150 S	1.2727 S	0.8328 S	0.8929 W	8.4361 W	8.2203 S	0.0150 S	0.8587 S	0.6052 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	0.2627 S	0.0266 S	2.3106 S	1.2000e-004 S	0.0128 S	0.0128 S	0.2627 S	0.0266 S	2.3106 S	1.2000e-004 S	0.0128 S	0.0128 S
On-Site	Energy	0.0164 S	0.1400 S	0.0596 S	8.9000e-004 S	0.0113 S	0.0113 S	0.0164 S	0.1400 S	0.0596 S	8.9000e-004 S	0.0113 S	0.0113 S
Off-Site	Mobile	0.3150 S	1.3650 W	4.3199 S	0.0169 S	1.4678 W	0.4004 W	0.3150 S	1.3650 W	4.3199 S	0.0169 S	1.4678 W	0.4004 W
	Peak Daily Total	0.5941 S	1.5316 W	6.6900 S	0.0179 S	1.4919 W	0.4245 W	0.5941 S	1.5316 W	6.6900 S	0.0179 S	1.4919 W	0.4245 W
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

New Buddhist Temple (Phase 2) - South Coast Air Basin, Summary Report

Annual GHG

Annual GHG

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2021	118.9094	0.0300	0.0000	119.6599	118.9093	0.0300	0.0000	119.6598
Construction	2022	104.5763	0.0235	0.0000	105.1644	104.5762	0.0235	0.0000	105.1643
Operational	2023	344.4347	0.2289	2.4494e-003	350.8872	344.4347	0.2289	2.4494e-003	350.8872
	Total								
	Significance Threshold								
	Exceed Significance?								

New Buddhist Temple (Phase 3 Construction Emissions)

South Coast, Summary Report

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	2.14	Acre	2.14	93,018.00	0
Parking Lot	62.74	1000sqft	1.44	62,737.00	0
Place of Worship	9.37	1000sqft	0.78	9,367.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics -

Land Use - Lot acreage and square feet based on site plans.

Construction Phase - Architectual coating changed to overlap with building construction.

Off-road Equipment -

Off-road Equipment -

Grading - Entire Phase 3 site prepared. No grading information.

Demolition - Existing building square feet based on project information.

Architectural Coating - Per SCAQMD Rule 1113, use of low-VOC (50g/L) paint.

Vehicle Trips - City park represents landscaped areas (decorative lawns and gardens), no trip generation.

Woodstoves -

Area Coating - Per SCAQMD Rule 1113, use of low-VOC (50 g/L) for residential and non-residential uses.

Construction Off-road Equipment Mitigation -

Area Mitigation -

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

New Buddhist Temple (Phase 3) - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2022	Demolition	2.7194 W	26.2576 W	21.2311 S	0.0420 S	1.8913 W	1.2790 W	2.7194 W	26.2576 W	21.2311 S	0.0420 S	1.6479 W	1.2422 W
2022	Site Preparation	3.2482 W	33.1323 W	20.3228 S	0.0400 S	20.8054 S	11.5687 S	3.2482 W	33.1323 W	20.3228 S	0.0400 S	10.3608 S	6.0520 S
2022	Grading	2.0137 W	20.8958 W	15.7936 S	0.0313 S	7.1318 S	4.2214 S	2.0137 W	20.8958 W	15.7936 S	0.0313 S	3.8197 S	2.4008 S
2022	Building Construction	2.0804 W	18.2509 W	19.3537 S	0.0411 S	1.7633 W	1.0251 W	2.0804 W	18.2509 W	19.3537 S	0.0411 S	1.7633 W	1.0251 W
2023	Building Construction	1.9107 W	16.3954 W	18.9930 S	0.0406 S	1.6514 W	0.9198 W	1.9107 W	16.3954 W	18.9930 S	0.0406 S	1.6514 W	0.9198 W
2023	Paving	1.2095 W	8.8393 W	12.8317 S	0.0210 S	0.6608 S	0.4632 S	1.2095 W	8.8393 W	12.8317 S	0.0210 S	0.6608 S	0.4632 S
2023	Architectural Coating	1.4076 W	1.3373 W	2.2600 S	4.4100e-003 S	0.2284 S	0.1133 S	1.4076 W	1.3373 W	2.2600 S	4.4100e-003 S	0.2284 S	0.1133 S
	Peak Daily Total	3.2482 W	33.1323 W	21.2311 S	0.0420 S	20.8054 S	11.5687 S	3.2482 W	33.1323 W	21.2311 S	0.0420 S	10.3608 S	6.0520 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	0.2261 S	7.0000e-005 S	7.5700e-003 S	0.0000 S	3.0000e-005 S	3.0000e-005 S	0.2261 S	7.0000e-005 S	7.5700e-003 S	0.0000 S	3.0000e-005 S	3.0000e-005 S
On-Site	Energy	9.0100e-003 S	0.0819 S	0.0688 S	4.9000e-004 S	6.2300e-003 S	6.2300e-003 S	9.0100e-003 S	0.0819 S	0.0688 S	4.9000e-004 S	6.2300e-003 S	6.2300e-003 S
Off-Site	Mobile	0.4294 S	1.8261 W	4.7053 S	0.0182 S	1.5687 W	0.4283 W	0.4294 S	1.8261 W	4.7053 S	0.0182 S	1.5687 W	0.4283 W
	Peak Daily Total	0.6645 S	1.9080 W	4.7817 S	0.0187 S	1.5750 W	0.4345 W	0.6645 S	1.9080 W	4.7817 S	0.0187 S	1.5750 W	0.4345 W
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

Annual GHG

Annual GHG

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2022	218.8010	0.0433	0.0000	219.8842	218.8008	0.0433	0.0000	219.8840
Construction	2023	274.1166	0.0472	0.0000	275.2968	274.1164	0.0472	0.0000	275.2966
Operational	2024	193.9014	0.6602	1.0433e-003	210.7183	193.9014	0.6602	1.0433e-003	210.7183
	Total								
	Significance Threshold								
	Exceed Significance?								

New Buddhist Temple (Proposed) - Operational Only

South Coast, Summary Report

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	14.37	1000sqft	0.33	14,367.00	0
Parking Lot	116.29	1000sqft	2.67	116,286.00	0
City Park	2.87	Acre	2.87	124,918.00	0
Apartments Low Rise	28.00	Dwelling Unit	1.43	9,025.00	28

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics -

Land Use - Lot acreage and square feet per site plans. Population of dormitory based on one-bedroom, one-bed units.

Construction Phase - 5-year schedule estimated per project information.

Demolition -

Architectural Coating - Per SCAQMD Rule 1113, (Use of 50 g/L) low-VOC paint.

Vehicle Trips - City park = landscaping. Would not generate separate trips.

Woodstoves - Assuming no woodstoves per site plans and dormitory residences.

Area Coating - Per SCAQMD Rule 1113, use of low-VOC paint (50 g/L)

Construction Off-road Equipment Mitigation - SCAQMD Rule 403.

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

New Buddhist Temple (Proposed) - Operational Only - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2018	Demolition	3.8260 W	39.0398 W	23.1794 S	0.0423 S	2.5794 W	1.9276 W	3.8260 W	39.0398 W	23.1794 S	0.0423 S	2.3094 W	1.8867 W
2018	Site Preparation	4.6682 W	48.2749 W	23.3769 S	0.0402 S	20.8460 S	12.3563 S	4.6682 W	48.2749 W	23.3769 S	0.0402 S	9.8256 S	6.2986 S
2018	Grading	2.8611 W	30.7360 W	17.3274 S	0.0315 S	8.2727 S	4.8404 S	2.8611 W	30.7360 W	17.3274 S	0.0315 S	4.2757 S	2.7862 S
2019	Grading	2.6604 W	28.4040 W	16.9653 S	0.0314 S	8.1187 S	4.6987 S	2.6604 W	28.4040 W	16.9653 S	0.0314 S	4.1218 S	2.6446 S
2019	Building Construction	3.2266 W	26.7287 W	24.1711 S	0.0536 S	3.0546 W	1.7187 W	3.2266 W	26.7287 W	24.1711 S	0.0536 S	3.0546 W	1.7187 W
2020	Building Construction	2.9077 W	24.3501 W	23.2184 S	0.0531 S	2.8705 W	1.5455 W	2.9077 W	24.3501 W	23.2184 S	0.0531 S	2.8705 W	1.5455 W
2021	Building Construction	2.6242 W	22.1152 W	22.4276 S	0.0525 S	2.6970 W	1.3820 W	2.6242 W	22.1152 W	22.4276 S	0.0525 S	2.6970 W	1.3820 W
2022	Building Construction	2.3863 W	20.0430 W	21.7986 S	0.0519 S	2.5459 W	1.2405 W	2.3863 W	20.0430 W	21.7986 S	0.0519 S	2.5459 W	1.2405 W
2022	Architectural Coating	7.2791 W	1.4789 W	2.7164 S	5.7500e-003 S	0.3744 S	0.1607 S	7.2791 W	1.4789 W	2.7164 S	5.7500e-003 S	0.3744 S	0.1607 S
2022	Paving	1.5177 W	11.1655 W	15.1013 S	0.0244 S	0.7368 S	0.5681 S	1.5177 W	11.1655 W	15.1013 S	0.0244 S	0.7368 S	0.5681 S
2023	Paving	1.4439 W	10.2284 W	15.0652 S	0.0244 S	0.6790 S	0.5149 S	1.4439 W	10.2284 W	15.0652 S	0.0244 S	0.6790 S	0.5149 S
	Peak Daily Total	7.2791 W	48.2749 W	24.1711 S	0.0536 S	20.8460 S	12.3563 S	7.2791 W	48.2749 W	24.1711 S	0.0536 S	9.8256 S	6.2986 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

New Buddhist Temple (Proposed) - Operational Only - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	0.6185 S	0.0267 S	2.3227 S	1.2000e-004 S	0.0129 S	0.0129 S	0.6185 S	0.0267 S	2.3227 S	1.2000e-004 S	0.0129 S	0.0129 S
On-Site	Energy	0.0302 S	0.2657 S	0.1651 S	1.6500e-003 S	0.0209 S	0.0209 S	0.0252 S	0.2217 S	0.1395 S	1.3700e-003 S	0.0174 S	0.0174 S
Off-Site	Mobile	0.9573 S	4.1279 W	11.2803 S	0.0444 S	3.8733 W	1.0570 W	0.9573 S	4.1279 W	11.2803 S	0.0444 S	3.8733 W	1.0570 W
	Peak Daily Total	1.6060 S	4.4203 W	13.7681 S	0.0461 S	3.9070 W	1.0907 W	1.6010 S	4.3763 W	13.7425 S	0.0458 S	3.9035 W	1.0872 W
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

Annual GHG

Annual GHG

New Buddhist Temple (Proposed) - Operational Only - South Coast Air Basin, Summary Report

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2018	420.6548	0.1224	0.0000	423.7156	420.6543	0.1224	0.0000	423.7152
Construction	2019	520.5478	0.0984	0.0000	523.0067	520.5474	0.0984	0.0000	523.0063
Construction	2020	613.4021	0.0884	0.0000	615.6127	613.4017	0.0884	0.0000	615.6123
Construction	2021	604.6740	0.0864	0.0000	606.8344	604.6736	0.0864	0.0000	606.8341
Construction	2022	614.0374	0.0871	0.0000	616.2148	614.0370	0.0871	0.0000	616.2144
Construction	2023	40.5819	0.0124	0.0000	40.8910	40.5818	0.0124	0.0000	40.8910
Operational	2024	638.8854	1.2406	4.0733e-003	671.1149	624.2662	1.2402	3.8555e-003	656.4207
	Total								
	Significance Threshold								
	Exceed Significance?								

Greenhouse Gas Emission Worksheet
N20 Mobile Emissions Buddhist Temple (Operational Only)

Annual VMT*: 1,036,429

From CalEEMod 2016 Vehicle Fleet Mix Output:

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)**	CH4 Emission (g/mile)***	N2O Emission Factor (g/mile)**	N2O Emission (g/mile)***
Light Auto	55.3%	0.04	0.02212	0.04	0.02212
Light Truck < 3750 lbs	4.3%	0.05	0.00215	0.06	0.00258
Light Truck 3751-5750 lbs	20.4%	0.05	0.0102	0.06	0.01224
Med Truck 5751-8500 lbs	11.6%	0.12	0.01392	0.2	0.0232
Lite-Heavy Truck 8501-10,000 lbs	1.5%	0.12	0.0018	0.2	0.003
Lite-Heavy Truck 10,001-14,000 lbs	0.6%	0.09	0.00054	0.125	0.00075
Med-Heavy Truck 14,001-33,000 lbs	2.2%	0.06	0.00132	0.05	0.0011
Heavy-Heavy Truck 33,001-60,000 lbs	3.2%	0.06	0.00192	0.05	0.0016
Other Bus	0.2%	0.06	0.00012	0.05	0.0001
Urban Bus	0.2%	0.06	0.00012	0.05	0.0001
Motorcycle	0.5%	0.09	0.00045	0.01	0.00005
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.1%	0.09	0.00009	0.125	0.000125
Total	**100.2%**		**0.05481**		**0.067015**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)***

CH4	25	GWP
N2O	298	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.0695	metric tons N2O	**20.70**	metric tons CO2e
	Project Total:		***20.70***	***metric tons CO2e***

References

* From CalEEMod 2016 results for mobile sources
** Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.
*** California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
**** Global warming potentials from IPCC Fourth Assessment Report

Buddhist Temple in Chino Hills (Existing Uses)

South Coast, Summary Report

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Place of Worship	5.47	1000sqft	0.12	5,470.00	0
Parking Lot	49.00	Space	0.45	19,600.00	0
Apartments Low Rise	5.00	Dwelling Unit	6.73	3,520.00	14

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2017
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics - Modeling emissions of existing uses. Arbitrary "start of construction" date chosen.

Land Use - Acerage (7.3 acres) based on project site plans. Rest of acreage assigned to residential use.

Construction Phase -

Off-road Equipment -

Off-road Equipment - Equipment for grading updated per city supplied information

Trips and VMT -

Demolition -

Grading -

Vehicle Trips -

Woodstoves - Assumed no woodstoves or fireplaces in existing monk dormitory and hall buildings.

Construction Off-road Equipment Mitigation -

Energy Use -

Area Mitigation -

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

Buddhist Temple in Chino Hills (Existing) - South Coast Air Basin, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2016	Demolition	4.4577 W	45.5333 W	24.2867 S	0.0408 S	2.5319 S	2.2473 S	4.4577 W	45.5333 W	24.2867 S	0.0408 S	2.5319 S	2.2473 S
2016	Grading	3.3322 W	35.7593 W	18.2787 S	0.0316 S	8.6235 S	5.1632 S	3.3322 W	35.7593 W	18.2787 S	0.0316 S	8.6235 S	5.1632 S
2016	Building Construction	3.5540 W	29.4485 W	19.6617 S	0.0300 S	2.1722 W	1.9145 W	3.5540 W	29.4485 W	19.6617 S	0.0300 S	2.1722 W	1.9145 W
2017	Building Construction	3.2325 W	27.2718 W	19.1492 S	0.0300 S	1.9833 W	1.7364 W	3.2325 W	27.2718 W	19.1492 S	0.0300 S	1.9833 W	1.7364 W
2017	Paving	2.1025 W	20.7907 W	15.8843 S	0.0247 S	1.3283 S	1.1122 S	2.1025 W	20.7907 W	15.8843 S	0.0247 S	1.3283 S	1.1122 S
2017	Architectural Coating	4.2612 W	2.1996 W	2.0385 S	3.3500e-003 S	0.2072 S	0.1825 S	4.2612 W	2.1996 W	2.0385 S	3.3500e-003 S	0.2072 S	0.1825 S
	Peak Daily Total	4.4577 W	45.5333 W	24.2867 S	0.0408 S	8.6235 S	5.1632 S	4.4577 W	45.5333 W	24.2867 S	0.0408 S	8.6235 S	5.1632 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	1.5301 S	0.1087 S	2.9651 S	6.5100e-003 S	0.3842 S	0.3842 S	0.2199 S	4.9100e-003 S	0.4223 S	2.0000e-005 S	2.2800e-003 S	2.2800e-003 S
On-Site	Energy	8.1900e-003 S	0.0728 S	0.0508 S	4.5000e-004 S	5.6600e-003 S	5.6600e-003 S	8.1900e-003 S	0.0728 S	0.0508 S	4.5000e-004 S	5.6600e-003 S	5.6600e-003 S
Off-Site	Mobile	0.5430 S	2.2898 W	6.2980 S	0.0163 S	1.1902 W	0.3332 W	0.5430 S	2.2898 W	6.2980 S	0.0163 S	1.1902 W	0.3332 W
	Peak Daily Total	2.0813 S	2.4713 W	9.3139 S	0.0233 S	1.5801 W	0.7230 W	0.7711 S	2.3675 W	6.7712 S	0.0168 S	1.1981 W	0.3411 W
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

Buddhist Temple in Chino Hills (Existing) - South Coast Air Basin, Summary Report

Annual GHG

Annual GHG

		Unmitigated				Mitigated			
		CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
GHG Activity	Year	MT/yr							
Construction	2016	220.6755	0.0534	0.0000	222.0109	220.6753	0.0534	0.0000	222.0107
Construction	2017	182.5054	0.0424	0.0000	183.5647	182.5052	0.0424	0.0000	183.5646
Operational	2017	185.6320	0.4291	9.9790e-004	196.6572	184.0803	0.4275	9.6162e-004	195.0553
	Total								
	Significance Threshold								
	Exceed Significance?								

Greenhouse Gas Emission Worksheet
N20 Mobile Emissions Buddhist Temple (Existing Uses)

Annual VMT*: 266,963

From CalEEMod 2016 Vehicle Fleet Mix Output:

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)**	CH4 Emission (g/mile)***	N2O Emission Factor (g/mile)**	N2O Emission (g/mile)***
Light Auto	54.4%	0.04	0.02176	0.04	0.02176
Light Truck < 3750 lbs	4.6%	0.05	0.0023	0.06	0.00276
Light Truck 3751-5750 lbs	19.8%	0.05	0.0099	0.06	0.01188
Med Truck 5751-8500 lbs	12.9%	0.12	0.01548	0.2	0.0258
Lite-Heavy Truck 8501-10,000 lbs	1.9%	0.12	0.00228	0.2	0.0038
Lite-Heavy Truck 10,001-14,000 lbs	0.6%	0.09	0.00054	0.125	0.00075
Med-Heavy Truck 14,001-33,000 lbs	1.9%	0.06	0.00114	0.05	0.00095
Heavy-Heavy Truck 33,001-60,000 lbs	2.7%	0.06	0.00162	0.05	0.00135
Other Bus	0.2%	0.06	0.00012	0.05	0.0001
Urban Bus	0.2%	0.06	0.00012	0.05	0.0001
Motorcycle	0.5%	0.09	0.00045	0.01	0.00005
School Bus	0.1%	0.06	0.000042	0.05	0.000035
Motor Home	0.1%	0.09	0.00009	0.125	0.000125
Total	**99.9%**		**0.055842**		**0.06946**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)***

CH4	25	GWP
N2O	298	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.0185	metric tons N2O	**5.53**	metric tons CO2e
	Project Total:		***5.53***	***metric tons CO2e***

References

* From CalEEMod 2016 results for mobile sources
** Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.
*** California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
**** Global warming potentials from IPCC Fourth Assessment Report

Appendix C

Geotechnical Engineering Evaluation Report

Geo-Advantec Inc.

G *Geotechnical Engineering*

A *Earthquake Engineering*

I *Engineering Geology*

GEOTECHNICAL ENGINEERING EVALUATION REPORT

Buddhist Temple of Chino Hills
2948 Chino Hills Parkway
Sylmar, California

FOR:
Winata Engineering
49 Spanish Lace
Irvine, CA 92620

PREPARED BY:
GEO-ADVANTEC INC.
1453 LOOKOUT COURT, STE 120
UPLAND, CALIFORNIA 91784
PROJECT NO. 1007-12
June 27, 2012

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June 27, 2012
Project No.: 1007-12

Mr. Erik Winata, PE
Winata Engineering
92 Spanish Lace
Irvine, CA

SUBJECT: Geotechnical Engineering Evaluation for:
Proposed Developments at Buddhist Temple of Chino Hills
2948 Chino Hills Parkway
Chino Hills, California

1. INTRODUCTION

Gentlemen:

This report presents the results of a Geotechnical Investigation performed by Geo-Advantec, Inc., (GAI) at the Buddhist Temple of Chino Hills / Wat Thai Temple site, located within City of Chino Hills, California. This Geotechnical evaluation was performed to provide geotechnical information for the design and construction of the proposed developments, as described in the forthcoming sections of this report. This report includes our recommendations for the design and construction of the proposed developments from a geotechnical standpoint.

The recommendations provided within this submittal are based on the results of our field exploration, laboratory testing, and engineering analyses. Our services were performed in general accordance with our Proposal No. 1007-12, dated May 18, 2012.

A vicinity map is presented as Figure A-1, Appendix A. Also a site plan showing the location of the proposed developments has been provided to us. The mentioned plan has been used as a base map to show the location of our borings and is provided as Figure A-2, Appendix A.

Our professional services have been performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the

Professional advice included in this report. This report has been prepared for Winata Engineering Inc., and for the subject project. The report has not been prepared for use by other parties, and may not contain sufficient information for the purposes of other parties or other uses.

2. SITE CONDITIONS

The Wat Thai Temple site is located at Chino Hills, California. Chino Hills Parkway forms the southern boundary of the site. On the west, the property is bonded by Rustic Drive. The northern boundary of the site is formed by the limits of Chino Creek Channel, while other private properties form the eastern boundary of the site. The site is comprised of flatly graded areas that moderately alter in vertical elevations and the general slope of the site is gently descending toward the Chino Creek Channel.

3. PROPOSED DEVELOPMENT

It is our understanding that the proposed development is comprised of construction of a new Buddha Hall Temple structure and three 1-story small to medium size buildings on the site. The Buddha Hall Temple has a footprint area of 3,100 square foot (sf). All the other three buildings are 1-story structures, and will be constructed along the north side of the existing buildings approximately at the center of the site. "Building I" is a 1-story building which will contain offices, classrooms and conference room and will have a 5,775 sf area. "Building II" will serve as the meditation area and would have a footprint area of 3,600 sf. "Building III" is a 1,900 sf building which will include kitchen/pantry and public restrooms. The above given description of the project and our understanding of the proposed development are the basis for the geotechnical recommendations provided in this submittal.

4. SCOPE OF SERVICES

Our scope of services for this project included the followings:

- Perform a site reconnaissance, evaluate general site condition and mark the proposed borings locations for utility clearance;
- Conduct 3 borings within the proposed footprint of the future developments using a hollow stem truck-mounted drilling rig;
- Conduct on shallow boring, about 7 to 8 feet deep, at the designated area and perform percolation test;
- Perform laboratory testing on the selected soils samples obtained from conducted borings;
- Review the field data and the laboratory test results, perform engineering analyses, and prepare a final geotechnical evaluation report for the site which includes our findings and recommendation for the design and construction of the proposed developments from the geotechnical point of view.

5. FIELD EXPLORATION

The field exploration program consisted of performing four borings using a hollow-stem truck-mounted drilling rig and was performed on June 9, 2012. One of the borings, boring B-1, was extended down to 50.5 feet bgs. Two of the borings, borings B-2 and B-3, were originally planned to extend to 25 feet bgs. Boring B-3 was drilled down to 28 feet bgs, while boring B-2 was terminated after two consecutive trails, when at about 3.5 and 6 feet bgs refusal was resulted. The reason for refusal was encountering very hard materials, which is believed to be some large bolder/rocks. Also one shallow boring was conducted on the northeast part of the site, at the introduced location. The purpose of this boring was to determine the percolation rate at the introduced location. The locations of the borings are depicted on Figure A-2, Appendix A.

Bulk and relatively undisturbed samples were obtained from the borings for laboratory examination. Also, Standard Penetration Test (SPT) was performed at regular intervals. The depths, blow counts, field moisture contents, and unit dry densities of the samples are shown on the attached Log of Borings presented in Appendix B of this report.

6. SUBSURFACE CONDITIONS

All of the borings were conducted over the dirt and unpaved areas. As observed in boring B-1, the subsurface soil profile underlying the footprint of the proposed Buddha Hall Temple consists of about 16 feet of sandy silty clays, underlain by a thick layer of sandy lean clay extending down to about 33.5 feet bgs, followed by an about 5-foot thick layer of sandy silty clay extending to about 39 feet bgs. From about 39 to 44.5 feet bgs, a layer of slightly clayey silty sand was encountered. Bedrock material consisting of thinly bedded sandstone was encountered at about 44.5 feet bgs, and continued to the end of the boring, i.e. 50.5 feet bgs. Ground water was encountered at about 42.5 feet bgs. Although the upper 16 feet of the encountered soils appears to be artificial fill materials, the blowcount measures indicate that the layer has very stiff to hard consistency.

During the course of drilling for boring B-2, the auger encountered hard substance, most likely hard cobbles/rock, and advancement of drilling was not possible. Another trial was made for boring B-2 after the boring was relocated for a few feet, and refusal occurred at about 6 feet bgs. The encountered materials from ground level to about 6 feet bgs, consisted of medium dense to hard silty gravelly sand.

The materials encountered in boring B-3, down to about 12 feet from the ground elevation, consisted of slightly clayey silty gravelly sand, underlain by poorly graded sand extending to the maximum depth explored, i.e. 28 feet bgs. Ground water was encountered at about 26.5 feet bgs.

Variations in the layers conditions, as well as more detailed information are indicated on the attached Log of Boring in Appendix B. Approximate locations of the Borings are shown on the boring location plan, Figure A-2.

The soil conditions described in this report are based on the soils observed in the test borings drilled for this investigation and the laboratory test results. It is possible that soil conditions could vary in areas other than the boring locations.

7. LABORATORY TESTING

Laboratory testing, including moisture content and unit weight were performed on selected samples obtained from the borings to aid in the classification of the encountered layers and to evaluate their engineering properties. Also direct Shear Test, consolidation, expansion index, sulfates, chlorides, resistivity, and PH tests (corrosivity tests) have been conducted on selected samples. The results of our laboratory tests are presented on the boring logs in Appendix B, as well as in Appendix C.

8. GROUNDWATER

The subject site's elevation varies approximately between 728 to 756 feet Above Mean Sea Level (AMSL). Groundwater was encountered in two of our exploratory borings conducted at the designated locations. The measured depth of ground water at boring B-1 was about 42 feet bgs, while the groundwater level was measured at about 26.5 feet bgs within boring B-3. We have also reviewed the published maps by "Department of Conservation, California Division of Mine and Geology" and found out that the area of the subject project is not within the areas studied by DMG. Also we have conducted a search on the USGS website and concluded that no documented ground water records were published at the site's close vicinity.

9. SITE GEOLOGY

The site is located in the Chino Hills portion of the Los Angeles physiographic basin. The Los Angeles basin is bounded on the north by the Santa Monica and San Gabriel Mountains, on the east and southeast by the Santa Ana Mountains and San Joaquin Hills, and on the west and south by the Pacific Ocean. Most of the Chino Hills are underlain by the Puente Formation. The Puente Formation is primarily marine sediments of Miocene age. The Puente Formation has been differentiated into four members: La Vida, Soquel, Yorba and Sycamore Canyon.

Dibblee (2001) shows the site to be underlain by alluvium consisting of gravel sand and silt of valleys. The hills immediately north of the site are shown to consist of the Yorba Shale member of the Puente Formation.

10. SLOPE STABILITY

The site is not located within a studied and published Landslide Hazard zone of the State of California Department of Conservation. No evidence for landsliding was observed on or in the immediate vicinity of the site. The site has been graded to large-size relatively level pads and the proposed locations for the buildings are relatively flat. Therefore, and due to the lack of significant topographic changes at the proposed site, landsliding is not considered to be a potential problem.

11. LIQUEFACTION

Liquefaction may occur when saturated, loose to medium dense, cohesionless soils are densified by ground vibrations. The densification results in increased pore water pressures if the soils are not sufficiently permeable to dissipate these pressures during and immediately following an earthquake. When the pore water pressure is equal to or exceeds the overburden pressure, liquefaction of the affected soil layers occurs. For liquefaction to occur, three conditions are required:

- ground shaking of sufficient magnitude and duration;
- a ground water level at or above the level of the susceptible soils during the ground shaking; and
- soils that are susceptible to liquefaction.

The subject site does not lie within a studied and published Liquefaction Hazard zone by the State of California Department of Conservation. Ground water was encountered at two of our borings. Our review of the published data concluded that depth of historic groundwater is not yet determined / published for the vicinity of the site. Therefore, we conducted a 50-foot deep boring to evaluate likelihood of liquefaction for the site. Due to the type of the soils/earth

materials encountered in our borings and the measured blow counts, especially at below the ground water table, it is our opinion that the liquefaction is not a potential hazard for the site.

12. TSUNAMIES AND SEICHING

The site is located at an average elevation of approximately 742 feet AMSL and is not close to coastal line and there are no enclosed bodies of water in the vicinity of the site. Therefore tsunamis and seiching are not considered to be potential hazards to the site.

13. FLOODING

The site does not lie within an area within a 100 year flood zone as shown on the FEMA Flood Map #06071C9330H, effective date 08/28/2008 (Figure A-3). Therefore flooding is not considered to be a likely hazard to the site.

14. CONCLUSIONS AND RECOMMENDATIONS

14.1. General

We have reviewed the provided site plan and based on our understanding of the project, have determined that the planned development is feasible from a geotechnical engineering point of view, provided the geotechnical recommendations presented in this report are followed.

The following sections of this report contain geotechnical recommendations for the design and construction of foundations, slabs-on-grade, flatwork, utility trenches and pavements for parking areas. As we understand, the subject project does not include any retaining wall and then therefore this task is not addressed in the report. It is recommended that a formal review of foundation plans be performed by our office when plans become available, to verify the applicability of the recommendations contained herein.

14.2. Grading

14.2.1. Buddha Hall Temple Building

The soils underlying this building are recognized to be low to moderately expansive clayey materials. As discussed in the aforementioned "Subsurface Conditions" section of this report, the upper 16 feet of the soils underlying this building's footprint area appear to be artificial fill. It is our opinion that the in-place soils, which are very stiff to hard in consistency, are capable to carry light structural loads, as the loads imposed from the proposed one story building, provided that the following recommendations are followed.

It is our recommendation that the on-site soils below the entire footprint of the subject building be over-excavated, replaced and backfilled with granular/non-expansive earth materials, so that the footings for the building will be supported entirely on 3 feet of compacted fill. Fill material shall comply with the specifications provided in Section 11.4 of this report. The over-excavation shall extend at least 5 feet from outer face of the perimeter footings, all around the building perimeter.

The on-site existing shallow sandy silty clay soils encountered at this area of the site are expansive, and shall not be used for backfilling purpose. The backfill materials shall have EI less than 30 and comply with the requirement provided in forthcoming section, 11.4. The backfilled materials shall be moisture-conditioned to a moisture content between the optimum moisture content and 3% above the optimum moisture content, and compacted to at least 90% of the maximum dry density obtained per ASTM D1557.

14.2.2. Buildings I, II and III:

The soils underlying these buildings are consisting of sandy silt/silty sand earth materials. The in-place soils are dense/hard in place and due to existence of slight amount of clay, are considered to be low expansive. It is our recommendation that the on-site soils below the entire footprint of the subject buildings be over-excavated, replaced and backfilled with granular/low-expansive earth materials, so that the footings for the building will be supported entirely on 2 feet of compacted fill. Fill material shall comply with the

specifications provided in Section 11.4 of this report. The over-excavation shall extend at least 4 feet from outer face of the perimeter footings, all around the building perimeter. The backfilled materials shall be moisture-conditioned to a moisture content between the optimum moisture content and 3% above the optimum moisture content, and compacted to at least 90% of the maximum dry density obtained per ASTM D1557. Due to the gravelly nature of the soils underlying the site, it is expected that large gravels and cobbles are encountered during excavation of footings.

Following the over-excavation, we recommend that the areas to receive engineered fill be scarified to a minimum depth of 8 inches, moisture conditioned to a moisture content between 3% to 6% above the optimum moisture content, and compacted to at least 90% of the maximum dry density obtained per ASTM D1557.

14.3. General Grading Requirements

All fills, unless otherwise specifically stated in the report, shall be compacted to at least 90 percent of the maximum dry density as determined by ASTM D 1557 Method of Soil Compaction. The moisture content during compaction shall be as stated below, unless otherwise specifically stated in the report.

1. No fill shall be placed until the area to receive the fill has been adequately prepared and approved by the Geotechnical Consultant or his representative.

2. Fill soils should be kept free of debris and organic material.

3. Rocks or hard fragments larger than 3 inches may not be placed in the fill without approval of the Geotechnical Consultant or his representative, and in a manner specified for each occurrence.

4. The fill material shall be placed in layers which, when loose, shall not exceed 8 inches per layer. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material and moisture.

5. When the moisture content of the fill material is too low to obtain adequate compaction, water shall be added and thoroughly dispersed until the soil has a moisture between the optimum and 2 percent over optimum moisture content.

6. When the moisture content of the fill material is too high to obtain adequate compaction, the fill material shall be aerated by blading or other satisfactory methods until the soil has a moisture content between the optimum moisture content and 2 percent over optimum moisture content.

7. Fill and cut slopes should not be constructed at gradients steeper than 2:1(H: V).

14.4. Fill Materials and Import

During the course of our site exploration, different type of earth materials were encountered underlying the Buddha Hall Building and footprint area of the other three buildings, buildings I, II and III. It appears that the materials on the eastern part of the site and under the footprint area of the proposed Buddha Hall Temple is artificial fill, which is found to be expansive clayey soils and not suitable for being used for backfilling purpose. On another note, the soil strata underlying the footprint area of buildings I, II, and III consist of medium dense to dense granular soils, and may be used for backfilling purpose. Also, import materials may be used for backfilling purpose. Import materials should contain sufficient fines (binder material) so as to be relatively impermeable and result in a stable subgrade when compacted. The imported/backfill materials should be low-expansive, with an expansion index (EI) less than 30 and free of organic materials, debris, and cobbles larger than 3 inches, with no more than 25 percent of the materials being larger than 2 inches in size and no more than 20% passing # 200 sieve. A bulk sample of potential import material, weighing at least 30 pounds, should be submitted to the Geotechnical Consultant at least 72 hours before fill operations. All proposed import materials should be approved by the Geotechnical Consultant prior to being placed at the site.

14.5. Seismic Coefficients

Under the Earthquake Design Regulations of Chapter 16, Section 1613A of the CBC 2010, and using the mapped acceleration parameters obtainable from the program available in the USGS Website, the following coefficients and factors apply to lateral-force design for structures at the site:

Site Class (CBC 2010 – 1613A.5.2)	D
Seismic Design Category based on Occupancy Category II (CBC 2007& 2010-1604.5 &1613.5.6)	D
Mapped Acceleration Parameter for Short Period (0.2 Second), S_S	1.749
Mapped Acceleration Parameter for 1.0 Second, S_1	0.631
Adjusted Maximum Spectral Response Parameter for Short Period (0.2 Second), S_{MS}	1.749
Adjusted Maximum Spectral Response Parameter for 1.0 Second Period , S_{M1}	0.946
Design Spectral Response Acceleration Parameter, S_{DS}	1.166
Design Spectral Response Acceleration Parameter, S_{D1}	0.631

Project Site Coordinates: Longitude: W117.7411° Latitude: N33.9817°

Project Site Soil Classification: Alluvium

14.6. Foundations

14.6.1. General

Buildings or structures with column loads of less than 50 kips and continuous footing loads of less than 3 kip per foot (kpf) may be supported on individual spread or continuous footings. We recommend that the proposed footings for Buddha Temple Building be founded entirely within the recommended engineered fill placed as per the "Grading" section of this report, so that the footings are supported on 3 feet of compacted fill. The footings for Buildings I, II and II shall be supported on a minimum of 12 inches of compacted fill, as recommended. For the footings supported on engineered fill, i.e. for Buddha Hall Temple Building, the bottom of footings should be underlain with a minimum

of 3 feet of engineered fill, as recommended. The compacted fill shall laterally extend at least 5 feet beyond the exterior face of the perimeter footings for all the buildings. A Structural Engineer should design foundations and floor slabs in accordance with the requirements of the applicable building code(s).

14.6.2. Bearing Capacity

The proposed buildings I, II and III may be supported on spread and/or strip footings designed using a bearing value of 3000 pounds per square foot (psf) and a bearing value of 2500 psf may be used for design of footings of Buddha Hall Temple, which will be supported on engineered fill as recommended per the aforementioned grading sections of this submittal. The recommended bearing value is a net value and the weight of concrete in the footings may be taken as 50 pounds per cubic foot (pcf). The weight of soil backfill may be neglected when determining the downward loads from the footings. A one-third increase in the bearing value may be used when considering wind or seismic loads.

The footings for the proposed Buddha Hall Temple should extend a minimum of 24 inches below the lowest adjacent finished grade, while the footings for buildings I, II and III should extend a minimum of 18 inches below the lowest adjacent grade. Individual column pads/spread footings and continuous strip/wall footings should have minimum widths of 24 and 12 inches, respectively.

14.6.3. Lateral Resistance

Lateral loads may be resisted by soil friction and by the passive resistance utilized by the compacted granular engineered fill. A coefficient of friction of 0.35 may be used between the footings, floor slabs, and the supporting soils. The passive resistance of level properly compacted fill soils may be assumed to be equal to the pressure developed by a fluid with a density of 250 pcf. A one-third increase in the passive value may be used for wind or seismic loads. The frictional resistance and the passive resistance of the soils may be combined provided that the passive resistance is reduced by one-third.

14.6.4. Settlement

Based on the results of our analyses and provided that our recommendations in preceding sections of this report are followed, we estimate that the maximum total static settlement under sustained loads will be about 3/4- inch to 1- inch for the introduced maximum structural loads, corresponding to about 1/2-inch differential settlement within a horizontal distance of 30 feet.

14.7. Utility Trench Backfilling

A minimum of 4 inches of bedding material shall be first placed below the bottom of the utility line, on a firm and unyielding subgrade. Bedding material shall also be placed immediately around a utility line extending to a point 12 inches above the top of the line. The bedding material should consist of sand, fine-grained gravel, or cement slurry to support the line and protect it. The bedding material should meet the specification given in the last edition of the "Standard Specification for Public Works Construction" (Greenbook). Sand or gravel should be compacted in accordance with Greenbook specifications.

Above the bedding material and up to the finished ground surface, utility trench backfills may consist of low-expansive material (EI less than 35) or on-site native material, if suitable, and should be mechanically compacted to at least 90 percent of the maximum dry density of the soils, except below pavements or within the areas with a higher relative compaction such as building pads. A minimum relative compaction of 95 percent will be required in the upper 1 foot of the backfill underneath the pavement areas and the minimum required relative compaction for the upper 2 feet within the building pads shall be as set forth for the building pads. Prior to backfilling, the gradation and expansivity of the backfill material shall be tested, reviewed, and approved by the soils engineer. The bedding materials and backfilling should be placed in accordance with Sections 306-1.2.1 and 306-1.3 of the "Standard Specification for Public Works Construction" (Greenbook).

When adjacent to any footings, utility trenches and pipes should be located above an imaginary line measured at a gradient of 1:1 (horizontal: vertical) projected down from the bottom edges of any footings. Otherwise the pipe should be designed to accept the lateral effect from the footing load, or the footing bottom should be deepened as needed to comply with this requirement, into competent materials.

For bedding and backfilling of trenches and upon approval of the soils engineer, slurry mix (CLSM) may be used. The slurry mix shall comply with the requirements of Section 201-6 of the "Standard Specification for Public Works Construction" (Greenbook). The backfill material shall be observed, tested and approved by the Geotechnical Engineer.

15. PERCOLATION TEST

15.1. General

We have been requested to provide percolation rate for the underlying soils at the designated location at the site, as shown on Figure A-2. Based on our conversations and correspondences with the project design team, it is our understanding that the percolation rate for the shallow soils is required for use in the design of the storm drain system for the subject project.

In general, percolation tests are used for design and construction of subsurface sewage disposal system and the test procedure for this purpose varies in different localities. All test procedures provided by governing agencies in different cities/counties refer to the mentioned purpose and provide testing method and requirements for subsurface sewage disposal systems design and construction. For the purpose of obtaining an average percolation rate for storm drain system design at the subject site, GAI has employed a Falling Head Permeability Test method.

Procedure for Performing a Falling Head Permeability Test is summarized below:

1) Drill or auger a 6-inch diameter or larger hole to the depth at which the test is to be executed.

2) If the material will not stand without support, the hole must be cased to the bottom.
3) Place a cushion of coarse gravel at the bottom of the hole and set an intake pipe and an observation pipe into position.
4) Fill the hole with medium gravel to a depth at least five times the diameter of the hole. If casing has been used, add the medium gravel to the hole in small increments while slowly pulling back the casing to prevent the pipes from becoming sandlocked in the casing. The casing should be pulled back only enough to assure that the water surface to be maintained in the hole will be below the bottom of the casing. It is advisable to have a few inches of the gravel fill protrude into the casing.
5) Pour a metered supply of water into the intake pipe for a minimum of 30 minutes in order to saturate the soil surrounding the hole. The water supply should be controlled so that the water level at the end of this soaking period is below the bottom of the casing (if casing has been used), but is more than five times the hole diameter above the bottom of the hole.
6) Stop adding water to the intake pipe and record the water level at appropriate time intervals for a period of 120 minutes.
7) Enter all applicable data in the falling head permeability data sheet as appropriate.

15.2. Test Results

Boring P-1 performed for the percolation test and its location is shown on Figure A-2, within Appendix A. To the depth of about 7 feet, the maximum depth drilled, sandy silty clay soils were encountered. As observed during pre-soaking period of the test and after a waiting period of 4 hours, the water level did not drop noticeably. This corresponds to a non-percolating stratum and therefore it is our opinion that the percolation rate for the introduced location of the site and at about 7 feet bgs, should be considered zero.

16. PAVEMENT DESIGN

The following preliminary pavement section recommendations are based on an assumed R-value of 30 for the subgrade soils. Prior to the completion of grading operations, samples of

the on-site or imported soil to be used for subgrade, should be tested to confirm the R-value of 30.

Traffic Index	Asphalt Thickness (Inches)	Base Course (CAB) Thickness (Inches)
4	3	5
5	3	6
6	4	7
7	4	12

Base course material should consist of crushed aggregate base (CAB) as defined by Section 200-2.2 of the Standard Specifications for Public Works Construction ("Greenbook"). Base course should be compacted to at least 95 percent of the maximum dry density of that material. The assumed R-value in design of the above provided preliminary sections for CAB material is 78. Subgrade underlying the pavement area shall be scarified to a minimum depth of 12 inches, moisture –conditioned to a moisture content between the optimum moisture content and 3% above the optimum moisture content for granular subgrades and between 3% to 6% above the optimum moisture content for clayey subgrades, and compacted to at least 90% of the maximum dry density obtained per ASTM D1557.

Base course material should be purchased from a supplier who will certify the base course will meet or exceed the specifications in the Greenbook as indicated. We could, at your request, perform sieve analysis and sand equivalency tests on material delivered to the site which appears suspect. Additional tests could be performed, upon request, to determine if the material is in compliance with the specifications.

The pavement section recommendations presented above are based upon assumed Traffic Index values. GAI does not take responsibility for the numerical determination of the Traffic Index values or the areas where they apply within the site. We would be pleased to provide pavement section recommendations for alternative Traffic Index values upon request.

In order to increase pavement performance and extend the pavement life, concrete curbs and gutters could be deepened to extend below the base course material and be seated in the compacted subgrade. The intent of deepening the curbs and gutters is to form a "cut-

off" wall to reduce the amount of water flow through the base course material from adjacent landscaped areas. Subgrade soils which become saturated as a result of water flowing through base course material can reduce the life of the pavement. The curbs should be deepened to an elevation of at least 6 inches below the bottom level of the proposed base course section.

Any on-site surficial organic soils within landscaped/turf areas cannot be used as subgrade material under the roadways and parking areas. The over-excavation shall be laterally extended a minimum of 2 feet beyond the perimeters and edges of parking areas, roadways and curbs. Any abandoned footing and / or underground concrete structure within the work limit shall be removed entirely and backfilled to the grade.

17. SOIL EXPANSIVITY

We have performed expansivity test on a selected soils sample obtained from boring B-1, to determine the expansion characteristics of the on-site shallow soils. The sample was obtained from on-site soils at about 1 to 4 feet deep below the existing grade, which is susceptible to expansion when facing seasonal cycles of saturation/desiccation. The test result is presented in the following table:

Sample Location	Sample Depth bgs	Expansion Index (EI)	Potential Expansion (ASTM D4829 – 08)
Boring B-1	1' – 4'	49	Low (~to medium)

Based on the test result and our judgment, the on-site shallow clayey soils within the proposed footprint for Buddha Hall Temple determined to have a low expansion potential, (based on ASTM D4829-08), and as such, the recommendations provided in this report will suffice and should be incorporated into the design and construction.

18. SOIL CORROSIVITY

SoilCor performed corrosivity tests on a sample of on-site soils and the results of the tests are presented in Appendix C of this report. As indicated in the test results, the amount of sulfate in tested shallow soils is less than 0.1 percent by weight (water soluble sulfate), which indicates no sulfate exposure. Based on CBC 2010, section 1904.3, any concrete exposed to sulfate containing soils shall comply with the requirements and provisions of ACI 318, Section 4.3. The resistivity test results indicate a severely corrosive condition for the tested soils. Further interpretation of the corrosivity test results, including the resistivity value, and providing corrosion design and construction recommendations are referred to corrosion specialists/consultants.

19. OBSERVATION AND TESTING

This report has been prepared assuming that GEO-ADVANTEC, INC. will perform all geotechnical-related field observations and testing. If the recommendations presented in this report are utilized, and observation of the geotechnical work is performed by others, the party performing the observations must review this report and assume responsibility for recommendations contained herein. That party would then assume the title "Geotechnical Consultant of Record".

A representative of the Geotechnical Consultant should be present to observe all grading operations as well as all footing excavations. A report presenting the results of these observations and related testing should be issued upon completion of these operations.

20. CLOSURE

The findings and recommendations presented in this report were based on the results of our field and laboratory investigations, combined with professional engineering experience and judgment. The report was prepared in accordance with generally accepted engineering principles and practice. We make no other warranty, either expressed or implied.

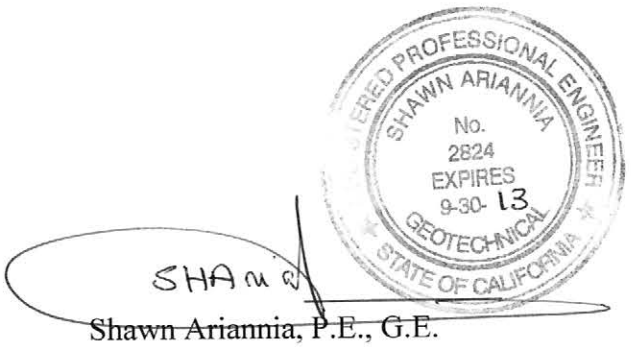
The soils encountered in the boreholes are believed to be representative of the total under consideration area for the subject proposed developments; however soil characteristics can vary throughout the site. GAI should be notified if subsurface conditions are encountered which differ from those described in this report.

Samples secured for this investigation will be retained in our laboratory for a period of 45 days from the date of this report and will be disposed after this period unless other arrangements are made.

Should you have any questions concerning this submittal, or the recommendations contained herewith, please do not hesitate to call our office.

Respectfully Submitted,

GEO-ADVANTEC, INC.



Shawn Ariannia, P.E., G.E.
Principal Geotechnical Engineer

Distribution:

1. Addressee (3wet stamped copy+ a .pdf copy via e-mail)
2. File

APPENDICES

Appendix A: Maps and Plans

Vicinity Map – Figure A-1
Boring Location Plan – Figure A-2
FEMA Flood Map - Figure A-3

Appendix B: Field Exploratory Boring Logs

Borings B-1, B-2 and B-3

Appendix C: Laboratory Test Results

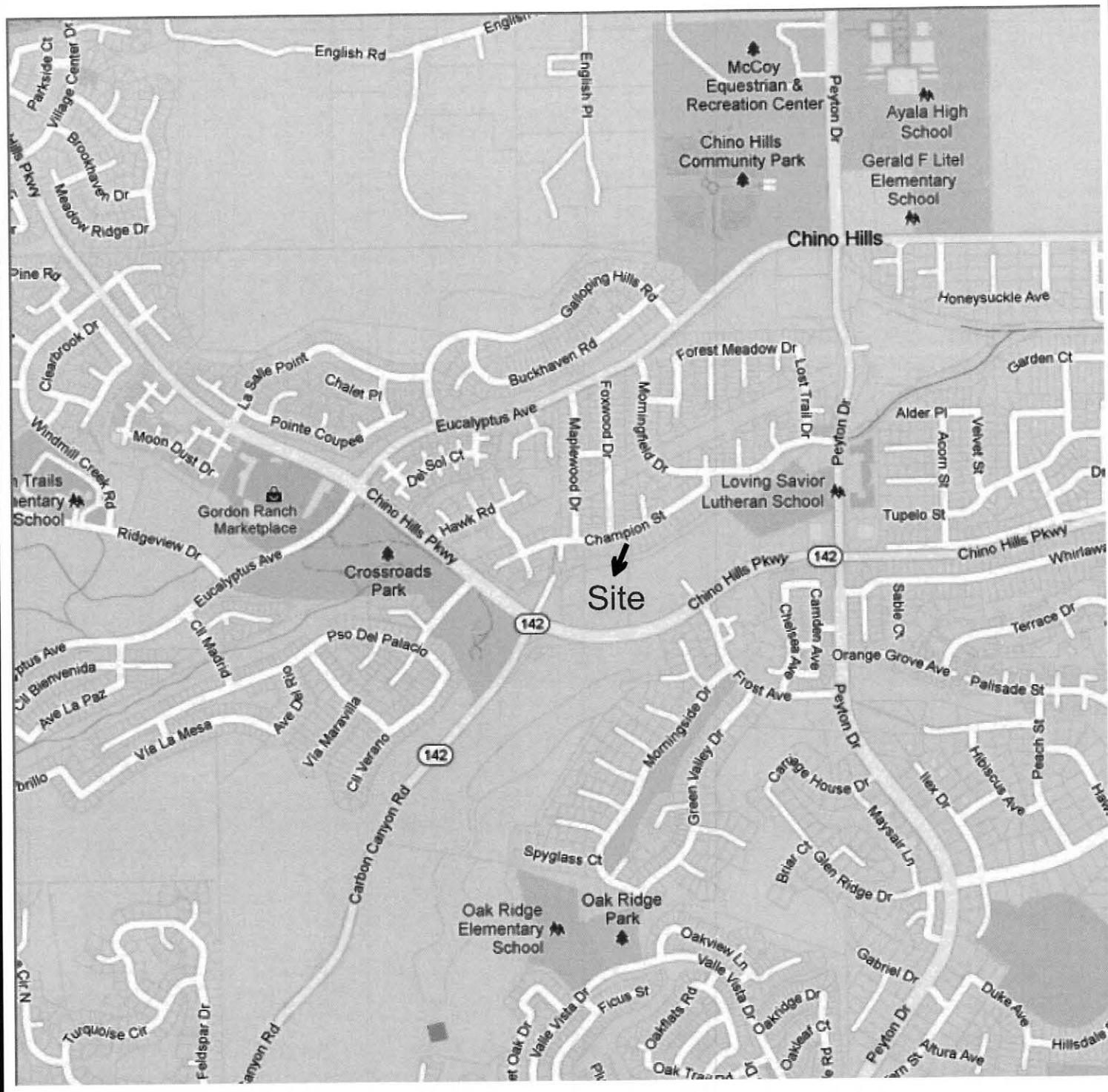
Appendix G: Response Spectra

REFERENCES

1. Dibblee T. W. 2001, Geologic Map of the Yorba Linda and Prado Dam Quadrangles (Eastern Puente Hills) Los Angeles, Orange, San Bernardino and Riverside Counties, California, DF 75.

2. FEMA, 2008, Flood Hazard Map Image 06071C9330H, dated 8/28/2008, ESRI/FEMA Hazard Awareness.

APPENDICES



Geo-Advantec Inc. Geotechnical Engineering.Earthquake Engineering.Engineering Geology		VICINITY MAP	FIGURE A-1
PROJECT NO.	1007-12	Wat Thai Temple Chino Hills, CA	
DATE	06-27-2012		

EASEMENT NOTES:

E4 An easement for public utilities and incidental purposes in the document recorded as book 303, page 87 of Official Records. The location of the easement cannot be determined from record information, the reference recorded map is missing the Book number. (Affects Parcel No.3).

E5 An easement for pipe lines, ingress and egress and incidental purposes in the document recorded as book 5820, page 889 of Official Records. (Affects Parcel No.3).

E6, E6a, E6b and E6c 15' wide easements for ingress, egress and public utilities and incidental purposes in the documents recorded as book 6565, pages 904 (E6), 906 (E6a) and 908 (E6b)and in book 6700, page 987 (E6c); both of Official Records. (Affects Parcel No.1).

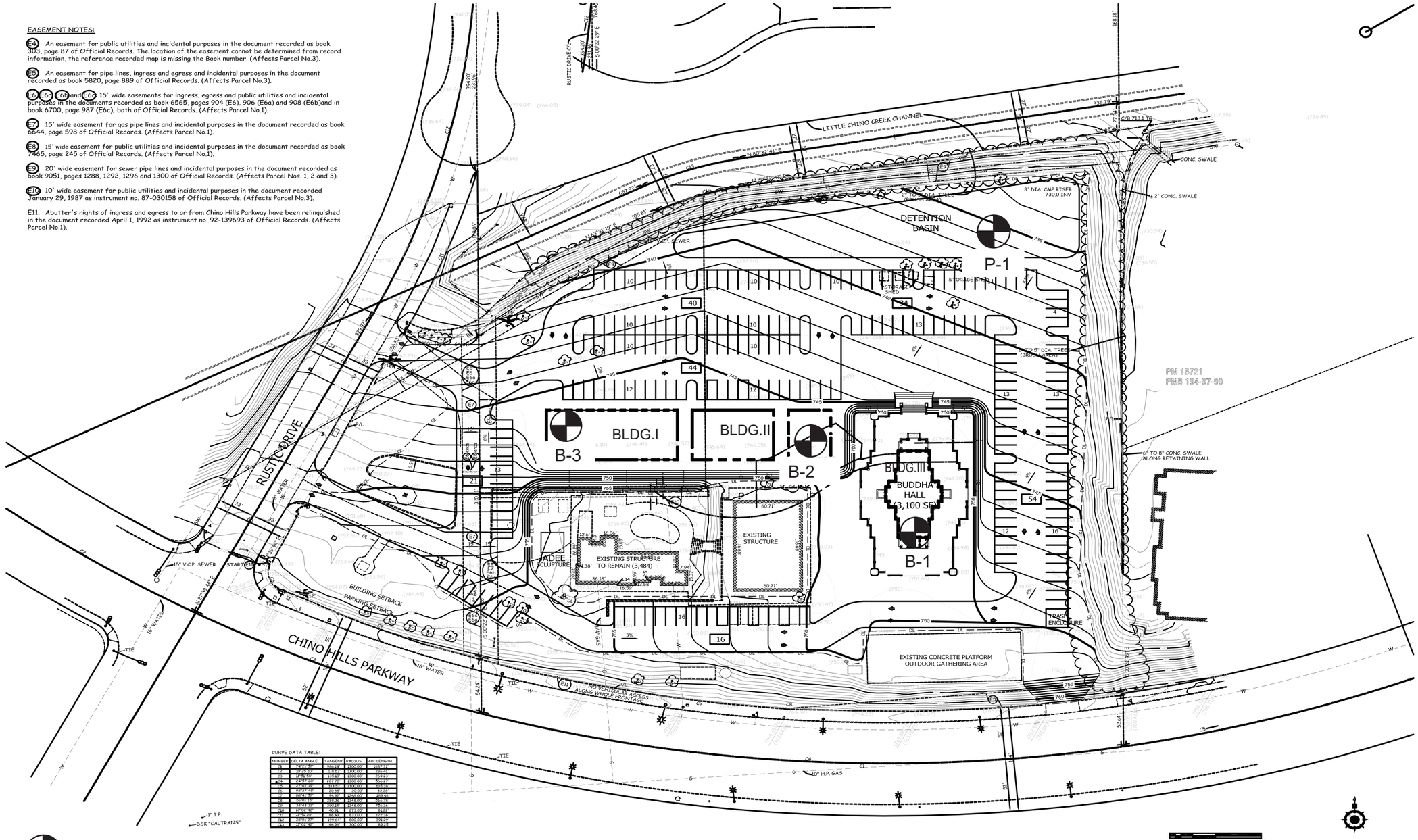
E7 15' wide easement for gas pipe lines and incidental purposes in the document recorded as book 6644, page 598 of Official Records. (Affects Parcel No.1).

E8 15' wide easement for public utilities and incidental purposes in the document recorded as book 7465, page 245 of Official Records. (Affects Parcel No.1).

E9 20' wide easement for sewer pipe lines and incidental purposes in the document recorded as book 9051, pages 1288, 1292, 1296 and 1300 of Official Records. (Affects Parcel Nos. 1, 2 and 3).

E10 10' wide easement for public utilities and incidental purposes in the document recorded January 29, 1987 as instrument no. 87-030158 of Official Records. (Affects Parcel No.3).

E11. Abutter's rights of ingress and egress to or from Chino Hills Parkway have been relinquished in the document recorded April 1, 1992 as instrument no. 92-139693 of Official Records. (Affects Parcel No.1).



CURVE DATA TABLE:

NUMBER	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
C1	10°41'57"	186.34	1000.00	373.71
C2	10°41'57"	118.93	637.00	238.14
C3	21°45'38"	110.89	1000.00	379.73
C4	14°54'28"	297.90	1700.00	464.77
C5	17°07'10"	213.57	1300.00	433.55
C6	01°22'54"	20.03	1400.00	37.83
C7	06°41'57"	34.97	1748.00	204.48
C8	10°10'17"	288.70	1748.00	566.72
C9	14°43'54"	330.15	1748.00	749.70
C10	07°08'42"	40.01	717.00	81.72
C11	21°45'39"	85.99	837.00	152.36
C12	28°10'27"	199.24	800.00	393.37
C13	24°05'42"	44.95	800.00	89.98

B-3, P-1

Geo-Advantec Inc. Geotechnical Engineering.Earthquake Engineering.Engineering Geology	BORING LOCATIONS PLAN	06-26-12	FIGURE
PROJECT NO.: 12-1007	WAT TAL TEMPLE-CHINO HILLS, CA		A-2

WINATA
Engineering
INCORPORATED

Telephone:
Facsimile:

SEAL

KEY PLAN

NOTES

ISSUES/REVISIONS

NO.	DATE	DESCRIPTION

CLIENT

Contact:

PROJECT NAME

Wat Thai Temple
at
2948 Chino Hills Parkway
Chino Hills, CA 91709

Date: 05.11.12
Project Number:
Drawn By:
Scale:
Sheet Title:

Sheet No.:

Geo-Advantec Inc. Geotechnical Engineering.Earthquake Engineering.Engineering Geology		FEMA FLOOD MAP	FIGURE
PROJECT NO.	1007-12	Wat Thai Temple Chino Hills, CA	A-3
DATE	06-27-2012		

APPENDIX B

FILED EXPLORATORY BORING LOGS

Boring No.: B-1 Sheet: 1 Of: 2

Drilling Co. : ACE Drilling
Drilling Method : Hollow Stem 6" Auger
Sampling Method : Bulk - CD - SPT
Hammer Weight : 140 lb Drop Height : 30"
Location : See Figure A-2

Ground Elevation: 745+/-
Lat.: Lon.:
Date Drilled : 06-09-2012

Sample No.	Moisture Content (%)	Dry Unit Weight (pcf)	Blows	Depth (ft)	Soil Type (USCS / ASTM D2487)	Description / Interpratation
				0	CL-ML	**Sandy Silty Clay;** trace fine gravel, very stiff,slightly moist, dark brown
	21.5	98.4	37/12"	5		
	13.2	114.8	40/12"	10		hard
			35/12"	15		very stiff
					CL	**Silty Clay with Sand;** very stiff,slightly moist, ligth brown
	22.3	101.2	39/12"	20		
			29/12"	25		Less Plastic
			15 15 15	30		Grains to coarser sand
			12 14 16	35	CL-ML	**Sandy Silty Clay;** trace to little fine gravel, very stiff,slightly moist, ligth brown
			5 10	40	SM	**Silty Sand:** little clay, trace fine gravel, medium dense, very moist

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BORING LOG

Wat Thai Temple, Chino Hills

PROJECT NO.	DATE	FIGURE
1007-12	06-27-12	

Boring No.: B-1 Sheet: 2 Of: 2

Drilling Co. : ACE Drilling
Drilling Method : Hollow Stem 6" Auger
Sampling Method : Bulk - CD - SPT
Hammer Weight : 140 lb **Drop Height :** 30"
Location : See Figure A-2

Ground Elevation:
Lat.: **Lon.:**
Date Drilled : 06-09-2012

Sample No.	Moisture Content (%)	Dry Unit Weight (pcf)	Blows	Depth (ft)	Sample Location	Graphic Log	Soil Type (USCS)	Description / Interpratation
			12	40				water level
			8					
			20	45			Bedrock	**Sandstone:** thinly bedded, dry to slightly moist, weakly cemented
			30					
			10					
			27	50				End of Boring @ 50.5 ft bgs.
			30					
				55				
				60				
				65				
				70				
				75				
				80				

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BORING LOG

Wat Thai Temple, Chino Hills

PROJECT NO.	DATE	FIGURE
1007-12	06-27-12	

Boring No.: B-2

Sheet: 1 Of: 1

Drilling Co. : ACE Drilling
Drilling Method : Hollow Stem 6" Auger
Sampling Method : Bulk - CD - SPT
Hammer Weight : 140 lb **Drop Height :** 30"
Location : See Figure A-2

Ground Elevation: 745.5+/-
Lat.: **Lon.:**
Date Drilled : 06-09-2012

Sample No.	Moisture Content (%)	Dry Unit Weight (pcf)	Blows	Depth (ft)	Sample Location	Graphic Log	Soil Type (USCS / ASTM D2487)	Description / Interpratation
				0			SM	**Silty Sand:** trace clay, little fine to medium gravel, dry, medium dense to dense, ligth brown
			60/12"	5				Hard to Drill (Rig Chanting)
			40/12"	10				End of Boring - Refusal @ 6 ft bgs. (Encountered hard substance-bolder/rock)
			35/12"	15				
			39/12"	20				
			29/12"	25				
			15 15 15	30				
			12 14 16	35				
			5 10	40				

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BORING LOG

Wat Thai Temple, Chino Hills

PROJECT NO.	DATE	FIGURE
1007-12	06-27-12	

Boring No.: B-3

Sheet: 1 Of: 1

Drilling Co. : ACE Drilling
Drilling Method : Hollow Stem 6" Auger
Sampling Method : Bulk - CD - SPT
Hammer Weight : 140 lb Drop Height : 30"
Location : See Figure A-2

Ground Elevation: 749+/-
Lat.: Lon.:
Date Drilled : 06-09-2012

Sample No.	Moisture Content (%)	Dry Unit Weight (pcf)	Blows	Depth (ft)	Sample Location	Graphic Log	Soil Type (USCS / ASTM D2487)	Description / Interpratation
				0			ML	**Slightly Clayey Sandy Silt with Gravel:** dense, dry to sligthly moist, ligth brown
	9.9	118.1	50/12"	5				Medium Dense (No Full Recovery)
			70/11"	10				Dense
							SP	**Poorly Graded Sand:** little fine to medium gravel, medium dense, dry to sligthly moist, olive brown
			49/12"	15				medium to coarse gravel
			58/9"	20				Dense
			15 17 18	25				moist, reddish brown/gray mixed color
								water level
				30				End of Boring @28 ft bgs.
				35				
				40				

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BORING LOG
Wat Thai Temple, Chino Hills

PROJECT NO.	DATE	FIGURE
1007-12	06-27-12	

KEY TO LOGS

SPT/CD BLOW COUNTS VS. CONSISTENCY/DENSITY					
FINE-GRAINED SOILS (SILTS, CLAYS, etc.)			GRANULAR SOILS (SANDS, GRAVELS, etc.)		
CONSISTENCY	*BLOWS/FOOT		RELATIVE DENSITY	*BLOWS/FOOT	
	SPT	CD		SPT	CD
SOFT	0-4	0-4	VERY LOOSE	0-4	0-8
FIRM	5-8	5-9	LOOSE	5-10	9-18
STIFF	9-15	10-18	MEDIUM DENSE	11-30	19-54
VERY STIFF	16-30	19-39	DENSE	31-50	55-90
HARD	over 30	over 39	VERY DENSE	over 50	over 90

* CONVERSION BETWEEN CALIFORNIA DRIVE SAMPLERS (CD) AND STANDARD PENETRATION TEST (SPT) BLOW COUNT HAS BEEN CALCULATED USING "FOUNDATION ENGINEERING HAND BOOK" BY H.Y. FANG. (**VALUES ARE FOR 140 Lbs HAMMER WEIGHT ONLY**)

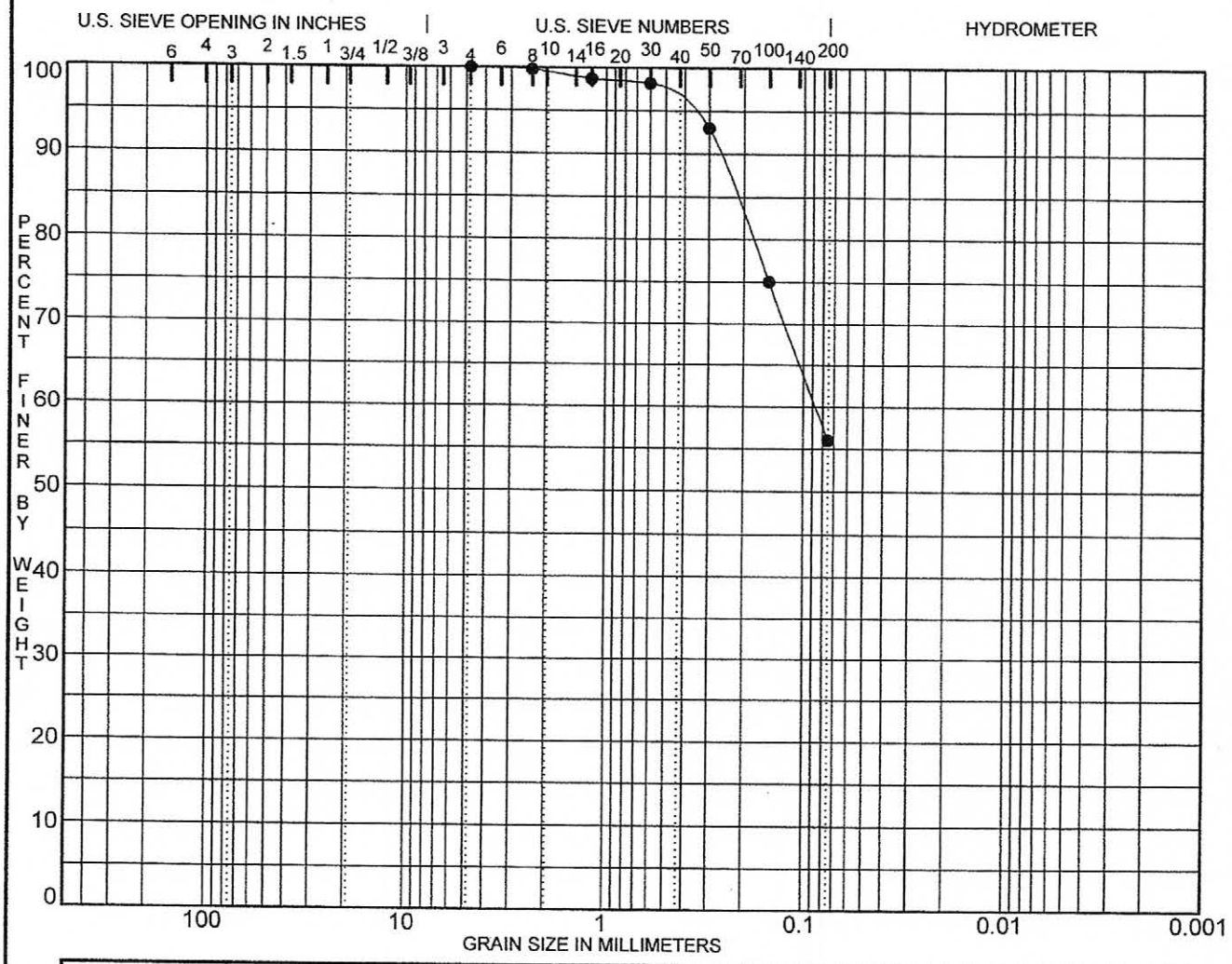
DESCRIPTIVE ADJECTIVE VS. PERCENTAGE	
DESCRIPTIVE ADJECTIVE	PERCENTAGE REQUIREMENT
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
AND	35 - 50%

*THE FOLLOWING "DESCRIPTIVE TERMINOLOGY/ RANGES OF MOISTURE CONTENTS" HAVE BEEN USED FOR MOISTURE CLASSIFICATION IN THE LOGS.

APPROXIMATE MOISTURE CONTENT DEFINITION			
DEFINITION	MOISTURE CONTENT (%)		DESCRIPTION
	FINE-GRAINED SOILS (SILTS, CLAYS, etc.)	GRANULAR SOILS (SANDS, GRAVELS, etc.)	
DRY	<10	2 - 4	Dry to the touch; no observable moisture
SLIGHTLY MOIST	15-24	6-8	Some moisture but still a dry appearance
MOIST	24-28	10-13	Damp, but no visible water
VERY MOIST	30-38	15-20	Enough moisture to wet the hands
WET	>40	20-25	Almost saturated; visible free water

APPENDIX C

LABORATORY TEST RESULTS



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	MC%	LL	PL	PI	Cc	Cu
●	B-3	4.0	SLIGHTLY CLAYEY SANDY SILT						

	Specimen Identification		D100	D60	D30	D50	%Gravel	%Sand	%Silt	%Clay
●	B-3	4.0	4.75	0.09			0.0	44.0	56.0	

GRAIN SIZE - V1 236-12.GPJ PETRA.GDT 6/29/12

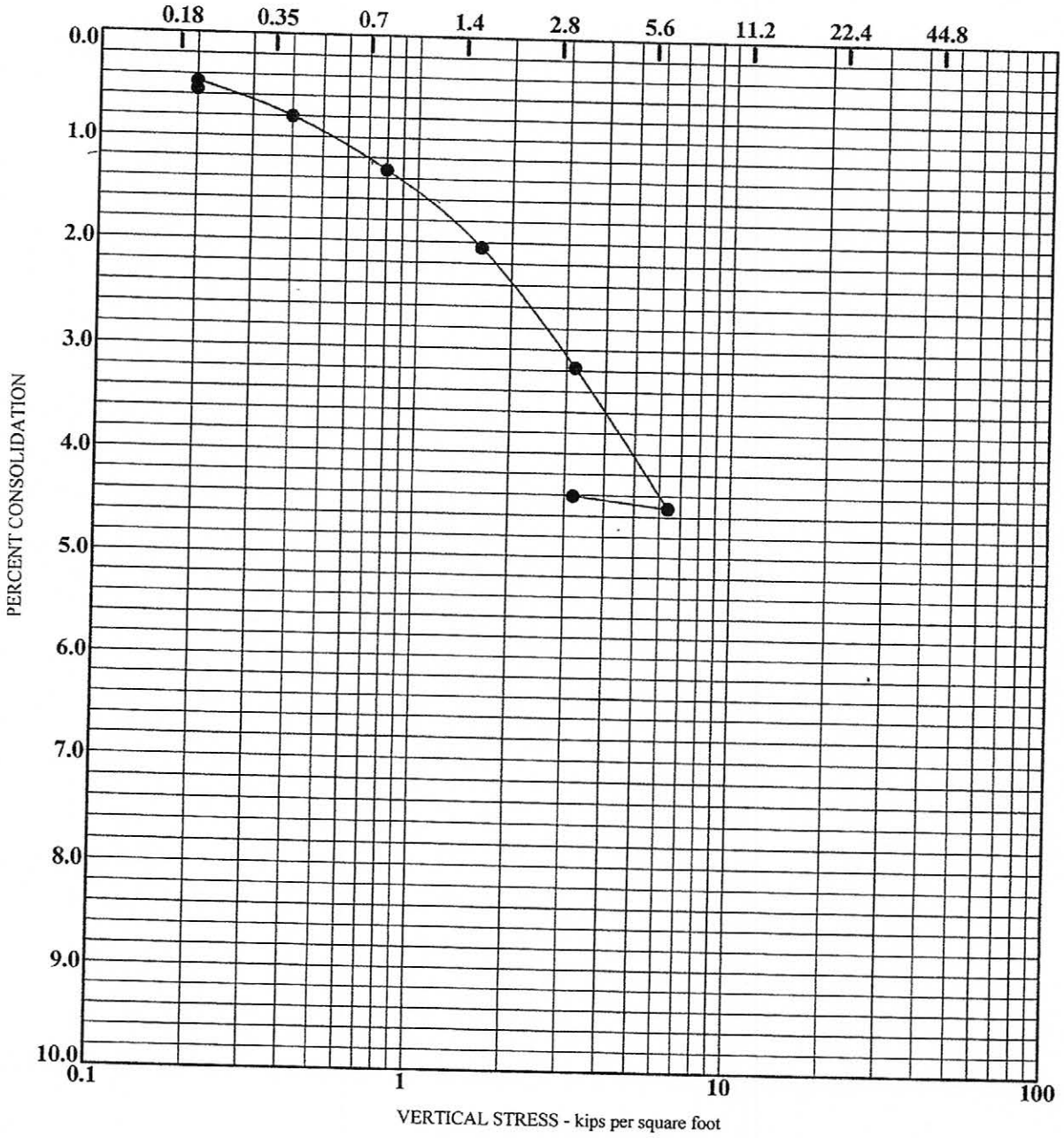
J.N. 1007-12

GEO-ADVANTEC, INC.

GRAIN SIZE ANALYSIS

June, 2012

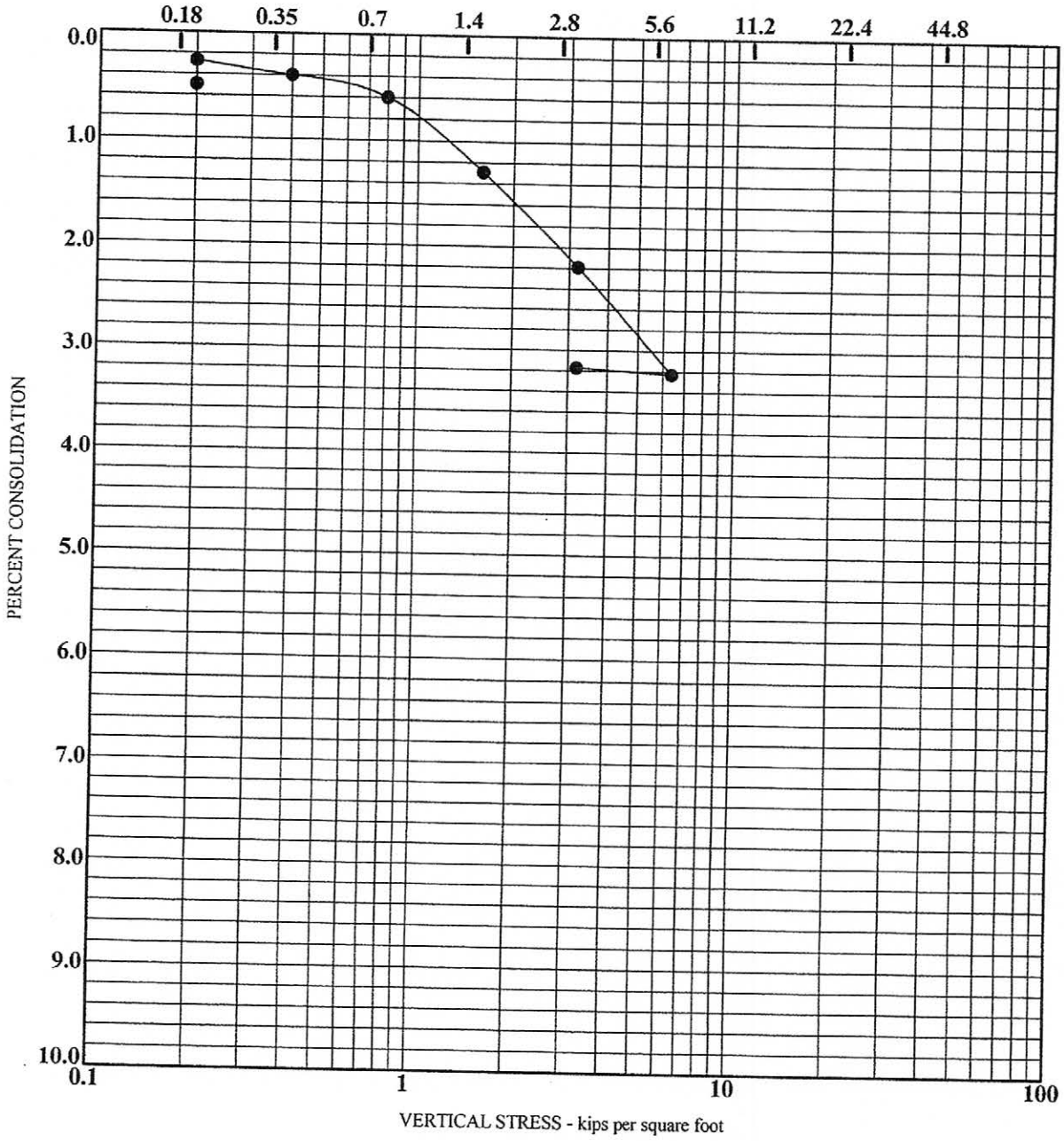
SAMPLE LOCATION	MATERIAL DESCRIPTION	INITIAL			INUNDATED
		DENSITY (pcf)	MOISTURE (%)	SATURATION (%)	LOAD (ksf)
● B-1 @ 9.0	silty clay	114.8	13.2	79	



J.N. 1007-12	CONSOLIDATION TEST RESULTS	June, 2012
GEO-ADVANTEC, INC.		

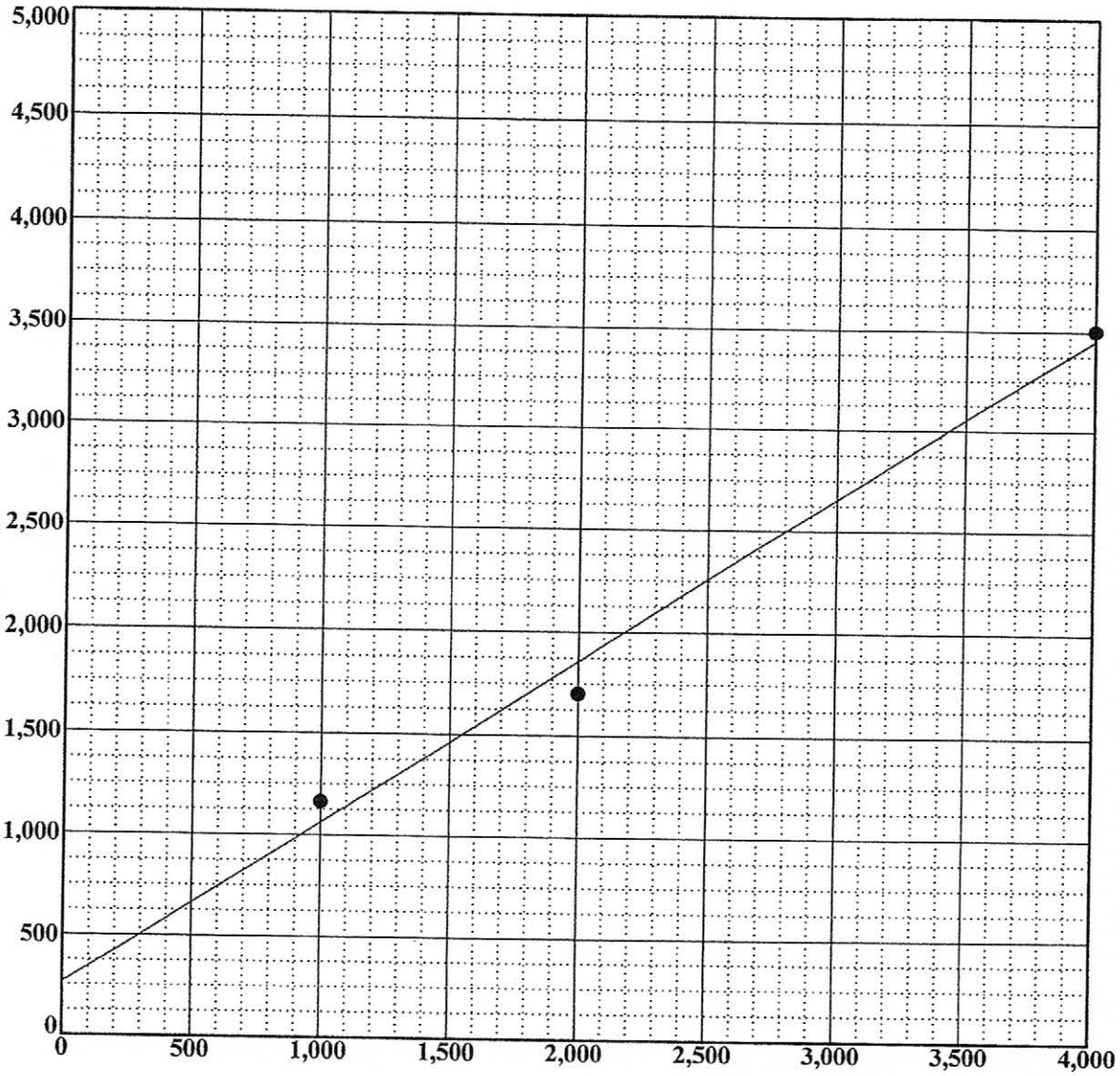
CONSOLIDATION - STRAIN 236-12.GPJ PETRA.GDT 6/29/12

SAMPLE LOCATION	MATERIAL DESCRIPTION	INITIAL			INUNDATED
		DENSITY (pcf)	MOISTURE (%)	SATURATION (%)	LOAD (ksf)
● B-1 @ 19.0	silty clay	101.2	22.3	93	



J.N. 1007-12	CONSOLIDATION TEST RESULTS	June, 2012
GEO-ADVANTEC, INC.		

CONSOLIDATION - STRAIN 236-12.GPJ PETRA.GDT 6/29/12



SAMPLE LOCATION	DESCRIPTION	FRICTION ANGLE (°)	COHESION (PSF)
● B-1 @ 9.0	silty clay	39	264

NOTES:

J.N. 1007-12	DIRECT SHEAR TEST DATA UNDISTURBED TEST SAMPLES	June, 2012
GEO-ADVANTEC, INC.		

DIRECT SHEAR 236-12.GPJ PETRA.GDT 6/29/12

SoilCor
CORROSION & THERMAL SCIENCES
41765 Hawthorn Street Murrieta, CA 92562
ph (951) 894-2682 • fx (951) 894-2683

Work Order No.: 12F2199

Project No.: 236-12
Project Name: Geo-Advantec
Report Date: June 27, 2012

Laboratory Test(s) Results Summary

The subject soil sample was processed in accordance with California Test Method CTM 643 and tested for pH / Minimum Resistivity (CTM 643), Sulfate Content (CTM 417) and Chloride Content (CTM 422). The test results follow:

Sample Identification	pH	Minimum Resistivity (ohm-cm)	Sulfate Content (mg/kg)	Sulfate Content (% by wgt)	Chloride Content (ppm)
Bulk Sample	7.9	880	ND	ND	20

*ND=No Detection

We appreciate the opportunity to serve you. Please do not hesitate to contact us with any questions or clarifications regarding these results or procedures.

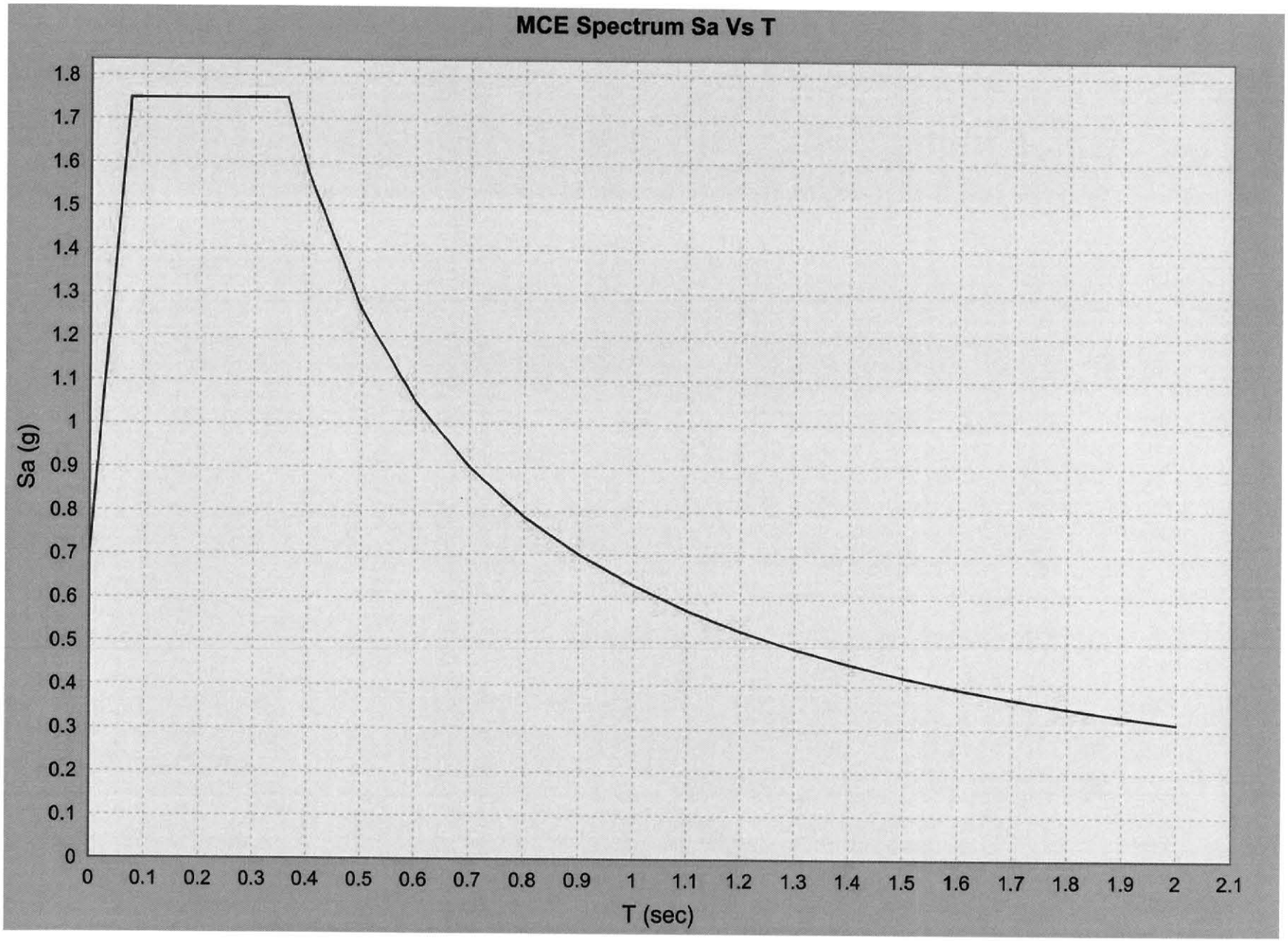
Ahmet K. Kaya, Laboratory Manager

ASTM INTERNATIONAL ORGANIZATIONAL MEMBER

Geo-Advantec Inc. Geotechnical Engineering,Earthquake Engineering,Engineering Geology		CORROSIVITY SERIES	
PROJECT NO.	1007-12	WAT THAI TEMPLE CHINO HILLS, CA	
DATE	06-27-2012		

APPENDIX G

RESPONSE SPECTRA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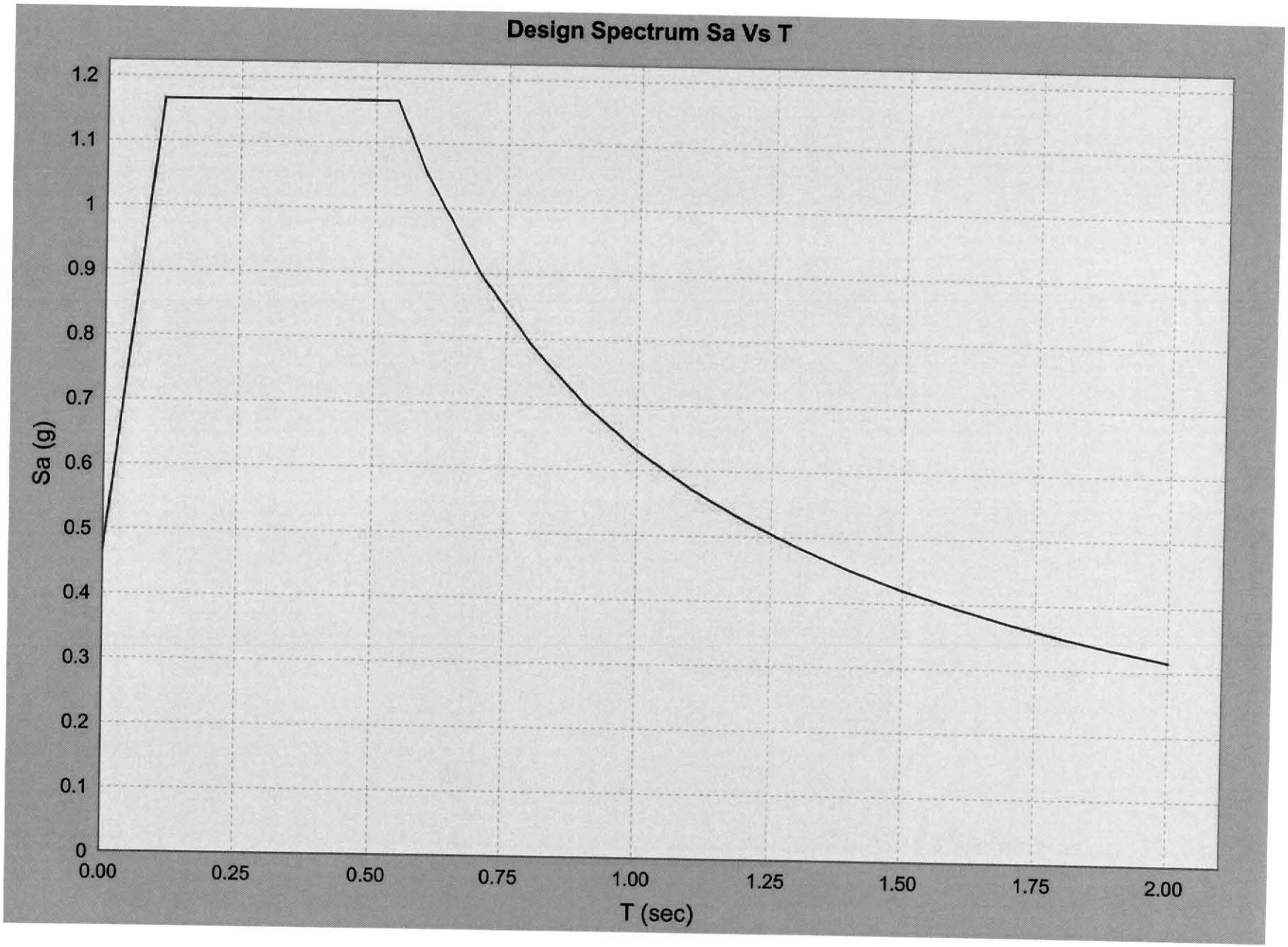
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2 2.1
T (sec)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Sa (g)
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0
0.00
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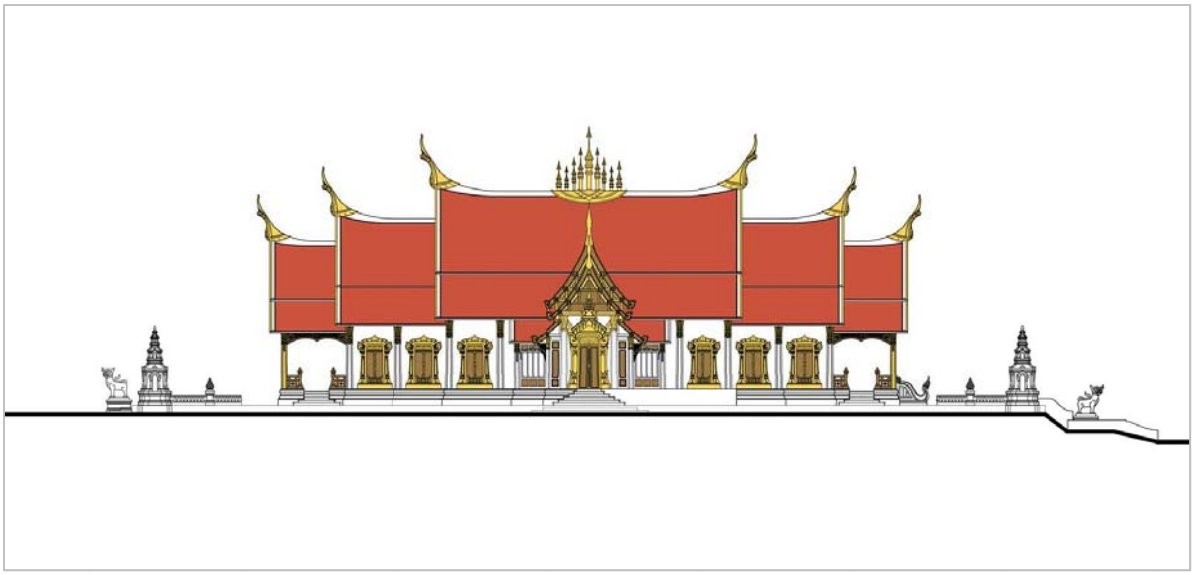
0.75
1.00
1.25
1.50
1.75
2.00
T (sec)

Appendix D

Noise Study



Noise Study

New Buddhist Temple Project

prepared for
City of Chino Hills
Community Development Department
14000 City Center Drive
Chino Hills, California 91709

prepared by
Rincon Consultants, Inc.
250 East 1st Street, Suite 301
Los Angeles, California 90012

February 2017

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
www.rinconconsultants.com

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1 Project Description

1.1 Introduction

This study is an analysis of the potential noise impacts of a Buddhist Temple located at 948 Chino Hills Parkway at the Wat Phra That Doi Suthep USA temple in the City of Chino Hills. This report has been prepared by Rincon Consultants, Inc. for use by the City of Chino Hills, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of the study is to analyze the proposed project's temporary noise impacts associated with construction activity and long-term noise impacts associated with project operation, including the potential exposure to roadway noise, and increased festival and noise temple operation.

1.2 Project Summary

The following describes the project background and the currently proposed project, as well as the analytical approach taken to complete the noise study.

Project Background

The project site is the site of an existing Buddhist Temple which is mostly developed with several existing buildings and structures associated with its current use. The site has 3,520 square feet of dorm space and a 5,470 square foot hall. Typical activity at the project site involves 15 to 20 visitors per day Monday through Saturday and 60 to 80 people on Sunday. The Temple hosts special events ten times per year with 80 to 100 attendees, as wells as two additional major events (Songkarn Festival and Kathina and Loy Kathong Day) per year with 150 to 200 attendees.

The grounds surrounding the existing buildings and structures consist of paved driveways and parking lots surrounded by landscaped lawns and gardens. The areas of the project site that are not dominated by development or ornamental landscaping consist of bare dirt with gravel and sparse vegetation. Based on aerial photographs the site has been developed and utilized as a Buddhist Temple since at least 2002. The existing site conditions are shown in Figure 1.

Current Proposal

The proposed project involves the development of new structures at the existing Buddhist Temple site to accommodate temple expansion. The project would combine three parcels into one for the proposed development, which would occur in three phases. The proposed site plan is shown in Figures 2. Table 1 provides the activities that currently occur on the project site and the anticipated growth under the each phase of the proposed project. The following is a description of the new facilities during each phase of construction. Construction of the proposed project would begin in 2018 and would last an estimated 5 years.

Phase I of Construction

Construction during Phase I would include the Buddha Hall that would be a 3,100-square foot, one-story structure located on the eastern portion of the project site surrounded by a plaza. The maximum occupancy of the Buddha Hall would be 80 persons with 60 visitors every Sunday and 20 monks in the hall daily. The building would be approximately 39 feet in height.

Table 1 Existing and Proposed Activity Use by Phase

Activity	Existing Conditions	Phase I	Phase II	Phase III
Typical Use	Monday-Saturday: 15 to 20 people onsite Sunday: 60 to 80 visitors	Monday-Saturday: 30 to 50 people onsite Sunday: 80 to 100 visitors	Monday-Saturday: 30 to 50 people onsite Sunday: 80 to 100 visitors	Monday-Saturday: 50 to 60 people onsite Sunday: 100 to 110 visitors
Special Events (10 per year)	80-100 attendees	100-120 attendees	100-120 attendees	120-150 attendees
Songkarn Festival, Kathina & Loy Kathong Day	150 to 200 attendees	200-300 attendees	200-300 attendees	250-350 attendees

The kitchen and restroom would be within a 1,900-square foot structure located between the northern portion of Buddha Hall and the proposed meditation area of the multipurpose building. Activities in the kitchen and restrooms would occur daily.

Phase II of Construction

Phase II of construction would include a new dormitory that would be a 9,025 square foot, two-story building approximately 28 feet in height, located on the western portion of the center of the project site. The first and second floor would each include 12 rooms and two guest rooms for a total of 24 rooms and four guest rooms. The building would also contain a lobby area on each floor.

Phase III of Construction

The existing dormitory and meeting hall would be demolished during Phase III. Construction would include the meditation area that would be a 3,600-square foot building located in the center of the site (between the dormitory and the building with the kitchen and bathrooms). The maximum occupancy of the meditation area would be 120 persons, with activity occurring only on Sundays.

The classroom/office building would consist of six dance classrooms (3,100 square feet) and one office room (1,180 square feet). The building would be located in the center of the site. The dance classrooms would have a max occupancy of 40 persons with activity occurring only on Sundays, while the offices would have a total max occupancy of four persons which activity occurring daily. The building would also contain men's and women's restrooms.

Parking

The project site would contain a total of 300 parking spaces, including seven handicapped-accessible spaces. All parking spaces would be located around the exterior of the site with a 15-foot parking setback. Racks for bicycle parking would be provided onsite. The following is a breakdown of the new and existing parking stalls per phase of construction:

- Phase I – construction of 131 new parking stalls and use of 49 existing stalls

- Phase II – no parking area would be developed
- Phase III – demolition of the 49 existing stalls and construction of an additional 169 parking stalls for a total of 300 parking stalls.

Landscaping

The project site would be landscaped around the exterior as well as throughout the site and would include ornamental tree species such as pink dawn chitalpa, Chinese flame tree, evergreen pear, and deodar cedar. Approximately 39 percent of the entire project site would be landscaped and an additional 7.5 percent of the parking area would be landscaped. The following is a breakdown of project landscaping per phase of construction:

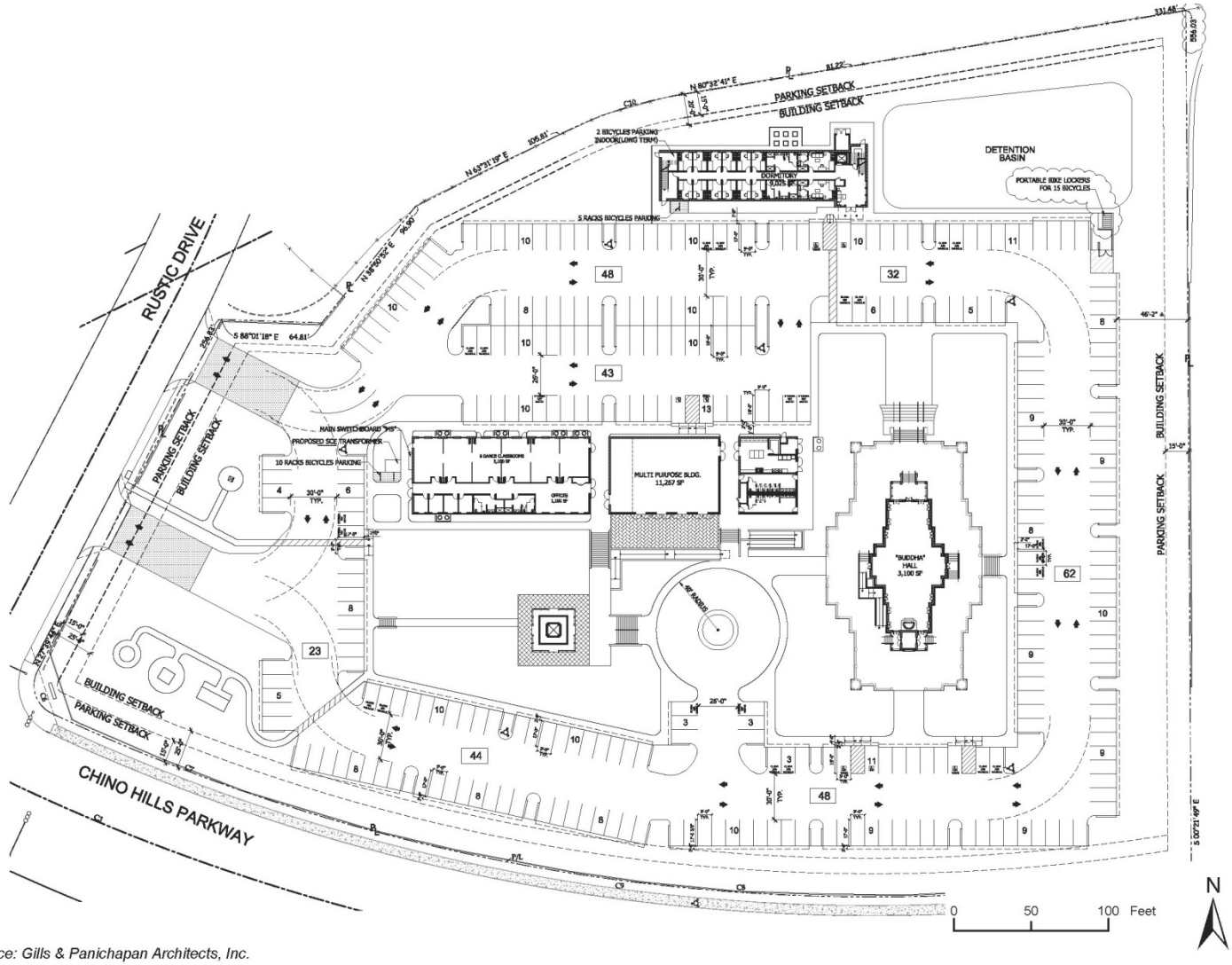
- Phase I – 25,871 square feet of site and 4,655 square feet of parking area landscaping
- Phase II – 6,029 square feet of site, no parking landscaping would be included during this phase
- Phase III – 93,018 square feet of site and 4,343 square feet of parking area landscaping

Farmers Market

A farmers market currently occurs onsite from 10:00 AM to 3:00 PM twice a month on Sundays. During operation of the proposed project, the farmers market would occur at the project site twice a month on Sundays from 9:00 AM to 4:00 PM. Temporary kiosks would occupy the site in the western portion of the project site to the south of the classroom/office building.

Figure 1 Existing Site Conditions

Figure 2 Project Site Plan



Source: Gills & Panichapan Architects, Inc.

2 Background

2.1 Overview of Sound 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 pressure 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).

Sound pressure level is measured on a logarithmic scale with the 0 dBA level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the ambient noise level to be judged as twice as loud. In general, a 3 dBA change in the ambient noise level is noticeable, while 1-2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while areas adjacent to arterial streets are typically in the 50-60+ dBA range. Normal conversational levels are usually in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA (Federal Transit Administration [FTA], Transit Noise and Vibration Impact Assessment, 2006). The manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FTA, Transit Noise and Vibration Impact Assessment, 2006).

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 PM to 7 AM) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 PM to 10 PM and a 10 dBA penalty for noise occurring from 10 PM to 7 AM. Noise levels described by Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq to Ldn. However, in urban areas near heavy traffic, the peak hourly Leq is typically 2-4 dBA lower than the daily Ldn or CNEL. In less heavily developed areas, such as suburban areas, the peak hourly Leq is often roughly equal to the daily Ldn or CNEL. For rural areas with little nighttime traffic, the peak hourly Leq will often be 3-4 dBA greater than the daily Ldn or CNEL value (California State Water Resources Control Board [CSWRCB], Appendix G: Background Information on Acoustics, 1999). The project site is located in a suburban area; therefore, the peak hourly Leq at the project site is approximately equivalent to the daily Ldn or CNEL value.

Vibration is a unique form of noise because its energy is carried through buildings, structures, and the ground, whereas 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 passing trucks. 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. 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.

2.1.1 Existing Project Area Noise Levels

The most common and primary sources of noise in the project site vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles) along Carbon Canyon Road and Chino Hills Parkway. Additional vehicle traffic is present on adjacent residential roadways (e.g., Champion Street), but is substantially lower than traffic along Carbon Canyon Road and Chino Hills Parkway. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. Additional sources of noise in the project site vicinity include activities associated with nearby residential uses , including delivery trucks and landscaping equipment. Existing noise on the project site includes noise from current operation of the Buddhist Temple, which has a maximum of 80 attendees on Sundays and a dormitory that houses four monks full time on the site.

In order to determine existing noise levels on the project site, four peak hour weekday evening 15-minute noise measurements (Leq[15] dBA) were taken on and near the project site using an ANSI Type II integrating sound level meter on January 27, 2017. Figure 3 shows the locations of noise measurements. These noise measurements provide existing sound levels, which are primarily due to roadway noise from Chino Hills Parkway and Carbon Canyon Road. The noise monitoring results are summarized in Table 2. The Leq[15] dBA ranged from 70.0 dBA at Noise Measurement Locations 2 and 4 on Chino Hills Parkway to 55.9 Leq[15] dBA at Noise Measurement Location 3 on the project site.

Figure 3 Noise Measurement Locations

Table 2 Project Vicinity Noise Monitoring Results - PM Peak Hour

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	Leq[15] (dBA)[1]	Lmin (dBA)	Lmax (dBA)
1	Rustic Drive	6:03 PM – 6:18 PM	20 feet[2]	56.4	47.8	72.5
2	Chino Hills Parkway at Buddhist Temple	5:41 PM – 5:56 PM	50 feet[3]	70.0	56.3	84.5
3	Buddhist Temple Site	6:29 PM – 6:44 PM	320 feet[3]	55.9	46.4	67.4
4	Chino Hills Parkway east of Buddhist Temple	5:19 PM – 5:34 AM	45 feet[3]	70.0	48.2	90.6

See Figure 3 for a map of Noise Measurement Locations

[1] The equivalent noise level (Leq) is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). For this measurement the Leq was over a 15-minute period (Leq[15]).

[2]Distance to centerline of Rustic Drive .

[3]Distance to centerline of Chino Hills Parkway.

Source: Rincon Consultants, field measurements on January 27, 2017 using ANSI Type II Integrating sound level meter.

The differences between noise measurements shown in Table 2 are generally due to the attenuating effects of distance and structural obstacles on noise as it propagates from the source, combined with the additive properties of noise converging from multiple sources. For example, Noise Measurement Location 3 is 320 feet from Chino Hills Parkway, whereas Measurement Location 2 is 50 feet from the centerline of Chino Hills Parkway, and consequently, experiences a higher noise level.

2.1.2 Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Typically, noise sensitive land uses include single family residential, multiple family residential, churches, hospitals and similar health care institutions, convalescent homes, libraries, and school classroom areas. The predominant noise sensitive land uses in the City are residential uses.

Noise-sensitive receptors closest to the project site include existing multi-family residential development approximately 50 feet east of the project site. Additional single-family residences are located approximately 100 feet to the west across Rustic Drive and 165 feet to the north across the stormwater channel. The new monk dormitory, and the redeveloped temple would be additional noise sensitive receptors.

2.2 Regulatory Setting

2.2.1 City of Chino Hills General Plan Noise Element

The Chino Hills General Plan, adopted in February 2015, provides standards for exterior and interior ambient noise levels. In accordance with mandatory guidelines from the State Department of Housing and Community Development, the General Plan states that residential land uses cannot be exposed to

outdoor ambient noise levels in excess of 65 dBA CNEL and sufficient insulation must be provided to reduce exterior ambient noise levels to 45 dBA CNEL within interior spaces. Public institutions, such as churches, do not have an exterior ambient noise threshold, however public institutional land uses cannot be exposed to interior noise levels in excess of 45 dBA CNEL. Chapter 16.48.020 of the CHMC restates that the noise standards contained in Table N-1 "Noise/Land Use Compatibility Matrix" in the Noise Element of the General Plan apply to land uses citywide and are to be used to define acceptable and unacceptable noise levels.

Goal N-2 Limit new noise conflicts.

Policy N-2.1 Minimize increases in noise levels due to new land use and transportation facility decisions.

- **Action N-2.1.1** Enforce the standards of Table 7-1 – Land Use/Noise Compatibility Matrix, which specify acceptable exterior and interior noise limits of various land uses throughout the City.
- **Action N-2.1.2** Continue to assess projects through the subdivision, site plan, conditional use permit, and other development review processes and incorporate conditions of approval and mitigation measures that ensure noise compatibility where appropriate.
- **Action N-2.1.3** Require a noise study to be performed and appropriate noise attenuation to be incorporated to reduce interior noise levels to 45 dB CNEL or less prior to approving any multifamily or mixed-use residential development in an area with a CNEL of 65 dB or greater.
- **Action N-2.1.5** Ensure all new development provide adequate sound insulation or other protection from existing and projected noise sources.
- **Action N-2.1.7** Ensure that all new hotels, motels, multifamily and single-family dwellings to be developed within an area where the outdoor CNEL exceeds 60 dB are designed to achieve an indoor CNEL of 45 dB or less.

The General Plan includes noise standards for maximum exterior and interior noise levels for various land uses throughout the City. These standards are shown in Table 3.

Table 3 Interior/Exterior Noise Standards

Land Use	Maximum Interior Noise Level (dBA CNEL)	Maximum Exterior Noise Level (dBA CNEL)
Residential: Duplex, Single-Family, and Multi-Family	45	65
Mobile Homes	--	65
Commercial		
Hotel, Motel, Transient Lodging	45	65
Commercial, Retail, Bank, Restaurant, Health Club	55	
Office Building, Research and Development, Professional Offices	50	--
Ampetheater, Concert Hall, Auditorium, Meeting Hall, Movie Theater	45	--
Gymnasium	50	--
Manufacturing, Warehousing, Wholesale, Utilities	65	--
Open Space		
Parks	--	65
Institutional/Public Facility		
Hospital, Schools, Classrooms	45	65
Churches, Libraries	45	--

Source: Chino Hills, General Plan, 2015.

2.2.2 City of Chino Hills Municipal Code

Chapter 16.48.020 of the CHMC restates that the noise standards contained in Table N-1 "Noise/Land Use Compatibility Matrix" in the Noise Element of the General Plan apply to land uses citywide and are to be used to define acceptable and unacceptable noise levels.

The City does not have specific standards or limits related to construction noise or construction vibration. However, the CHMC Section 16.48.030 states that no ground vibration shall be allowed which can be felt without the aid of instruments at or beyond the subject property line, nor will any vibration be permitted which produces a particle velocity greater than or equal to two-tenths (0.2) of an inch per second measured at or beyond the lot line. The City's noise ordinance (CHMC Section 8.08.020) provides an exemption to City noise and vibrations standards for construction provided that such activities take place between 7:00 AM and 7:00 PM on weekdays, and between the hours of 8:00 AM and 6:00 PM on Saturdays, excluding federal holidays, unless such activity is necessary for the immediate preservation of life, health, or property.

3 Impact Analysis

3.1.1 Methodology and Significance Thresholds

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with operation of the project. Impacts would be significant if they would exceed the following thresholds of significance, based on Appendix G of the State CEQA Guidelines:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

The project is located over 6 miles from the nearest airport, Chino Airport, therefore noise impacts related to airports (CEQA Thresholds 5 and 6) would not occur, and are not discussed further in this analysis. Impacts related to CEQA thresholds 1, 2, 3, and 4 are discussed below.

On-Site Noise

As discussed in Section 2.1.1 Rincon Consultants collected four 15-minute noise measurements during the PM peak traffic hour (see Figure 3 for noise measurement locations relative to the project site and Table 1, for noise measurement results). The assessment of onsite noise exposure is based on the four noise measurements ranging from 55.9 dBA Leq on the project site to 70.0 dBA Leq along Chino Hills Parkway.

The City of Chino Hills has adopted exterior and interior noise standards for residential land uses that state that residences cannot be exposed to outdoor ambient noise levels in excess of 65 dBA CNEL and sufficient insulation must be provided to reduce exterior ambient noise levels to 45 dBA CNEL within interior spaces. However, Chino Hills has no exterior noise standards for churches or places of worship, such as the Buddhist Temple, only an interior noise standards of 45 dBA CNEL. The proposed project would have a significant impact if it would expose proposed sensitive receptors to noise levels in excess of these standards.

Groundborne Vibration

Construction of the proposed project could potentially generate vibration impacts at nearby sensitive receptors. 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. The vibration thresholds established by the FTA are 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). The CHMC Section 16.48.030 states that no ground vibration shall be allowed which can be felt without the aid of instruments at or beyond the subject property line, nor will any vibration be permitted which produces a particle velocity greater than or equal to two-tenths (0.2) of an inch per second measured at or beyond the lot line.

The City's vibration ordinance references the City's noise ordinance (CHMC Section 8.08.020), which exempts construction-related noise and vibration provided that construction activities take place between 7:00 AM and 7:00 PM on weekdays, and between the hours of 8:00 AM and 6:00 PM on Saturdays, excluding federal holidays, unless such activity is necessary for the immediate preservation of life, health, or property. Construction vibration would be considered significant if it occurred outside of the specified hours.

Construction Noise and Groundborne Noise

Construction noise estimates are based upon noise levels reported by the FTA Office of Planning and Environment (FTA, Transit Noise and Vibration Impact Assessment, 2006), and the distance to nearby sensitive receptors. Reference noise levels from the FTA *Noise and Vibration Impact Assessment* were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dBA per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Ground absorption adds to the attenuation from distance alone. Excess ground attenuation may vary from zero to ten dBA per doubling of distance, depending on the complexity of terrain (California Department of Transportation [Caltrans], Technical Noise Supplement to the Traffic Noise Analysis Protocol, 2013). Generally, hard, reflective surfaces like parking lots or smooth bodies of water will not substantially increase the attenuation rate from distance alone; whereas, soft, absorptive surfaces like soft dirt, grass, or scattered bushes and trees would increase attenuate from distance alone by 1.5 dBA per doubling of distance. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of distance.

Construction noise estimates are based on noise levels reported by the FTA Office of Planning and Environment (FTA, Transit Noise and Vibration Impact Assessment, 2006), the distance between construction activity and nearby sensitive receptors, and equipment to be used during each phase of construction. Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative estimate of actual construction noise. Equipment used during construction was obtained from California Emissions Model (CalEEMod) run prepared for the project. The City's noise ordinance (CHMC Section 8.08.020) provides an exemption to City noise for construction provided that such activities take place between 7:00 AM and 7:00 PM on weekdays, and between the hours of 8:00 AM and 6:00 PM on Saturdays, excluding federal holidays, unless such activity is necessary for the immediate preservation of life, health, or property. Construction noise would be considered significant if it occurred outside of the specified hours.

Roadway Noise

Noise levels associated with existing and future traffic along area roadways were estimated using the U.S. Department of Transportation Federal Highway Administration's (FHWA) Traffic Noise Model 2.5 (TNM2.5) (FHWA, Traffic Noise Model User's Guide, 2004) (noise model data is provided in Appendix A). TNM 2.5 was used to estimate noise levels generated by traffic on area roadways under existing and future conditions, with and without project-added traffic. The analysis of anticipated noise levels from

traffic generated by the project uses data from the traffic study prepared for the project by Linscott, Law, & Greenspan, Engineers (LLG, Traffic Impact Analysis, 2017).

This analysis uses recommendations contained in the FTA's *Transit Noise and Vibration Impact Assessment* (2006) as guidance to determine whether or not a change in traffic would result in a substantial permanent increase in roadway noise. Using the FTA criteria, the allowable noise exposure increase is based on the existing ambient noise level. Roadways with lower ambient noise levels have a higher allowable increase, while roadways with a higher ambient noise level are allowed a lower noise increase. Traffic-related noise increases would constitute a significant impact if roadway noise levels would increase by more than the levels indicated in Table 4.

Table 4 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

Source: FTA, Transit Noise and Vibration Impact Assessment,2006.

The project would generate new vehicle trips that would use area roadways. Traffic generated by the project was estimated by LLG in the Traffic Impact Analysis (traffic study) prepared for the project (LLG, Traffic Impact Analysis, 2017). Based on the traffic study, the project would generate 100 daily trips, 12 AM peak hour trips and 12 PM peak hour trips (LLG, Traffic Impact Analysis, 2017). The peak hour trips are representative of the worse case impact because ten percent of the average daily trips would be ten trips per hour, based on the assumption that the number of average daily vehicle trips are ten times peak hour trips. Project-generated trips would be distributed among area roadways: Chino Hills Parkway, Carbon Canyon Road, Peyton Drive, and Eucalyptus Avenue.

Elevations of all receptors, buildings, and roadways in TNM were based on Google Earth elevations. It was assumed that a person at receptors would hear traffic noise at a height of six feet above ground level. The results of the TNM analysis for existing traffic were compared to measured noise levels to ensure the accuracy of the model in the project site vicinity. Table 5 provides a comparison of measured and modeled noise levels at four locations on and near the project site where the primary noise source is motor vehicles on Chino Hills Parkway.

Table 5 Existing Noise Levels – Modeled

#	Measurement Location	Existing Noise Level (dBA Leq) Measured Ambient Noise (1)	Modeled Traffic Noise (2)	Difference in Noise Level (2 minus 1)
1	Rustic Drive	56.4	55.9	-0.5
2	Chino Hills Parkway at Buddhist Temple	70.0	71.7	+1.7
3	Buddhist Temple Site	55.9	57.9	+2.0
4	Chino Hills Parkway east of Buddhist Temple	70.0	70.9	+0.9

Source: Rincon Consultants, field measurements on January 27, 2017 field using ANSI Type II Integrating sound level meter. See Appendix A for model results. Federal Highway Administration, Traffic Noise Model Version 2.5

As shown in Table 5, modeled noise is 1.7 dBA and 0.9 dBA higher than Noise Measurements 2 and 4 and both of these measurement locations are unprotected from traffic noise on Chino Hills Parkway. Modeled noise is 2.0 dBA higher than Noise Measurement 3 which is in the eastern portion of the project site. Modeled noise is 0.5 lower than Noise Measurement 1, which is at the border of the project site along Rustic Drive set back from the primary noise sources on Chino Hills Parkway and Carbon Canyon Road. The difference between modeled and measured noise levels at the noise measurement locations are less than 3 dBA, which is generally when a change in noise level is perceivable. Based on guidance in the FHWA Traffic Noise Model User's Guide, no adjustments should be made for differences of less than 3 dBA between model results and field measurements (FHWA, Traffic Noise Model User's Guide, 2004). Because the noise levels calculated by the noise model are similar to the measured noise levels shown in Table 1, the model is an appropriate tool for determining existing and future noise levels for this area.

3.1.2 Project Impacts

a Groundborne Vibration

Construction of the proposed project could potentially increase groundborne vibration on the project site, but construction effects would be temporary, occurring in three distinct phases from 2018 to 2023. The nearest sensitive receptors are residences approximately 50 feet east of the project site. Based on the information presented in Table 6, during construction, these residences would be exposed to maximum vibration levels of approximately 81 Vdb or 0.031 PPV from construction of the proposed project because vibration, like noise, attenuates over distance. For a conservative vibration estimate, it is assumed that a backhoe has similar vibration levels as a small bulldozer, paving equipment has similar vibration levels as a large bulldozer, and that loaded trucks and a jackhammer would be used on the project site during construction.

Table 6 Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB at Nearest Sensitive Receptors	Approximate inches per second (PPV) (at Nearest Sensitive Receptors
	50 Feet	50 feet
Large Bulldozer	81	0.031
Loaded Trucks	80	0.027
Jackhammer	68	0.012
Small Bulldozer	52	0.001

Source: FTA, Transit Noise and Vibration Impact Assessment, 2006.

As discussed above, 0.20 inches per second at or beyond the lot line is the City's vibration threshold. During project construction the vibration levels at residences to the east would not exceed the groundborne velocity threshold level of 0.2 inches per second. In addition, the City of Chino Hills exempts vibration associated with construction activities between the hours of 7:00 AM and 7:00 PM during weekdays and 8:00 AM and 6:00 PM on Saturdays (CHMC, Section 8.08.020). The proposed project would be required to comply with these construction hour restrictions and construction would not occur during recognized sleep hours for residences or on Sundays when temple attendees visit the project site.

b Temporary Construction Noise Impacts

Project construction would occur over three construction phases and would commence in spring of 2018 and be completed in the summer of 2023. Appendix B shows the typical peak noise levels associated with common categories of heavy construction equipment. Noise sensitive uses closest to the project site include single-family residences located 50 feet to the east. These sensitive land uses may experience a temporary noise increase during construction activities on the project site. Table 6 shows the maximum expected noise levels at the nearest sensitive receptors for each project phase, Phases I through III, and each phase of construction.

Additional factors to consider are that the estimated construction noise levels analyze a worst case scenario and do not take into account the fact that equipment is dispersed in various areas of the site in both time and space. Due to site and equipment limitations, only a limited amount of equipment can operate near a given location at a particular time. In addition, construction equipment estimates used for the analysis for demolition, grading, building construction, paving, and architectural coating noise levels are representative of worse case conditions, since it is assumed that all the equipment would operate simultaneously and continuously for at least 80 percent of the work day. Therefore, the noise levels presented in Table 7 represent a conservative estimate of construction noise.

Table 7 Construction Noise Levels by Project Phase and Construction Phase

Construction Phase	Equipment	Estimated Noise at 50 feet (dBA Leq)
Project Phase I		
Site Preparation	Backhoe, Grader, Scraper	85
Grading	Backhoe, Dozer, Grader	83
Building Construction	Backhoe, Crane, Forklift, Generator, Welder	85
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	85
Project Phase II		
Site Preparation	Backhoe, Grader	80
Grading	Backhoe, Dozer, Saw	81
Building Construction	Backhoe, Crane, Forklift	85
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	86
Project Phase III		
Demolition	Dozer, Excavator, Saw	86
Site Preparation	Backhoe, Dozer	85
Grading	Backhoe, Dozer, Excavator, Grader	85
Building Construction	Backhoe, Crane, Forklift, Generator, Welder	86
Architectural Coating	Air Compressor	75
Paving	Backhoe, Concrete Mixer, Paver, Roller	87

Source: See Appendix B for equipment noise impact data sheets and assumptions.

Construction would increase ambient noise levels to up to about 85 dBA Leq during the site preparation and paving phases of the first phase of project construction; up to about 86 dBA Leq during the paving phase of the second phase of project construction; and up to about 87 dBA Leq during the paving phase of the third phase of project construction. The existing dormitory on the project site would not be demolished until the Phase III of project construction and would therefore be exposed to construction noise. Residences to the north, west, and east of the project site would also be exposed to noise exceeding ambient levels during project construction.

The City of Chino Hills exempts noise associated with construction activities between the hours of 7:00 AM and 7:00 PM during weekdays and 8:00 AM. and 6:00 PM on Saturdays (CHMC, Section 8.08.020). Based on these hours, construction would not occur during recognized sleep hours for residences or on

Sundays when temple attendees visit the project site. The proposed project would be required to comply with construction hour restrictions.

c Long-Term Operational Noise Impacts

The proposed project would increase intensification on the project site by increasing the size of the temple and dormitory, and adding additional site features. Existing sensitive uses near the project site may periodically be subject to noise associated with operation of the proposed project, including delivery trucks, HVAC systems, increased site use and other general activities associated with the proposed project.

Direct Operational Noise Impacts

Increased Activity

BUDDHIST TEMPLE ATTENDANCE

The Buddhist Temple currently supports 15 to 20 members per day at the temple from Monday to Saturday and 60 to 80 members on Sunday. When the final project phase is finished 50 to 60 members per day would be present from Monday to Saturday and 100 to 110 members would be present on Sunday. Assuming that all members would be on site at once and that the maximum number of members are present, peak activity at the project site would increase by 30 to 45members per day on Monday through Saturday and 20 to 50members on Sunday.

Ambient noise in the project vicinity was measured at 55.9 dBA Leq at the eastern portion of the site and 70 dBA Leq along Chino Hills Parkway (Table 2). The major source of noise in the project site vicinity is traffic noise. This is demonstrated in Table 4, which shows that modeled ambient noise levels, which include only roadway sources, are consistent with the measured ambient noise levels taken in the vicinity of the project site.

The increased attendance of 30 to 45 members on Monday to Saturday and 20 to 50 members on Sunday would result in additional parking lot-related noise. Parking lot related noise would be temporary and intermittent, occurring only when drivers enter and leave the facility and attendees walk from the parking area to the temple. The majority of on-site noise associated with increased attendance would be captured within the temple building and would not affect ambient noise. Table 8 lists noise levels associated with typical activities in parking lots, including talking, driving cars, door slamming, and engine start up. As shown in Table 8, the maximum noise level generated from a parking lot is from car horns and alarms, which generate noise estimated at 69 dBA at a distance of 50 feet, and tire squeals, which generate an estimated 66 dBA at a distance of 50 feet. These sources of parking lot noise are intermittent and spontaneous and while increased attendance would incrementally increase the frequency of such events, these sources would not substantially affect overall ambient noise levels. More typical parking lot noise ranges from 36 dBA Lmax at 50 feet from people talking to 50 dBA Lmax at 50 feet from vehicles traveling on-site. While the project would increase the frequency of conversations and vehicles traveling on-site, noise associated with these sources is lower than ambient noise in the project site vicinity, which ranges from 56 and 70 dBA Leq and is dominated by roadway noise sources. The additional noise sources from increased attendance would add incremental noise and would not double existing noise at the project site. Therefore, increased noise would be less than 3 dBA and imperceptible. Impacts from increased attendance would not have a substantial impact.

Table 8 Typical Parking Lot Noise Sources

Source	Level at 20 Feet (dBA)	Level at 50 Feet (dBA)
Autos at 14 mph	58	50
Car Alarm Signal	77	69
Car Alarm Chirp	62	54
Car Horns	77	69
Door Slams or Radios	72	64
Talking	44	36
Tire Squeals	74	66

Source: Gordon Bricken and Associates, 2012.

Estimates are based on actual noise measurements taken at various parking lots.

BUDDHIST TEMPLE EVENTS

The Buddhist Temple hosts the following ten special events and two major events:

- New Year Day, January 1
- Makhapuja's Day
- Memorial Ceremony
- Songkarn Festival Day (major event)
- Visakha Puja's Day
- Anniversary Temple's Celebration
- Asalha Puja Day
- Thai Mother's Day
- Sart Thai's Day
- Rain-Reseat End Day
- Kathina and Loy Dathong (major event)
- Thai Father's Day

During special events attendance at the temple would increase by 50members per day. Such events are anticipated to occur about ten times per year. During major events, the most widely attended holidays of Songkarn Festival Day and Kathina and Loy Kathong, attendance would increase by 150 members per day twice per year. As discussed above, ambient noise levels on the project site are mainly attributed to vehicle traffic and were measured at between 56 dBA and 70 dBA Leq. An increase in attendance during events would result in a noise increase associated with additional people on the project site and consists of conversations and vehicles entering and exiting the property.

An increase of 50 attendees during special events ten times per year and 150 attendees twice per year during major events would result in increased parking lot-related noise on the project site, including vehicles entering and exiting the property. Parking lot-related noise would be temporary and intermittent occurring only when attendees walk from the parking area to the temple. Table 7 lists noise levels associated with typical activities on parking lots, including talking, driving cars, door slamming, and engine start up. As shown in Table 8, the maximum noise level generated from a parking lot is from car horns and alarms estimated at 69 dBA at a distance of 50 feet and tire squeals at 66 dBA at a distance of 50 feet; these sources of parking lot noise are intermittent and spontaneous and while increased attendance at the Buddhist Temple during special and major events would increase the number of visitors onsite, overall existing ambient noise levels would not be affected. More typical parking lot noise ranges from 36 dBA Lmax at 50 feet from people talking to 50 dBA Lmax at 50 feet from vehicles traveling on-site. While the project would increase the frequency of conversations during events (36 dBA

Lmax at 50 feet) and vehicles traveling on-site (50 dBA Lmax), these sources of noise are lower than the existing ambient noise in the project vicinity, which ranges from 56 and 70 dBA Leq and is dominated by roadway noise sources. The additional noise sources from increased attendance would add incremental noise and would not double existing noise at the project site. Therefore, increased noise would be less than 3 dBA and imperceptible.

During festivals, attendees could be outside of the Buddhist Temple on project site. Noise from increased conversations during a wedding event was determined to be minimal in a Noise Study for an outdoor wedding event at the Tropical Paradise in Los Angeles County (Rincon Consultants, Noise Study for a Wedding Event at the Tropical Paradise Site Located at 10350 Santa Rosa Road, Ventura County California, 2013). Similar to the project site, ambient noise at the site of the wedding event was dominated by traffic noise. The study concluded that noise from the outdoor wedding event was minimal and intermittently audible from 145 to 940 feet from the event and not audible at other measurement locations from 80 to 3,270 feet; therefore, the wedding event did not materially contribute to ambient noise. Noise from additional attendance at events at the project site would minimally increase ambient noise levels. Events currently occur at the project site and conservatively assuming that all attendees would be outside at once the addition of 50 to 150 attendees would not result in a perceptible increase in noise.

The loudest noise during events at the Buddhist Temple is from amplifiers. Amplifiers are currently used during major and special events at the project site. Rincon Consultants conducted three field measurements in Ventura County on September 6, 2016 using an ANSI Type-2 Integrating sound level meter to measure amplifier noise (see Appendix C for noise data). The noise level at 75 percent volume 100 feet from the source was 52.8 dBA Leq, which was 0.8 dBA higher than the ambient noise level. The noise level at 90 percent volume 100 feet from the source was 58.9 and increased ambient noise level by 6.9 dBA. Amplifiers for the proposed project would continue to be used at the same level and frequency following completion of the proposed site improvements because additional attendance would not require increased amplification. Because amplifiers are the loudest noise source during events, and the noise associated with amplifiers would not increase as part of attendee increase, a substantial increase in ambient noise would not occur. Conversational noise and parking lot noise would be minimal in imperceptible as a result of increased attendance. Therefore, potential noise impacts from special and major events would not have a substantial impact.

Farmers' Market

A farmers market is held on the project site twice a month on Sundays from 10:00 AM to 3:00 PM. As part of the proposed project the farmers market would be extended two hours on the project site on Sundays from 9:00 AM to 4:00 PM. The increase in hours of market operation would increase the existing noise during those two hours but would not increase daytime ambient noise levels. The increased hours from 9:00 AM to 4:00 PM would not extend noise to the hours to nighttime hours where CNEL gives a penalty for noise. Therefore, ambient noise levels would not increase and noise impacts from the farmers market would not be substantial.

Ground Mounted HVAC Equipment

Noise generated by on-site operations is expected to include noise associated with mechanical equipment such as ventilation and heating systems mounted on the ground. Noise levels from commercial heating, ventilation and air conditioning (HVAC) equipment can reach 100 dBA Leq at a distance of three feet (U.S. EPA, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971). The HVAC units on the project site would have noise shielding screens, reducing noise to no greater than 55 dBA Leq at 50 feet from the source.

Ground mounted equipment would be placed approximately 200 feet from residences to the east of the project site. At a distance of 200 feet HVAC equipment would be 43 dBA Leq or 47.3 dBA CNEL. Existing noise levels near the sensitive receptors east of the project site are 55.9 dBA Leq or 55.9 dBA CNEL. As discussed above in a suburban setting, peak hourly Leq is typically equivalent to the daily CNEL. The addition of 47.3 dBA CNEL would increase noise levels at the sensitive receptors to 56.5 dBA Leq.. Therefore, the exterior noise level at residences east of the project site would be 56.5 dBA CNEL, which is below the City's exterior noise threshold of 65 dBA CNEL for residential land uses.

In addition, the manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FTA, Traffic Noise and Vibration Impact Assessment, 2006). Based on an estimate for noise reduction in interior spaces of approximately 25 dBA, interior noise levels for residences east of the project site would be approximately 31 dBA CNEL with operation of ground mounted HVAC systems. Therefore, residents would not be exposed to interior noise levels in excess of the City's interior noise standard, 45 dBA CNEL.

Delivery and Trash Trucks

On-site activities would include the use of delivery trucks and trash hauling. The California Motor Vehicle Code establishes maximum sound levels for trucks operating at speeds less than 35 miles per hour (Section 23130) of 86 dBA at 50 feet. California State law prohibits trucks from idling for longer than 5 minutes. In addition, Chapter 13.20.170 of the CHMC states that the noise level for trash collection vehicles during the stationary compaction process shall not exceed 75 dBA at a distance of 25 feet from the vehicle. Delivery and trash truck trips to the site would be a periodic source of operational noise. Because trash trucks would be required to comply with the CHMC standards for trash collection vehicles, they would not substantially affect ambient noise conditions.

Roadway Noise Impacts

The project would generate new vehicle trips that would use area roadways. Project-generated vehicle traffic would result in a substantial impact in roadway noise levels if the noise increase would be in excess of the roadway noise increase thresholds shown in Table 4. Table 9 shows the increase in sound levels due to the project-generated traffic.

As shown in Table 8 there would be no increase in project-generated traffic noise at receptor locations 1 and 2 because of the minimal increase in traffic, 12 PM peak hour trips, associated with the proposed project (LLG, Traffic Impact Analysis, 2017).

Cumulative development in the project area in the year 2025 would increase noise levels along area roadways. Cumulative noise levels were modeled with project-generated traffic, as shown in Table 10. The cumulative plus project-generated traffic noise would increase noise between 1.3 and 1.4 dBA above existing noise levels because of increased traffic from the proposed project and other nearby projects. Noise increases at receptor locations along Chino Hills Parkway would exceed the applicable significance threshold of 1 dBA for the cumulative plus project scenario.

As shown in Table 10, the proposed project's contribution to cumulative noise impacts would be below the applicable significance thresholds. Traffic noise from the cumulative plus project scenario would be the same as in the cumulative scenario in the year 2025 because the proposed project would contribute an incremental amount of vehicle trips. Therefore, even though there is a significant cumulative traffic noise impact, the project's contribution to that impact is not cumulatively considerable.

Table 9 Comparison of Pre-Project and Post-Project Traffic Noise on Local Roadways

Receptor	Location[1]	Existing Noise Level (dBA Leq) (1)	Existing Plus Project Noise Level (dBA Leq) (2)	Project Change (2-1)	Significance Threshold	Significant
1	Chino Hills Parkway at Buddhist Temple	71.7	71..7	0.0	1	No
2	Chino Hills Parkway east of Buddhist Temple	70.9	70.9	0.0	1	No

Source: TNM2.5, see Appendix A for noise model outputs. Leq is the equivalent noise level over a period of time, typically one hour. Estimates of noise generated by traffic are from the centerlines of northbound/eastbound and southbound/westbound lanes on road segments during PM peak-hour traffic conditions.

[1]Noise receptor locations are shown on Figure 3 as Noise Measurement locations 2 and 4 respectively

Table 10 Cumulative 2025 Traffic Noise on Local Roadways

Sensitive Receptor	Existing Noise Level (dBA Leq) (1)	Cumulative 2025 Noise Level (dBA Leq) (2)	Cumulative 2025 Plus Project Noise Level (dBA Leq) (3)	Cumulative Increase (3-1)	Noise Due to Project Traffic Under Cumulative Conditions (3-2)	Significant
Chino Hills Parkway at Buddhist Temple	71.7	73.0	73.0	1.3	0.0	No
Chino Hills Parkway east of Buddhist Temple	70.9	72.3	72.3	1.4	0.0	No

Source: TNM2.5, see Appendix A for noise model outputs. Leq is the equivalent noise level over a period of time, typically one hour. Estimates of noise generated by traffic are from the centerlines of northbound/eastbound and southbound/westbound lanes on road segments during PM peak-hour traffic conditions.

[1] Noise receptor locations are shown on Figure 3 as Noise Measurement locations 2 and 4 respectively

On-Site Future Exterior Noise Environment

As shown in Table 2 the existing noise level on the project site is approximately 60 dBA Leq in the eastern portion of the site (Measurement Location 3) and 56 dBA Leq at the western edge of the project site adjacent to Rustic Drive (Measurement Location 2). As discussed above in a suburban setting, peak hourly Leq is typically equivalent to the daily CNEL. Therefore, exterior noise levels on the project site range from 54 to 60 dBA CNEL. Exterior noise levels for the dormitory to be constructed on the project site would be below the City's exterior noise threshold of 65 dBA CNEL. There are no City exterior noise standards for places of worship.

On-Site Future Interior Noise Environment

The manner in which newer dwelling units in California are constructed generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows (FTA, Traffic Noise and Vibration

Impact Assessment, 2006). For example, a unit exposed to exterior noise levels of 65 dBA would be 40 dBA indoors with the windows shut. As shown in Table 2, exterior noise levels could reach approximately 60 dBA CNEL on the project site (Measurement Location 3) since the project site is in a suburban area and peak hourly Leq is equivalent to the daily CNEL (California State Water Resources Control Board, 1999). Based on an estimate for noise reduction in interior spaces of approximately 25 dBA, exterior to interior noise levels would be approximately 35 dBA CNEL. Therefore, onsite residents and the remodeled temple at the project site would not be exposed to interior noise levels in excess of the City's 45 dBA CNEL interior noise standard for residences and places of worship.

4 References

California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. Accessed February 2017 at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf. Accessed January 2017.

State Water Resources Control Board (SWRCB). 1999. General Waste Discharge Requirements for Bio solids Land Application Draft Statewide Program EIR – Appendix G. Background Information on Acoustics. Accessed February 2017 at: http://www.waterboards.ca.gov/water_issues/programs/biosolids/deir/appendices/app_g.pdf.

Chino Hills, City of. Municipal Code. Accessed February 2017 at: http://www.chinohills.org/index.aspx?NID=114.

Chino Hills, City of. City of Chino Hills General Plan. 2015. Accessed February 2017 at: http://www.chinohills.org/DocumentCenter/View/11275.

Federal Highway Administration (FHWA). 2004.Traffic Noise Model User's Guide.Accessed February 2017 at: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/users_manual/v25uga00.cfm

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. Accessed February 2017 at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf.

Gordon Bricken and Associates. 2012. Acoustical and Energy Engineers. Acoustical Analysis [for the] Bundy Canyon Site [in the] City of Wildomar. Accessed February 2017 at: http://www.cityofwildomar.org/uploads/files/environmental/Appendix%20H%20-%20Accoustical%20Analysis.pdf.

Linscott, Law, & Greenspan, Engineers (LLG). 2017. Traffic Impact Analysis for Buddhist Temple, Chino Hills, California. Revised January 23, 2017, original December 22,2016.

Rincon Consultatns,Inc. (Rincon). 2013. Noise Study for a Wedding Event at the Tropical Paradise Site Located at 10350 Santa Rosa Road, Ventura County, California. October 7, 2013.

U.S. Environmental Protection Agency (U.S. EPA). 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.

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Noise Study - Appendix A

Noise Model Results

<Organization?>
<Analysis By?>
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: <Project Name?>
RUN: Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

2 February 2017
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	With Barrier Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NM1	3	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
NM2	19	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0
NM4	44	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
NM3	52	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

<Organization?>
<Analysis By?>
2 February 2017
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: <Project Name?>
RUN: Existing Plus Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NM1	3	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
NM2	19	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0
NM4	44	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
NM3	52	1	0.0	57.8	66	57.8	10	----	57.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

<Organization?>
<Analysis By?>
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: <Project Name?>
RUN: Cumulative 2025
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

2 February 2017
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NM1	3	1	0.0	57.3	66	57.3	10	----	57.3	0.0	8	-8.0
NM2	19	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
NM4	44	1	0.0	72.3	66	72.3	10	Snd Lvl	72.3	0.0	8	-8.0
NM3	52	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

<Organization?>
<Analysis By?>
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: <Project Name?>
RUN: Cumulative 2025 Plus Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

2 February 2017
TNM 2.5
Calculated with TNM 2.5

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NM1	3	1	0.0	56.7	66	56.7	10	----	56.7	0.0	8	-8.0
NM2	19	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
NM4	44	1	0.0	72.3	66	72.3	10	Snd Lvl	72.3	0.0	8	-8.0
NM3	52	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	4	0.0	0.0	0.0
All Impacted	2	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Noise Study - Appendix B

Construction Noise Sheets and Table

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Site Preparation Phase I
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	1	0.5	0.5	50	79
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Scraper [2]	89	1	0.5	0.5	50	83
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**85**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	85	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***80***	***dBA***
ESTIMATED CNEL:	***80***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Grading Phase I
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	1	0.5	0.5	50	79
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	1	0.5	0.5	50	79
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS: 83 dBA

Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	83	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***78***	***dBA***
ESTIMATED CNEL:	***78***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Building Construction Phase I
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Crane [2]	88	1	0.5	0.5	50	82
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	2	0.5	0.5	50	80
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	1	0.5	0.5	50	75
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	3	0.5	0.5	50	73

TOTAL Leq DURING NORMAL OPERATIONS:	**85**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	85	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***80***	***dBA***
ESTIMATED CNEL:	***80***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION

Scenario: Paving Phase I
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Concrete Mixer [2]	85	1	0.5	0.5	50	79
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	2	0.5	0.5	50	82
Roller [2]	80	2	0.5	0.5	50	77
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**85**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	85	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***80***	***dBA***
ESTIMATED CNEL:	***80***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Paving Phase I
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	1	0.5	0.5	50	75
Backhoe [1]	80	0	0.5	0.5	50	#N/A
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**75**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	75	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***70***	***dBA***
ESTIMATED CNEL:	***70***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Site Preparation Phase II
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	1	0.5	0.5	50	79
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**80**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	80	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***75***	***dBA***
ESTIMATED CNEL:	***75***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Grading Phase II
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	2	0.5	0.5	50	77
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	1	0.5	0.5	50	79
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	1	0.5	0.5	50	64
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**81**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	81	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***76***	***dBA***
ESTIMATED CNEL:	***76***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Building Construction Phase II
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	2	0.5	0.5	50	77
Crane [2]	88	1	0.5	0.5	50	82
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	2	0.5	0.5	50	80
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**85**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	85	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***80***	***dBA***
ESTIMATED CNEL:	***80***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Paving Phase II
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Concrete Mixer [2]	85	4	0.5	0.5	50	85
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	1	0.5	0.5	50	79
Roller [2]	80	1	0.5	0.5	50	74
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**86**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	86	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***82***	***dBA***
ESTIMATED CNEL:	***82***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE I

Scenario: Architectural Coating Phase II
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	1	0.5	0.5	50	75
Backhoe [1]	80	0	0.5	0.5	50	#N/A
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**75**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	75	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***70***	***dBA***
ESTIMATED CNEL:	***70***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE II

Scenario: Demolition Phase III
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	0	0.5	0.5	50	#N/A
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	2	0.5	0.5	50	82
Excavator [3]	85	3	0.5	0.5	50	84
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	1	0.5	0.5	50	64
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS: 86 dBA

Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	86	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***81***	***dBA***
ESTIMATED CNEL:	***81***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE II

Scenario: Grading Phase III
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	3	0.5	0.5	50	79
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	1	0.5	0.5	50	79
Excavator [3]	85	1	0.5	0.5	50	79
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	1	0.5	0.5	50	79
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**85**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	85	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***80***	***dBA***
ESTIMATED CNEL:	***80***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE II

Scenario: Building Construction Phase III
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	3	0.5	0.5	50	79
Crane [2]	88	1	0.5	0.5	50	82
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	3	0.5	0.5	50	82
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	1	0.5	0.5	50	75
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	1	0.5	0.5	50	68

TOTAL Leq DURING NORMAL OPERATIONS:	**86**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	86	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***81***	***dBA***
ESTIMATED CNEL:	***81***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nighttime ambient noise level assummed from interior residential noise level in General Plan

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE II

Scenario: Paving Phase III
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	0	0.5	0.5	50	#N/A
Backhoe [1]	80	1	0.5	0.5	50	74
Concrete Mixer [2]	85	2	0.5	0.5	50	82
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	3	0.5	0.5	50	84
Roller [2]	80	2	0.5	0.5	50	77
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**87**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	87	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***82***	***dBA***
ESTIMATED CNEL:	***82***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

Equipment Use Source:
[1] Federal Railroad Administration (FRA) (2012), *High Speed Ground Transportation Noise and Vibration Impact Assessment Manual*
[2] Federal Transit Administration (FTA) (2006), Transit Noise and Vibration Assessment
[3] Federal Highway Administration (FHWA) (2006), *Construction Noise Handbook. Accessed at https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/*

BUDDHIST TEMPLE HEAVY EQUIPMENT NOISE IMPACT ESTIMATION PHASE II

Scenario: Architectural Coating Phase III
Receptor Location: Nearest Residence

Noise Source	Ave. Maximum SPL @ 50 ft., dBA	Number	Percentage of Workday Hours In Use	Effective Use Factor *	Distance, Ft.	Leq, dBA
Air Compressor [2]	81	1	0.5	0.5	50	75
Backhoe [1]	80	0	0.5	0.5	50	#N/A
Crane [2]	88	0	0.5	0.5	50	#N/A
Dozer [2]	85	0	0.5	0.5	50	#N/A
Excavator [3]	85	0	0.5	0.5	50	#N/A
Forklift [2]	83	0	0.5	0.5	50	#N/A
Grader [2]	85	0	0.5	0.5	50	#N/A
Generator [2]	81	0	0.5	0.5	50	#N/A
Paver [1]	85	0	0.5	0.5	50	#N/A
Roller [2]	80	0	0.5	0.5	50	#N/A
Saw [2]	70	0	0.5	0.5	50	#N/A
Welder [2]	74	0	0.5	0.5	50	#N/A

TOTAL Leq DURING NORMAL OPERATIONS:	**75**	**dBA**
Daytime Ambient without Equipment Operation:	56	dBA
Nighttime Ambient without Equipment Operation:	45	dBA
Daytime Hours Operating:	8	
Evening Hours Operating:	0	
Nighttime Hours Operating:	0	
Combined Daytime Hourly Leq:	75	*dBA*
Combined Nighttime Hourly Leq:	45	*dBA*
ESTIMATED Ldn:	***70***	***dBA***
ESTIMATED CNEL:	***70***	***dBA***

Distance attenuation assumed at: 6 dBA per doubling of distance
Notes: #N/A = Not Applicable

Note: calculations assume a decrease in ambient evening noise levels over the assumed daytime level, nighttime ambient noise levels assumed to be 45 dBA Leq

*Assumed crane as Derrick for conservative estimate and added paving equipment as paver
* Assumed percentage of time that equipment is operating at near maximum sound level.
* Equipment type per applicant supplied information and CalEEMod inputs
*Nightime ambient noise level assummed from interior residential noise level in General Plan

Equipment Use Source:
[1] Federal Railroad Administration (FRA) (2012), *High Speed Ground Transportation Noise and Vibration Impact Assessment Manual*
[2] Federal Transit Administration (FTA) (2006), Transit Noise and Vibration Assessment
[3] Federal Highway Administration (FHWA) (2006), *Construction Noise Handbook. Accessed at https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/*

Typical Noise Levels Generated by Construction Equipment

Equipment	Typical Lmax (dBA) 50 Feet from the Source
Air Compressor	81
Backhoe	80
Compactor (ground)	83
Concrete Mixer	85
Dump Truck	76
Excavator	81
Flat Bed Truck	74
Front End Loader	79
Generator	81
Paver	89
Pickup Truck	75
Pneumatic Tools	85
Roller	80
Saw	70
Warning Horn	83
Welder/Torch	74

Source: FTA, Transit noise and Vibration Impact Assessment, 2006.

Noise Study - Appendix C

Noise Measurement Data for Amplification

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 60.2 - 2016/10/11 11:14:14
- Level Range : 40-100
- SEL : 77.5
- Leq : 48.0
-

No.s	Date Time	(dB)				
1	2009/06/01 05:02:24	44.3	46.5	47.1	50.1	51.0
6	2009/06/01 05:02:29	53.2	51.1	47.0	44.7	46.6
11	2009/06/01 05:02:34	50.0	52.5	50.6	45.8	44.9
16	2009/06/01 05:02:39	44.0	44.4	46.4	47.8	49.4
21	2009/06/01 05:02:44	49.0	48.7	49.5	49.2	48.9
26	2009/06/01 05:02:49	54.6	51.3	53.0	45.8	48.9
31	2009/06/01 05:02:54	47.5	48.3	47.6	48.4	45.8
36	2009/06/01 05:02:59	48.0	50.0	46.7	46.3	45.7
41	2009/06/01 05:03:04	45.8	48.3	50.8	48.3	47.7
46	2009/06/01 05:03:09	46.7	46.0	46.2	47.3	45.3
51	2009/06/01 05:03:14	45.5	47.7	46.3	53.1	50.6
56	2009/06/01 05:03:19	50.9	50.1	52.6	50.6	52.0
61	2009/06/01 05:03:24	51.3	52.7	45.1	54.9	51.1
66	2009/06/01 05:03:29	49.7	52.4	50.1	54.3	54.9
71	2009/06/01 05:03:34	46.8	52.6	53.9	47.9	48.8
76	2009/06/01 05:03:39	47.2	50.1	50.3	46.4	47.6
81	2009/06/01 05:03:44	45.7	46.7	45.4	45.5	46.0
86	2009/06/01 05:03:49	48.8	46.7	45.5	45.8	45.5
91	2009/06/01 05:03:54	46.0	46.7	46.8	49.0	47.0
96	2009/06/01 05:03:59	50.1	48.2	46.9	47.8	47.9
101	2009/06/01 05:04:04	47.2	49.7	48.6	46.3	45.7
106	2009/06/01 05:04:09	48.0	46.2	47.6	48.8	49.0
111	2009/06/01 05:04:14	48.4	48.8	53.6	48.5	50.9
116	2009/06/01 05:04:19	50.6	49.8	48.9	47.6	47.2
121	2009/06/01 05:04:24	45.3	45.2	47.8	52.1	49.0
126	2009/06/01 05:04:29	47.2	46.5	48.9	48.2	48.4
131	2009/06/01 05:04:34	48.2	47.0	46.2	46.3	48.8
136	2009/06/01 05:04:39	48.4	46.8	46.6	46.1	45.6
141	2009/06/01 05:04:44	45.8	48.0	47.3	47.4	46.1
146	2009/06/01 05:04:49	45.1	46.5	46.7	45.5	48.3
151	2009/06/01 05:04:54	50.0	48.8	49.9	51.2	48.7
156	2009/06/01 05:04:59	54.0	51.2	53.6	53.0	54.4
161	2009/06/01 05:05:04	50.6	48.8	48.1	48.5	49.0
166	2009/06/01 05:05:09	50.1	48.2	48.9	51.1	50.9
171	2009/06/01 05:05:14	48.7	47.6	46.9	47.0	48.3
176	2009/06/01 05:05:19	48.9	48.3	48.0	45.8	45.9
181	2009/06/01 05:05:24	46.8	45.8	44.9	43.7	45.7
186	2009/06/01 05:05:29	44.0	46.1	45.8	46.1	45.5
191	2009/06/01 05:05:34	46.7	49.1	48.8	52.6	50.5
196	2009/06/01 05:05:39	51.6	45.9	47.9	49.5	52.2
201	2009/06/01 05:05:44	52.7	46.5	53.9	50.0	48.3
206	2009/06/01 05:05:49	51.8	53.7	53.4	44.8	48.8
211	2009/06/01 05:05:54	49.1	48.1	45.3	45.4	46.1
216	2009/06/01 05:05:59	45.5	46.1	46.1	45.9	45.6
221	2009/06/01 05:06:04	49.9	49.4	45.9	49.3	43.0
226	2009/06/01 05:06:09	44.2	44.0	44.1	46.7	44.6
231	2009/06/01 05:06:14	46.0	44.9	44.1	44.6	44.4
236	2009/06/01 05:06:19	44.6	44.7	44.1	46.8	46.1
241	2009/06/01 05:06:24	44.0	43.9	44.4	44.7	46.4
246	2009/06/01 05:06:29	43.3	44.8	47.9	45.8	45.5
251	2009/06/01 05:06:34	46.8	45.4	46.7	45.7	45.9
256	2009/06/01 05:06:39	46.1	45.4	45.6	45.1	47.8
261	2009/06/01 05:06:44	44.6	47.3	46.3	46.3	47.3
266	2009/06/01 05:06:49	47.2	48.4	47.4	47.6	48.6
271	2009/06/01 05:06:54	50.6	47.8	49.8	48.3	47.7
276	2009/06/01 05:06:59	49.6	46.7	48.8	47.4	47.2
281	2009/06/01 05:07:04	48.2	47.1	47.8	49.6	48.1
286	2009/06/01 05:07:09	46.4	47.6	48.3	49.6	49.7
291	2009/06/01 05:07:14	47.1	47.8	47.2	48.8	48.7
296	2009/06/01 05:07:19	48.4	47.0	46.7	46.9	46.3
301	2009/06/01 05:07:24	48.0	46.8	45.6	46.7	48.5
306	2009/06/01 05:07:29	47.5	47.7	46.2	52.5	48.5
311	2009/06/01 05:07:34	47.9	49.3	48.8	48.3	46.7
316	2009/06/01 05:07:39	47.4	49.6	46.6	46.6	52.3
321	2009/06/01 05:07:44	49.7	49.0	51.3	52.3	47.4
326	2009/06/01 05:07:49	50.3	49.1	50.1	50.7	50.8
331	2009/06/01 05:07:54	49.3	51.7	52.7	49.6	47.4
336	2009/06/01 05:07:59	47.9	48.8	49.2	51.4	47.2
341	2009/06/01 05:08:04	47.9	46.3	46.5	47.4	54.4
346	2009/06/01 05:08:09	51.1	47.9	56.0	57.3	49.6
351	2009/06/01 05:08:14	45.7	46.3	47.3	47.7	47.4
356	2009/06/01 05:08:19	46.3	46.0	51.6	46.8	47.2
361	2009/06/01 05:08:24	47.6	45.9	45.6	45.1	45.9
366	2009/06/01 05:08:29	46.1	46.4	46.4	45.5	47.4
371	2009/06/01 05:08:34	46.8	47.0	46.8	46.7	46.5
376	2009/06/01 05:08:39	46.8	47.7	47.3	46.8	44.1
381	2009/06/01 05:08:44	44.2	43.9	44.0	44.0	45.7
386	2009/06/01 05:08:49	47.4	46.7	46.7	46.6	48.6
391	2009/06/01 05:08:54	49.2	47.1	46.1	45.9	47.3
396	2009/06/01 05:08:59	50.3	46.9	45.3	45.5	46.5
401	2009/06/01 05:09:04	47.0	49.6	50.1	48.4	48.6
406	2009/06/01 05:09:09	48.3	49.0	51.1	48.1	49.3
411	2009/06/01 05:09:14	47.9	46.1	45.6	44.1	45.0
416	2009/06/01 05:09:19	45.4	46.3	46.5	45.7	45.7
421	2009/06/01 05:09:24	46.5	47.5	46.4	46.5	45.7

426	2009/06/01	05:09:29	45.3	48.1	45.7	45.0	45.0
431	2009/06/01	05:09:34	43.5	42.9	43.2	44.3	44.6
436	2009/06/01	05:09:39	44.4	46.4	47.2	46.1	44.4
441	2009/06/01	05:09:44	44.2	46.6	47.7	52.2	48.3
446	2009/06/01	05:09:49	45.8	46.3	48.0	46.6	49.6
451	2009/06/01	05:09:54	49.8	46.7	44.5	46.3	46.8
456	2009/06/01	05:09:59	47.0	56.2	50.3	49.2	46.4
461	2009/06/01	05:10:04	49.9	51.8	49.3	50.1	50.2
466	2009/06/01	05:10:09	47.2	46.4	45.6	44.7	45.9
471	2009/06/01	05:10:14	44.7	46.8	46.6	47.2	48.0
476	2009/06/01	05:10:19	46.8	45.7	44.9	44.5	45.1
481	2009/06/01	05:10:24	44.6	43.6	43.0	43.4	44.3
486	2009/06/01	05:10:29	46.1	48.1	49.4	50.3	49.1
491	2009/06/01	05:10:34	48.0	44.8	46.1	50.0	51.7
496	2009/06/01	05:10:39	50.2	51.3	50.9	47.4	47.1
501	2009/06/01	05:10:44	45.2	46.8	47.8	52.1	52.5
506	2009/06/01	05:10:49	48.9	46.1	49.1	50.4	46.4
511	2009/06/01	05:10:54	46.5	48.3	47.7	51.0	48.4
516	2009/06/01	05:10:59	46.3	44.6	44.8	46.3	47.2
521	2009/06/01	05:11:04	45.7	44.9	45.9	45.7	46.2
526	2009/06/01	05:11:09	45.6	46.0	46.3	46.7	45.6
531	2009/06/01	05:11:14	46.1	46.0	47.7	46.0	47.0
536	2009/06/01	05:11:19	48.5	47.0	48.1	47.1	52.4
541	2009/06/01	05:11:24	53.5	52.2	52.1	50.9	50.3
546	2009/06/01	05:11:29	48.0	47.4	48.3	47.5	47.0
551	2009/06/01	05:11:34	48.3	46.9	47.2	49.0	49.5
556	2009/06/01	05:11:39	48.3	47.7	48.0	46.4	50.2
561	2009/06/01	05:11:44	46.9	46.6	50.9	49.8	50.2
566	2009/06/01	05:11:49	47.6	45.8	45.0	47.4	46.0
571	2009/06/01	05:11:54	47.5	50.2	47.0	47.1	46.4
576	2009/06/01	05:11:59	50.4	52.9	50.9	49.2	47.9
581	2009/06/01	05:12:04	47.5	49.6	48.4	49.0	45.9
586	2009/06/01	05:12:09	44.9	44.0	44.4	43.5	46.0
591	2009/06/01	05:12:14	45.4	45.1	46.9	44.9	48.5
596	2009/06/01	05:12:19	47.3	47.1	46.9	45.6	46.1
601	2009/06/01	05:12:24	47.3	47.5	49.7	49.6	47.9
606	2009/06/01	05:12:29	46.2	45.7	45.3	43.5	44.4
611	2009/06/01	05:12:34	44.8	46.1	46.5	46.4	45.6
616	2009/06/01	05:12:39	46.4	46.0	44.1	44.8	43.4
621	2009/06/01	05:12:44	42.6	44.2	44.3	48.0	48.3
626	2009/06/01	05:12:49	47.2	48.1	45.9	45.8	47.5
631	2009/06/01	05:12:54	47.4	46.3	45.7	45.8	45.9
636	2009/06/01	05:12:59	45.7	47.3	48.3	44.8	42.7
641	2009/06/01	05:13:04	43.6	44.1	45.5	45.7	44.0
646	2009/06/01	05:13:09	43.7	45.5	48.0	45.9	46.8
651	2009/06/01	05:13:14	46.3	46.2	46.3	47.0	49.1
656	2009/06/01	05:13:19	47.1	46.8	46.6	47.5	48.2
661	2009/06/01	05:13:24	48.9	47.7	49.1	48.9	47.3
666	2009/06/01	05:13:29	47.4	46.6	47.8	48.9	45.3
671	2009/06/01	05:13:34	43.4	44.3	43.6	43.9	43.9
676	2009/06/01	05:13:39	46.7	45.8	44.9	47.8	48.5
681	2009/06/01	05:13:44	44.4	43.0	43.1	43.7	45.9
686	2009/06/01	05:13:49	46.7	45.7	48.1	47.4	45.7
691	2009/06/01	05:13:54	46.0	47.1	47.4	45.5	46.3
696	2009/06/01	05:13:59	45.4	44.8	46.4	46.0	49.7
701	2009/06/01	05:14:04	49.1	47.1	44.9	44.7	43.6
706	2009/06/01	05:14:09	44.1	44.2	47.4	45.1	44.9
711	2009/06/01	05:14:14	47.8	44.4	43.6	44.7	46.7
716	2009/06/01	05:14:19	44.9	43.7	46.2	47.7	46.2
721	2009/06/01	05:14:24	44.1	45.3	46.9	46.2	47.7
726	2009/06/01	05:14:29	48.1	48.8	49.1	53.0	50.9
731	2009/06/01	05:14:34	46.9	47.3	46.6	45.9	46.0
736	2009/06/01	05:14:39	46.6	47.2	46.2	47.1	48.5
741	2009/06/01	05:14:44	46.4	47.1	48.3	48.2	46.6
746	2009/06/01	05:14:49	47.9	48.0	47.6	48.3	48.5
751	2009/06/01	05:14:54	47.6	45.6	46.0	47.1	48.2
756	2009/06/01	05:14:59	48.3	47.3	46.2	44.9	45.4
761	2009/06/01	05:15:04	47.0	47.8	46.1	46.2	47.8
766	2009/06/01	05:15:09	48.6	49.9	46.3	45.6	46.8
771	2009/06/01	05:15:14	46.1	45.1	44.1	44.5	44.7
776	2009/06/01	05:15:19	44.6	44.8	44.1	46.0	49.6
781	2009/06/01	05:15:24	48.6	47.9	46.8	46.4	44.8
786	2009/06/01	05:15:29	45.5	46.5	46.1	47.0	47.9
791	2009/06/01	05:15:34	46.5	46.9	46.2	46.7	45.0
796	2009/06/01	05:15:39	46.8	45.4	46.0	45.9	46.7
801	2009/06/01	05:15:44	49.7	49.7	53.3	52.0	46.4
806	2009/06/01	05:15:49	50.3	48.9	47.4	46.9	47.7
811	2009/06/01	05:15:54	49.9	50.2	47.7	45.6	44.3
816	2009/06/01	05:15:59	47.9	50.8	50.8	49.9	48.3
821	2009/06/01	05:16:04	48.5	50.1	50.3	47.2	46.0
826	2009/06/01	05:16:09	45.4	47.9	48.6	50.0	48.8
831	2009/06/01	05:16:14	50.9	48.3	47.1	45.5	45.5
836	2009/06/01	05:16:19	46.2	47.3	48.8	46.4	47.7
841	2009/06/01	05:16:24	45.7	47.8	45.9	46.4	45.1
846	2009/06/01	05:16:29	47.6	46.4	45.5	44.1	45.1
851	2009/06/01	05:16:34	46.2	47.1	47.8	46.4	47.2
856	2009/06/01	05:16:39	43.8	47.8	44.8	46.7	46.9
861	2009/06/01	05:16:44	46.3	49.1	48.3	51.3	51.0
866	2009/06/01	05:16:49	47.4	46.7	50.0	44.7	44.1
871	2009/06/01	05:16:54	45.7	49.7	48.3	46.7	44.7
876	2009/06/01	05:16:59	46.5	46.2	46.5	46.0	46.7
881	2009/06/01	05:17:04	46.7	46.9	49.7	47.9	45.5
886	2009/06/01	05:17:09	45.0	46.0	46.5	46.3	45.4
891	2009/06/01	05:17:14	45.8	45.9	49.3	46.3	44.8
896	2009/06/01	05:17:19	43.8	45.7	49.8	49.4	47.6

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 63.6 - 2016/10/11 10:32:45
- Level Range : 40-100
- SEL : 82.3
- Leq : 52.8
-

No.s	Date Time	(dB)				
1	2009/06/01 04:20:30	50.7	49.2	48.4	50.7	50.3
6	2009/06/01 04:20:35	46.6	49.0	47.7	49.6	49.9
11	2009/06/01 04:20:40	56.3	49.6	50.4	49.9	54.2
16	2009/06/01 04:20:45	55.7	53.0	53.7	53.4	53.2
21	2009/06/01 04:20:50	50.7	53.1	52.3	51.3	52.7
26	2009/06/01 04:20:55	51.9	52.9	55.7	53.5	54.9
31	2009/06/01 04:21:00	50.6	52.5	54.2	55.5	54.1
36	2009/06/01 04:21:05	53.3	51.3	56.5	55.8	56.2
41	2009/06/01 04:21:10	55.9	57.8	56.5	54.7	56.3
46	2009/06/01 04:21:15	56.5	58.3	56.7	58.1	56.6
51	2009/06/01 04:21:20	57.8	57.5	55.9	58.4	59.1
56	2009/06/01 04:21:25	57.0	57.5	54.0	57.3	56.4
61	2009/06/01 04:21:30	58.1	57.5	57.6	55.7	57.1
66	2009/06/01 04:21:35	53.8	49.7	51.5	52.7	53.8
71	2009/06/01 04:21:40	51.8	50.5	50.0	59.8	51.4
76	2009/06/01 04:21:45	51.2	52.3	51.0	50.4	51.5
81	2009/06/01 04:21:50	51.6	52.6	52.6	51.7	52.2
86	2009/06/01 04:21:55	54.1	54.1	54.2	52.2	51.8
91	2009/06/01 04:22:00	51.4	54.0	52.1	54.1	57.1
96	2009/06/01 04:22:05	55.2	52.4	49.3	50.8	54.7
101	2009/06/01 04:22:10	50.5	50.6	50.3	50.0	49.1
106	2009/06/01 04:22:15	52.1	51.1	54.4	55.8	51.5
111	2009/06/01 04:22:20	55.3	53.9	56.0	52.0	54.5
116	2009/06/01 04:22:25	53.3	54.1	54.2	53.9	51.9
121	2009/06/01 04:22:30	52.4	53.3	53.8	54.0	53.7
126	2009/06/01 04:22:35	55.4	52.6	53.0	54.5	52.7
131	2009/06/01 04:22:40	53.7	54.6	54.2	54.8	53.4
136	2009/06/01 04:22:45	53.0	53.2	55.9	54.3	53.1
141	2009/06/01 04:22:50	53.5	54.6	51.8	53.6	50.9
146	2009/06/01 04:22:55	52.5	55.5	54.3	53.1	55.9
151	2009/06/01 04:23:00	52.0	51.3	51.1	52.7	48.2
156	2009/06/01 04:23:05	49.4	52.4	53.1	46.9	49.8
161	2009/06/01 04:23:10	50.5	49.5	52.0	51.4	48.5
166	2009/06/01 04:23:15	53.1	50.4	47.5	53.9	48.8
171	2009/06/01 04:23:20	51.6	47.1	48.0	49.5	49.2
176	2009/06/01 04:23:25	49.4	49.4	50.2	51.5	51.5
181	2009/06/01 04:23:30	54.2	51.8	47.6	51.3	51.0
186	2009/06/01 04:23:35	49.5	49.6	49.3	51.5	50.1
191	2009/06/01 04:23:40	52.5	53.6	50.2	47.9	51.9
196	2009/06/01 04:23:45	51.0	50.8	51.3	53.5	50.9
201	2009/06/01 04:23:50	52.0	49.7	49.9	55.2	51.5
206	2009/06/01 04:23:55	54.0	51.9	49.5	48.6	51.4
211	2009/06/01 04:24:00	50.6	51.2	50.7	52.5	53.5
216	2009/06/01 04:24:05	52.0	52.3	51.5	54.0	49.2
221	2009/06/01 04:24:10	50.4	51.8	51.9	55.1	50.4
226	2009/06/01 04:24:15	52.9	55.4	53.0	52.8	55.8
231	2009/06/01 04:24:20	58.0	61.0	54.7	52.5	52.1
236	2009/06/01 04:24:25	51.6	51.0	51.8	52.3	52.7
241	2009/06/01 04:24:30	52.8	53.7	50.8	52.5	51.6
246	2009/06/01 04:24:35	51.6	49.5	52.3	52.2	52.7
251	2009/06/01 04:24:40	54.4	51.9	53.3	53.1	52.6
256	2009/06/01 04:24:45	49.9	52.5	50.3	51.1	49.7
261	2009/06/01 04:24:50	51.8	53.9	50.7	53.3	53.9
266	2009/06/01 04:24:55	49.4	54.2	52.2	53.9	55.1
271	2009/06/01 04:25:00	54.8	52.0	52.3	52.8	53.3
276	2009/06/01 04:25:05	54.3	51.7	52.7	53.0	51.3
281	2009/06/01 04:25:10	53.0	51.2	52.7	54.7	53.1
286	2009/06/01 04:25:15	57.7	53.2	52.9	54.3	52.2
291	2009/06/01 04:25:20	54.0	51.2	51.8	50.3	51.7
296	2009/06/01 04:25:25	49.8	50.4	51.2	50.7	53.4
301	2009/06/01 04:25:30	53.8	52.5	51.5	51.0	52.6
306	2009/06/01 04:25:35	50.7	51.3	50.6	51.5	51.5
311	2009/06/01 04:25:40	49.7	51.9	52.8	53.3	51.9
316	2009/06/01 04:25:45	50.0	49.8	50.0	52.3	50.3
321	2009/06/01 04:25:50	53.8	50.3	52.6	50.8	51.5
326	2009/06/01 04:25:55	53.2	50.4	54.7	54.1	53.3
331	2009/06/01 04:26:00	54.1	51.3	54.8	55.0	53.6
336	2009/06/01 04:26:05	51.2	52.2	53.5	51.4	51.8
341	2009/06/01 04:26:10	49.7	51.3	51.9	52.6	51.9
346	2009/06/01 04:26:15	51.6	52.1	52.0	53.4	54.6
351	2009/06/01 04:26:20	53.2	53.2	53.3	53.6	52.1
356	2009/06/01 04:26:25	51.3	53.2	53.1	53.3	53.1
361	2009/06/01 04:26:30	53.1	53.1	53.0	51.5	52.1
366	2009/06/01 04:26:35	53.3	53.8	52.8	52.6	52.2
371	2009/06/01 04:26:40	52.0	50.2	51.4	54.4	52.1
376	2009/06/01 04:26:45	50.7	50.8	50.7	51.8	50.9
381	2009/06/01 04:26:50	50.0	49.4	48.2	48.1	49.4
386	2009/06/01 04:26:55	50.2	47.4	49.3	49.7	50.4
391	2009/06/01 04:27:00	49.7	48.3	51.5	51.7	48.6
396	2009/06/01 04:27:05	51.2	48.1	49.9	49.9	50.4
401	2009/06/01 04:27:10	47.0	51.9	47.7	46.8	49.8
406	2009/06/01 04:27:15	48.8	47.6	49.8	51.4	48.2
411	2009/06/01 04:27:20	49.1	52.0	49.7	50.5	48.2
416	2009/06/01 04:27:25	47.0	51.7	49.1	49.9	47.3
421	2009/06/01 04:27:30	49.8	50.1	49.0	48.6	49.9

426	2009/06/01	04:27:35	48.8	48.5	50.5	52.2	48.8
431	2009/06/01	04:27:40	47.8	49.4	50.3	51.5	51.6
436	2009/06/01	04:27:45	47.3	49.8	47.3	48.5	52.2
441	2009/06/01	04:27:50	53.1	47.4	51.3	51.4	53.3
446	2009/06/01	04:27:55	51.5	48.3	50.9	48.9	48.6
451	2009/06/01	04:28:00	49.4	53.7	48.7	51.4	51.6
456	2009/06/01	04:28:05	50.6	49.3	46.8	51.7	54.4
461	2009/06/01	04:28:10	51.0	49.4	50.8	52.0	51.2
466	2009/06/01	04:28:15	51.1	53.8	52.0	49.4	51.0
471	2009/06/01	04:28:20	49.6	48.9	47.9	50.6	47.7
476	2009/06/01	04:28:25	49.1	53.4	52.4	47.9	51.7
481	2009/06/01	04:28:30	50.3	52.7	51.6	52.4	52.9
486	2009/06/01	04:28:35	52.1	50.8	50.0	51.2	51.9
491	2009/06/01	04:28:40	52.9	53.1	51.0	52.0	50.9
496	2009/06/01	04:28:45	53.8	51.7	51.8	51.5	52.4
501	2009/06/01	04:28:50	51.1	51.8	51.1	51.3	52.5
506	2009/06/01	04:28:55	51.6	52.5	52.2	52.0	52.9
511	2009/06/01	04:29:00	51.3	52.5	51.9	50.2	50.1
516	2009/06/01	04:29:05	51.2	52.8	54.3	52.6	52.7
521	2009/06/01	04:29:10	50.4	52.8	49.2	53.0	51.2
526	2009/06/01	04:29:15	53.9	52.3	51.8	52.4	52.3
531	2009/06/01	04:29:20	55.7	50.8	52.1	50.8	50.4
536	2009/06/01	04:29:25	50.9	51.8	50.5	50.9	50.9
541	2009/06/01	04:29:30	49.7	51.1	51.7	51.8	51.8
546	2009/06/01	04:29:35	52.9	50.9	52.0	51.1	52.4
551	2009/06/01	04:29:40	51.5	53.1	52.2	51.7	51.8
556	2009/06/01	04:29:45	53.0	53.9	51.8	53.5	51.7
561	2009/06/01	04:29:50	51.2	51.9	51.0	54.2	50.9
566	2009/06/01	04:29:55	51.7	52.7	53.7	51.4	52.9
571	2009/06/01	04:30:00	54.7	50.4	50.0	50.3	53.6
576	2009/06/01	04:30:05	49.5	52.5	50.7	53.2	52.1
581	2009/06/01	04:30:10	50.7	53.1	51.9	51.3	51.4
586	2009/06/01	04:30:15	50.4	52.2	55.0	50.0	51.5
591	2009/06/01	04:30:20	51.3	52.5	50.7	50.0	55.0
596	2009/06/01	04:30:25	50.8	53.2	50.0	50.6	51.3
601	2009/06/01	04:30:30	51.6	53.4	50.5	50.1	50.2
606	2009/06/01	04:30:35	50.7	51.3	52.5	52.6	49.7
611	2009/06/01	04:30:40	48.4	50.3	50.7	50.9	47.7
616	2009/06/01	04:30:45	52.7	51.0	54.2	52.9	51.8
621	2009/06/01	04:30:50	52.8	55.5	55.0	55.6	54.4
626	2009/06/01	04:30:55	51.3	51.7	54.7	51.3	52.9
631	2009/06/01	04:31:00	50.7	52.6	53.1	52.4	53.8
636	2009/06/01	04:31:05	50.3	53.5	52.1	52.4	51.6
641	2009/06/01	04:31:10	51.8	53.1	53.5	53.1	53.7
646	2009/06/01	04:31:15	55.0	51.4	56.5	51.3	50.6
651	2009/06/01	04:31:20	51.6	53.4	52.6	53.2	55.5
656	2009/06/01	04:31:25	53.3	53.2	56.0	55.4	54.6
661	2009/06/01	04:31:30	54.5	53.1	52.6	52.3	53.5
666	2009/06/01	04:31:35	56.7	54.1	54.1	56.1	50.5
671	2009/06/01	04:31:40	53.7	53.4	53.7	53.2	54.3
676	2009/06/01	04:31:45	51.5	52.8	51.2	51.3	52.3
681	2009/06/01	04:31:50	51.4	52.4	53.7	55.2	52.6
686	2009/06/01	04:31:55	51.1	50.3	52.1	51.5	51.8
691	2009/06/01	04:32:00	57.0	49.7	54.4	53.5	48.3
696	2009/06/01	04:32:05	51.0	52.0	51.2	51.2	53.1
701	2009/06/01	04:32:10	55.2	53.6	54.5	54.7	50.1
706	2009/06/01	04:32:15	51.9	49.7	52.2	50.7	51.3
711	2009/06/01	04:32:20	52.0	52.6	51.3	53.0	51.6
716	2009/06/01	04:32:25	53.3	52.4	52.8	53.2	55.2
721	2009/06/01	04:32:30	54.4	53.1	53.2	53.2	52.5
726	2009/06/01	04:32:35	53.0	54.0	51.4	52.0	51.3
731	2009/06/01	04:32:40	52.9	50.9	54.6	54.2	54.5
736	2009/06/01	04:32:45	52.9	54.4	55.6	51.9	54.1
741	2009/06/01	04:32:50	54.1	53.1	53.3	51.2	52.0
746	2009/06/01	04:32:55	52.7	52.7	54.0	50.5	52.1
751	2009/06/01	04:33:00	53.3	53.1	52.7	53.7	52.2
756	2009/06/01	04:33:05	52.8	53.0	53.6	53.1	53.4
761	2009/06/01	04:33:10	53.6	52.9	53.7	53.5	55.3
766	2009/06/01	04:33:15	55.1	55.3	53.9	55.3	55.0
771	2009/06/01	04:33:20	52.8	54.6	54.0	55.5	53.2
776	2009/06/01	04:33:25	52.8	53.2	50.0	52.0	53.9
781	2009/06/01	04:33:30	55.0	53.2	51.5	51.9	50.1
786	2009/06/01	04:33:35	48.6	51.3	51.4	49.9	56.3
791	2009/06/01	04:33:40	51.9	52.0	52.6	53.2	51.2
796	2009/06/01	04:33:45	52.9	53.1	55.1	53.6	54.4
801	2009/06/01	04:33:50	54.0	55.1	53.3	53.2	54.2
806	2009/06/01	04:33:55	53.3	53.6	53.7	53.4	54.5
811	2009/06/01	04:34:00	55.1	52.6	54.3	54.5	55.3
816	2009/06/01	04:34:05	53.1	52.7	53.5	54.0	55.1
821	2009/06/01	04:34:10	52.1	55.2	55.0	53.0	53.8
826	2009/06/01	04:34:15	55.5	55.0	53.2	53.9	54.4
831	2009/06/01	04:34:20	52.8	51.6	49.7	52.7	52.1
836	2009/06/01	04:34:25	54.6	51.7	50.5	54.5	53.6
841	2009/06/01	04:34:30	53.8	54.2	52.1	52.5	51.7
846	2009/06/01	04:34:35	52.2	56.2	54.0	50.8	50.5
851	2009/06/01	04:34:40	52.4	51.0	54.5	51.3	52.6
856	2009/06/01	04:34:45	49.8	52.0	52.2	53.4	51.1
861	2009/06/01	04:34:50	53.0	51.6	51.4	51.9	48.1
866	2009/06/01	04:34:55	48.8	56.5	52.7	53.6	51.3
871	2009/06/01	04:35:00	53.0	52.3	51.8	48.5	53.9
876	2009/06/01	04:35:05	52.3	51.5	56.5	54.8	51.7
881	2009/06/01	04:35:10	54.8	51.4	55.0	52.1	51.5
886	2009/06/01	04:35:15	50.5	53.4	51.7	53.0	49.9
891	2009/06/01	04:35:20	52.9	51.6	51.7	55.7	53.8
896	2009/06/01	04:35:25	56.4	52.1	50.6	52.4	53.3

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 68.6 - 2016/10/11 10:50:14
- Level Range : 40-100
- SEL : 88.5
- Leq : 58.9
-

No.s	Date Time	(dB)				
1	2009/06/01 04:38:47	53.7	54.9	52.4	54.7	55.5
6	2009/06/01 04:38:52	56.6	56.4	55.2	54.3	57.0
11	2009/06/01 04:38:57	57.1	54.7	57.9	57.8	58.2
16	2009/06/01 04:39:02	58.1	59.0	56.2	58.6	58.1
21	2009/06/01 04:39:07	58.7	56.8	56.4	59.8	56.5
26	2009/06/01 04:39:12	60.2	61.8	61.6	60.6	59.6
31	2009/06/01 04:39:17	58.1	56.1	61.4	57.2	57.3
36	2009/06/01 04:39:22	60.6	63.4	62.8	62.5	63.5
41	2009/06/01 04:39:27	62.6	60.0	65.6	64.6	64.1
46	2009/06/01 04:39:32	63.0	58.0	60.3	62.1	63.6
51	2009/06/01 04:39:37	59.3	63.1	63.9	63.8	61.9
56	2009/06/01 04:39:42	64.7	59.1	59.5	62.0	61.9
61	2009/06/01 04:39:47	65.8	61.4	63.2	57.5	60.1
66	2009/06/01 04:39:52	62.9	65.1	63.2	59.4	59.3
71	2009/06/01 04:39:57	61.6	62.6	64.8	61.0	61.9
76	2009/06/01 04:40:02	60.8	61.3	62.4	62.2	63.9
81	2009/06/01 04:40:07	61.0	62.2	60.5	64.7	65.2
86	2009/06/01 04:40:12	62.1	64.1	62.7	64.8	58.6
91	2009/06/01 04:40:17	63.3	63.6	62.6	65.7	62.7
96	2009/06/01 04:40:22	64.0	64.5	63.8	62.8	62.6
101	2009/06/01 04:40:27	64.7	65.4	63.5	62.5	62.5
106	2009/06/01 04:40:32	64.2	63.5	64.0	63.4	64.8
111	2009/06/01 04:40:37	64.5	63.8	62.5	63.2	63.0
116	2009/06/01 04:40:42	60.5	59.2	60.3	63.2	56.9
121	2009/06/01 04:40:47	60.8	60.6	58.6	61.2	63.0
126	2009/06/01 04:40:52	60.5	61.3	62.2	61.0	60.4
131	2009/06/01 04:40:57	60.8	57.7	57.2	59.3	60.8
136	2009/06/01 04:41:02	60.3	60.7	63.6	65.5	65.2
141	2009/06/01 04:41:07	62.2	62.1	63.0	63.1	62.3
146	2009/06/01 04:41:12	62.5	63.5	61.9	62.5	61.8
151	2009/06/01 04:41:17	62.6	62.8	62.0	63.2	63.7
156	2009/06/01 04:41:22	63.1	62.2	63.4	63.9	62.6
161	2009/06/01 04:41:27	62.9	61.8	60.7	63.0	62.7
166	2009/06/01 04:41:32	58.7	59.4	61.3	61.4	64.0
171	2009/06/01 04:41:37	62.3	64.9	63.3	63.0	62.9
176	2009/06/01 04:41:42	64.9	62.8	62.2	64.0	61.4
181	2009/06/01 04:41:47	61.0	62.3	62.9	62.4	60.8
186	2009/06/01 04:41:52	61.4	59.8	61.3	62.4	62.1
191	2009/06/01 04:41:57	60.5	62.9	62.9	64.4	62.2
196	2009/06/01 04:42:02	64.0	63.7	60.8	63.4	61.2
201	2009/06/01 04:42:07	64.0	62.4	62.8	63.5	62.5
206	2009/06/01 04:42:12	61.4	61.6	64.2	64.5	63.4
211	2009/06/01 04:42:17	62.2	60.0	63.0	60.5	63.3
216	2009/06/01 04:42:22	63.5	63.3	63.5	62.1	63.5
221	2009/06/01 04:42:27	65.0	65.6	64.6	65.7	62.3
226	2009/06/01 04:42:32	63.4	63.0	62.7	62.9	63.8
231	2009/06/01 04:42:37	63.9	62.9	61.0	63.2	63.7
236	2009/06/01 04:42:42	63.1	64.5	64.8	63.5	63.1
241	2009/06/01 04:42:47	64.3	60.9	63.7	63.5	62.0
246	2009/06/01 04:42:52	61.9	63.0	62.3	60.7	62.5
251	2009/06/01 04:42:57	65.0	61.1	63.1	62.8	64.2
256	2009/06/01 04:43:02	62.9	63.2	63.9	60.5	60.2
261	2009/06/01 04:43:07	58.3	57.6	57.7	57.4	58.1
266	2009/06/01 04:43:12	58.9	58.7	59.3	59.0	58.4
271	2009/06/01 04:43:17	56.8	55.4	55.2	54.8	52.1
276	2009/06/01 04:43:22	50.2	49.0	50.7	46.7	47.3
281	2009/06/01 04:43:27	52.7	49.2	52.4	57.0	58.7
286	2009/06/01 04:43:32	57.6	58.7	57.8	56.7	55.6
291	2009/06/01 04:43:37	57.6	58.3	58.7	58.9	59.0
296	2009/06/01 04:43:42	58.1	55.0	57.6	57.8	56.9
301	2009/06/01 04:43:47	58.1	55.7	57.2	55.6	60.1
306	2009/06/01 04:43:52	57.1	60.8	59.7	58.3	57.6
311	2009/06/01 04:43:57	58.8	59.0	58.6	58.1	58.1
316	2009/06/01 04:44:02	59.3	59.5	59.7	60.2	57.0
321	2009/06/01 04:44:07	58.7	57.8	59.1	58.3	59.7
326	2009/06/01 04:44:12	58.0	58.1	58.2	59.5	56.1
331	2009/06/01 04:44:17	59.4	58.2	59.0	59.3	57.8
336	2009/06/01 04:44:22	57.5	58.6	59.8	59.4	58.6
341	2009/06/01 04:44:27	57.7	58.7	56.8	57.9	58.1
346	2009/06/01 04:44:32	57.5	59.0	56.5	58.3	57.9
351	2009/06/01 04:44:37	58.3	56.8	60.2	59.7	59.9
356	2009/06/01 04:44:42	58.6	58.7	58.6	57.5	56.9
361	2009/06/01 04:44:47	58.8	57.9	57.6	55.9	60.0
366	2009/06/01 04:44:52	58.1	60.5	58.4	59.6	56.5
371	2009/06/01 04:44:57	59.1	54.9	59.6	56.6	59.7
376	2009/06/01 04:45:02	57.6	59.1	58.7	56.5	56.3
381	2009/06/01 04:45:07	58.5	57.1	59.1	58.1	58.9
386	2009/06/01 04:45:12	59.6	59.9	58.4	59.4	58.7
391	2009/06/01 04:45:17	58.9	58.1	58.2	59.7	59.4
396	2009/06/01 04:45:22	59.3	60.1	57.4	61.0	60.0
401	2009/06/01 04:45:27	60.0	58.4	58.9	60.6	59.0
406	2009/06/01 04:45:32	59.8	62.0	59.7	60.3	59.5
411	2009/06/01 04:45:37	60.5	61.4	60.3	60.3	59.5
416	2009/06/01 04:45:42	60.2	57.6	59.6	59.8	59.1
421	2009/06/01 04:45:47	57.6	59.6	59.7	59.2	57.0

426	2009/06/01	04:45:52	59.3	57.9	58.1	59.5	59.3
431	2009/06/01	04:45:57	59.5	57.4	56.6	59.6	58.1
436	2009/06/01	04:46:02	58.7	59.4	61.0	59.8	56.0
441	2009/06/01	04:46:07	61.7	57.8	56.7	55.2	58.3
446	2009/06/01	04:46:12	59.0	59.2	58.6	55.9	59.2
451	2009/06/01	04:46:17	59.1	60.0	58.4	59.9	56.1
456	2009/06/01	04:46:22	58.3	59.1	59.5	59.6	59.1
461	2009/06/01	04:46:27	59.4	59.1	59.3	58.8	59.0
466	2009/06/01	04:46:32	59.5	59.5	60.0	59.9	60.5
471	2009/06/01	04:46:37	62.6	57.8	59.4	58.8	57.3
476	2009/06/01	04:46:42	58.9	58.5	61.0	58.2	59.8
481	2009/06/01	04:46:47	63.0	60.1	58.0	55.9	56.2
486	2009/06/01	04:46:52	56.9	48.9	55.7	46.1	50.7
491	2009/06/01	04:46:57	48.7	50.2	48.5	50.7	56.8
496	2009/06/01	04:47:02	54.0	58.1	53.7	58.9	53.8
501	2009/06/01	04:47:07	54.7	51.7	58.7	55.4	58.9
506	2009/06/01	04:47:12	54.9	59.0	52.8	59.6	57.8
511	2009/06/01	04:47:17	55.3	57.5	59.2	57.5	52.8
516	2009/06/01	04:47:22	59.7	56.8	59.9	57.1	59.3
521	2009/06/01	04:47:27	57.9	57.7	57.5	61.1	59.0
526	2009/06/01	04:47:32	59.7	61.6	60.1	61.2	62.5
531	2009/06/01	04:47:37	62.5	60.9	60.7	61.0	62.5
536	2009/06/01	04:47:42	62.6	60.5	61.5	61.1	60.2
541	2009/06/01	04:47:47	61.6	61.8	62.3	61.4	60.5
546	2009/06/01	04:47:52	62.5	62.3	60.6	59.7	61.6
551	2009/06/01	04:47:57	62.3	62.1	59.7	60.8	62.5
556	2009/06/01	04:48:02	61.2	55.2	57.5	53.8	55.2
561	2009/06/01	04:48:07	57.8	56.6	60.0	54.2	59.3
566	2009/06/01	04:48:12	56.1	58.1	56.7	60.7	60.2
571	2009/06/01	04:48:17	58.7	53.2	46.6	51.9	48.5
576	2009/06/01	04:48:22	52.9	54.0	46.2	47.5	49.7
581	2009/06/01	04:48:27	47.7	44.3	44.6	43.5	48.9
586	2009/06/01	04:48:32	49.0	43.5	42.7	44.2	44.9
591	2009/06/01	04:48:37	43.7	45.1	43.4	43.7	43.9
596	2009/06/01	04:48:42	44.5	44.3	43.7	43.1	43.6
601	2009/06/01	04:48:47	46.7	45.6	45.1	47.2	44.1
606	2009/06/01	04:48:52	46.5	46.4	44.5	44.4	47.7
611	2009/06/01	04:48:57	46.0	44.3	44.3	45.2	44.9
616	2009/06/01	04:49:02	44.6	44.6	44.0	45.2	43.2
621	2009/06/01	04:49:07	45.9	46.0	44.8	47.8	45.7
626	2009/06/01	04:49:12	45.1	46.1	43.2	44.0	47.8
631	2009/06/01	04:49:17	47.0	44.6	44.2	45.8	46.9
636	2009/06/01	04:49:22	43.6	46.8	44.7	43.6	45.2
641	2009/06/01	04:49:27	44.9	44.5	44.8	45.3	45.5
646	2009/06/01	04:49:32	45.1	46.5	46.5	47.5	44.7
651	2009/06/01	04:49:37	45.2	47.1	45.7	45.7	45.5
656	2009/06/01	04:49:42	46.1	45.7	47.9	46.6	47.4
661	2009/06/01	04:49:47	46.4	44.9	46.0	45.9	47.8
666	2009/06/01	04:49:52	48.0	45.2	45.5	45.5	46.5
671	2009/06/01	04:49:57	45.3	46.1	44.0	48.2	47.9
676	2009/06/01	04:50:02	47.4	49.5	47.4	46.9	47.1
681	2009/06/01	04:50:07	47.3	46.8	45.1	45.0	50.3
686	2009/06/01	04:50:12	51.3	45.5	51.8	45.5	47.6
691	2009/06/01	04:50:17	51.5	47.3	48.3	48.1	46.2
696	2009/06/01	04:50:22	46.0	46.0	48.6	47.9	46.0
701	2009/06/01	04:50:27	47.6	46.4	45.6	49.2	46.5
706	2009/06/01	04:50:32	51.3	46.7	45.8	46.1	49.2
711	2009/06/01	04:50:37	47.1	46.6	51.9	47.9	47.6
716	2009/06/01	04:50:42	48.6	46.9	47.4	49.4	47.3
721	2009/06/01	04:50:47	47.8	48.3	49.5	49.2	47.2
726	2009/06/01	04:50:52	46.5	46.2	46.8	46.9	46.6
731	2009/06/01	04:50:57	46.3	47.1	48.6	46.8	48.7
736	2009/06/01	04:51:02	46.8	47.7	47.2	48.0	55.0
741	2009/06/01	04:51:07	60.9	48.2*	52.7*	47.2	46.8
746	2009/06/01	04:51:12	47.6	48.2	48.9	48.5	48.9
751	2009/06/01	04:51:17	47.8	47.8	46.8	48.0	47.1
756	2009/06/01	04:51:22	47.8	48.4	48.1	50.5	46.3
761	2009/06/01	04:51:27	44.9	45.5	48.9	47.5	45.5
766	2009/06/01	04:51:32	44.7	45.6	45.2	47.2	48.1
771	2009/06/01	04:51:37	48.7	46.0	45.5	49.2	46.5
776	2009/06/01	04:51:42	46.7	44.1	45.3	47.3	48.4
781	2009/06/01	04:51:47	44.0	44.1	44.9	44.7	45.1
786	2009/06/01	04:51:52	43.6	43.4	45.7	47.3	44.1
791	2009/06/01	04:51:57	42.6	48.7	46.7	43.8	44.7
796	2009/06/01	04:52:02	45.8	48.1	47.8	45.0	45.3
801	2009/06/01	04:52:07	46.5	49.8	46.7	44.4	46.9
806	2009/06/01	04:52:12	44.1	44.7	43.9	43.8	46.3
811	2009/06/01	04:52:17	47.5	54.2	50.3	51.3	52.2
816	2009/06/01	04:52:22	49.7	45.2	48.0	47.2	46.3
821	2009/06/01	04:52:27	46.2	45.4	46.0	44.9	46.5
826	2009/06/01	04:52:32	47.9	47.6	48.0	46.5	45.7
831	2009/06/01	04:52:37	43.2	47.8	45.0	44.7	47.9
836	2009/06/01	04:52:42	46.9	44.6	45.9	46.3	45.6
841	2009/06/01	04:52:47	46.6	45.5	45.5	44.4	44.6
846	2009/06/01	04:52:52	47.2	46.4	46.3	44.1	44.2
851	2009/06/01	04:52:57	44.1	45.3	44.2	44.7	44.3
856	2009/06/01	04:53:02	46.0	45.0	44.2	45.3	46.8
861	2009/06/01	04:53:07	43.7	45.7	44.7	45.2	44.2
866	2009/06/01	04:53:12	45.3	46.6	49.8	45.2	44.5
871	2009/06/01	04:53:17	45.8	44.6	44.2	44.8	44.8
876	2009/06/01	04:53:22	52.8	44.0	49.0	44.3	46.3
881	2009/06/01	04:53:27	44.1	45.9	44.5	44.7	45.0
886	2009/06/01	04:53:32	49.1	45.3	45.4	45.4	46.4
891	2009/06/01	04:53:37	46.0	44.8	45.5	47.1	47.0
896	2009/06/01	04:53:42	44.8	45.3	44.8	45.8	44.3
901	2009/06/01	04:53:47	44.7	44.8			

Appendix E

Traffic Impact Analysis

TRAFFIC IMPACT ANALYSIS REPORT

BUDDHIST TEMPLE

Chino Hills, California

Revised January 23, 2017 (Original December 22, 2016)

Prepared for:

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180 North Ashwood Avenue
Ventura, CA 93003

And

CITY OF CHINO HILLS
Community Development Department
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TRAFFIC IMPACT ANALYSIS REPORT

BUDDHIST TEMPLE

Chino Hills, California
January 23, 2017

1.0 INTRODUCTION

This Traffic Impact Analysis addresses the potential traffic impacts and circulation needs associated with the proposed Buddhist Temple (herein after referred to as Project) in the City of Chino Hills. The Project site is a 7.3-acre parcel of land that is located at 2948 Chino Hills Parkway, north of Chino Hills Parkway and east of Rustic Drive. The Project is currently developed with two buildings, with Building 1 totaling 3,484 SF (monk residence) and Building 2 totaling 5,458 SF (Office/Meeting Room/Storage).

The proposed Buddhist Temple project includes construction of 21,936 square-feet (SF) of floor area within five (5) buildings that will include a 3,100 SF Buddha Hall, a 3,600 SF Meditation Area/Multi-purpose Building, a 4,280 SF Classroom/Office Building with six (6) rooms and 1,180 SF of office space, a 9,056 SF Monk Dormitory, and a 1,900 SF Kitchen/Restroom. A total of 300 parking spaces will be provided on-site. Please note that the project is expected to be completed in three phases, however, to provide a conservative assessment opening year traffic conditions is assume for Year 2025.

This report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts that the proposed Project may have on the local and regional network in the vicinity of the Project.

1.1 Scope of Work

The Scope of Work for this project was developed in conjunction with City staff and satisfies the City of Chino Hills requirements as outlined the *Traffic Impact Study Guidelines for Development Projects in the City of Chino Hills (dated 10/15/01)* and is consistent with the *Congestion Management Program (CMP) for San Bernardino County, 2016 Update*, prepared by the SANBAG. Given the Project location in proximity to Chino Hills Parkway (SR-142), the criteria outlined in the current Caltrans Guide for the Preparation of Traffic Impact Studies dated December 2002 will be considered. The City of Chino Hills is the lead agency for the environmental analysis of the proposed Project, in accordance with CMP legislation. ***Appendix A*** contains the Scope of Work memorandum as approved by the City of Chino Hills.

The traffic analysis evaluates the existing operating conditions at seven (7) key study intersections within the project vicinity, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements/mitigation measures are identified.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at seven (7) key study intersections for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of Chino Hills, City of Chino and City of Brea. Based on our research, there are seventy-one (71) cumulative projects in the City of Chino Hills, City of Chino and the City of Brea. These seventy-one (71) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this Project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2025) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2025 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of 2.0% per year and adding traffic volumes generated by seventy-one (71) cumulative projects.

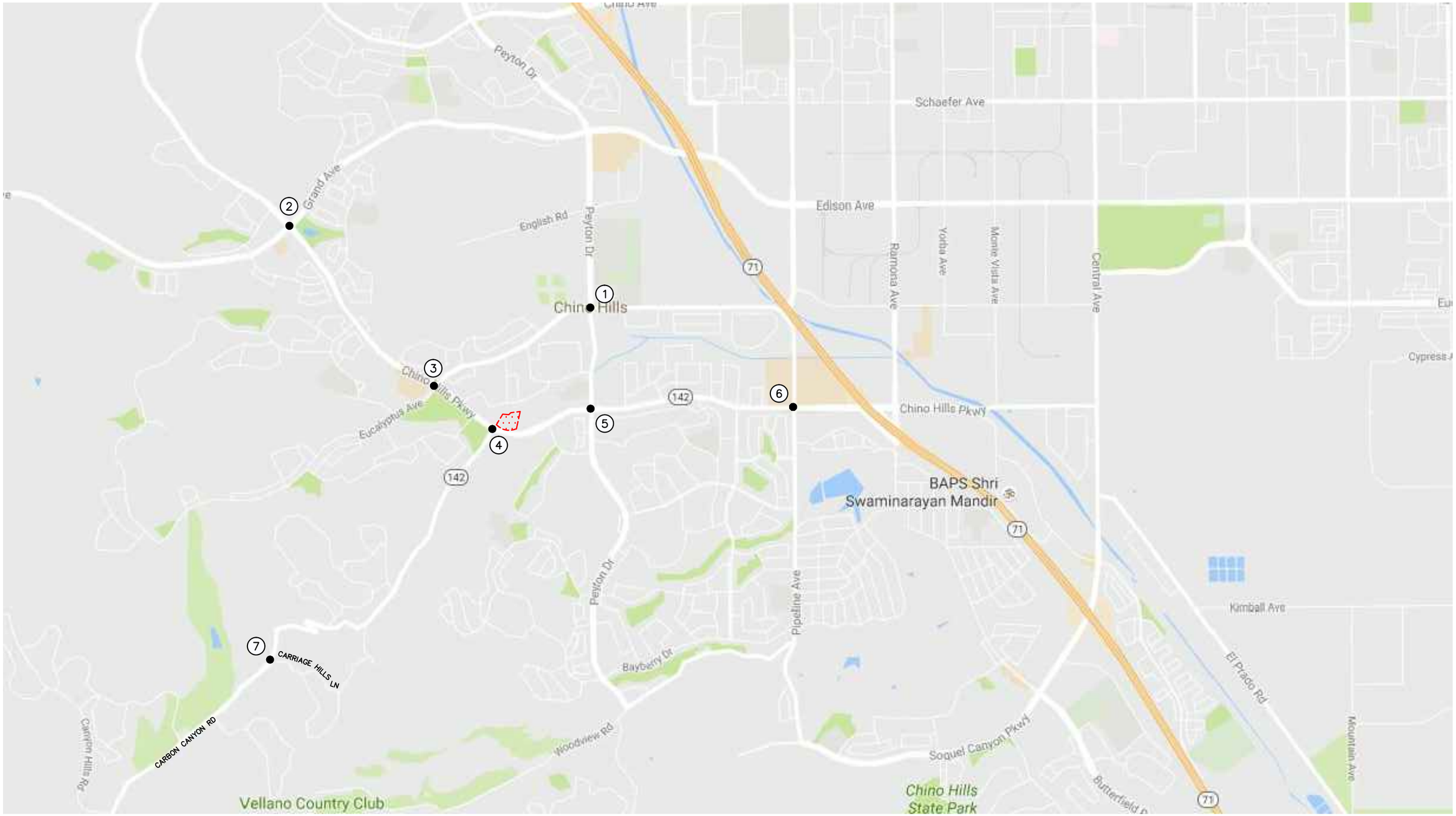
1.2 Study Area

The seven (7) existing key study intersections and two (2) future Project driveways were selected for evaluation utilizing CMP analysis criteria and requirements of the City of Chino Hills. The City of Chino Hills adheres to the SANBAG CMP TIA guidelines, which require analysis of arterial intersection locations in which the proposed Project is anticipated to contribute 50 or more peak hour trips. City staff also included several locations where the Project contributes less than 50 peak hour trips, or is nearby and in close proximity to the Project site. The seven (7) existing key study intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation. The intersections listed below provide both local and regional access to the study area and define the extent of the boundaries for this traffic impact investigation.

Key Study Intersections

1. Peyton Drive at Eucalyptus Avenue (Chino Hills)
2. Chino Hills Parkway at Grand Avenue (Chino Hills)
3. Chino Hills Parkway at Eucalyptus Avenue (Chino Hills)
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway (Chino Hills/Caltrans)
5. Peyton Drive at Chino Hills Parkway (Chino Hills/Caltrans)
6. Pipeline Avenue at Chino Hills Parkway (Chino Hills/Caltrans)
7. Carbon Canyon Road at Carriage Hills Lane (Chino Hills/Caltrans)

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the proposed Project and depicts the study locations and surrounding street system. The Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

KEY

= BUDDHIST TEMPLE PROJECT SITE

(#) = STUDY INTERSECTION

FIGURE 1-1

VICINITY MAP

BUDDHIST TEMPLE, CHINO HILLS

volumes and restore/maintain an acceptable Level of Service and/or mitigate the impact of the project. Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus project conditions,
- AM and PM peak hour capacity analyses for near-term (Year 2025) conditions without and with project traffic,
- Area Traffic Improvements and Mitigations,
- Site Access, and
- Parking Analysis.

2.0 PROJECT DESCRIPTION

The Project site is a 7.3-acre parcel of land that is located at 2948 Chino Hills Parkway, north of Chino Hills Parkway and east of Rustic Drive. The Project is currently developed with two buildings, with Building 1 totaling 3,484 SF (monk residence) and Building 2 totaling 5,458 SF (Office/Meeting Room/Storage).

The proposed Buddhist Temple project includes construction of 21,936 square-feet (SF) of floor area within five (5) buildings that will include a 3,100 SF Buddha Hall, a 3,600 SF Meditation Area/Multi-purpose Building, a 4,280 SF Classroom/Office Building with six (6) rooms and 1,180 SF of office space, a 9,056 SF Monk Dormitory, and a 1,900 SF Kitchen/Restroom. A total of 300 parking spaces will be provided on-site.

Per the information provided in the site "activity" plan, the Project's schedule of operations is as follows:

THE TEMPLE

- OPEN 7 DAYS A WEEK FROM 9:00 AM – 5:00 PM.
- MOST ACTIVITIES ARE BETWEEN 10:00 AM -5:00 PM ON SUNDAY ONLY. ACTIVITIES ARE CHANTING, REQUEST FOR FIVE PERCEPTS, OFFER FOOD TO MONKS, RECITE SCRIPTURES, AND MEDITATION.
- ON MONDAY TO SATURDAY, FEW ACTIVITIES ARE HELD AND INCLUDE PEOPLE OFFERING FOOD TO THE MONKS, OFFERING DONATION, AND LISTENING TO THE PRAYER IN THE MEDITATION, CLASSROOM OR BUDDHA HALL.

MULTI-PUPOSE BUILDING

- DANCE CLASSROOMS (TRADITIONAL THAI DANCE) WITH 40 MAXIMUM OCCUPANCY ACTIVITY OCCURS ONLY ON SUNDAY FROM 10:00 AM – 3:00 PM.
- MULTI-PURPOSE CLASSROOM WITH 120 MAX. OCCUPANCY ACTIVITY OCCURS ONLY ON SUNDAY FROM 10:00 AM – 3:00 PM.
- KITCHEN/RESTROOM WITH 20 MAX. OCCUPANCY ACTIVITY OCCURS DAILY FROM 7:00 AM – 6:00 PM.
- OFFICE WITH 4 MAX. OCCUPANCY TOTAL ACTIVITY OCCURS DAILY FROM 7:00 AM – 6:00 PM.

BUDDHA HALL

- 80 MAX. OCCUPANCY
- 60 VISITORS, ACTIVITY OCCURS ONLY ON SUNDAY FROM 8:00 AM – 5:00 PM.
- 20 MONKS, ACTIVITY OCCURS DAILY FROM 8:00 AM – 4:00 PM.

DORMITORY BUILDING

- 28 MAX. OCCUPANCY
- ACTIVITY OCCURS DAILY, 24 HOURS A DAY.

OTHER EVENTS

- FARMER MARKET OCCURS ON SUNDAY FROM 9:00 AM – 4:00 PM. TEMPORARY KIOSKS OCCUPY AT THE LANDSCAPE NEXT TO JADEE.IT IS NOT COMMERCIAL TYPE OF FARMER MARKET. OCCASIONALLY, PEOPLE GIVE OUT FREE FOOD AND SELL PRODUCES FOR RAISINGMONEY TO THE TEMPLE AS DONATION. THEREFORE, THE TRAFFICSAND PEDESTRIAN CIRCULATION WILL NOT BE AS DENSE AS NORMALFARMER MARKET.

- HOLIDAY FESTIVAL OCCURS ONCE A MONTH. ON HOLIDAY, VISITORSWILL OFFER FOOD TO THE MONKS, CHANTING, AND MEDITATE ATTHE MULTI-PURPOSE CLASSROOM AND BUDDHA HALL. USUALLY, THEACTIVITIES ARE THE SAME AS EVERY SUNDAY.

- THERE IS NO FORMAL WEDDING CEREMONY OR RECEPTION OCCURSIN THE TEMPLE. THE MONK WILL NOT CONDUCT ANY CEREMONY.TYPICALLY FOR WEDDING, GROUP OF PEOPLE WILL OFFER FOOD TOTHE MONKS, GIVING DONATIONS, CHANTING, AND LISTEN TO THEPRAYER IN THE MEDITATION CLASSROOM OR BUDDHA HALL ASTYPICAL SUNDAY ACTIVITIES.

The Project is expected to be completed in three (3) phases, with Phase 1 including development of the Buddha Hall and kitchen/toilets building and surface parking, Phase 2 consisting of the construction of the Monk dormitory and Phase 3 including the Multi-purpose room/dance classroom/offices and surface parking. A summary of the Buddhist Temple proposed development is provided in ***Table 2-1***. ***Figure 2-1*** presents an existing aerial photograph of the Project site. ***Figure 2-2*** presents the proposed Project site plan, prepared by Gillis + Panichapan Architects, Inc. dated September 2016.

For this analysis, it is assumed that complete buildout of the Project will be completed by Year 2025, but is dependent on several factors, including the Project funding. Hence, to provide a conservative assessment, Year 2025 has been utilized to assess the Project's potential traffic impacts at full occupancy of the church within a near-term cumulative traffic setting.

2.1 Site Access

Access to the proposed Project will be provided via two (2) full access driveways located on Rustic Drive.

2.2 Pedestrian Circulation

Pedestrian circulation would be provided via existing public sidewalks along Chino Hills Parkway within the vicinity of the project frontage. The proposed Project will protect the existing sidewalk along project frontage and if necessary repair or reconstruct sidewalks along the project frontage per the City's request. The existing sidewalk system within the project vicinity provides direct connectivity to the major thoroughfares of Rustic Drive/Carbon Canyon Road and Chino Hills Parkway and pedestrian connectivity to the existing residential, recreational, institutional and commercial development in the surrounding area.

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

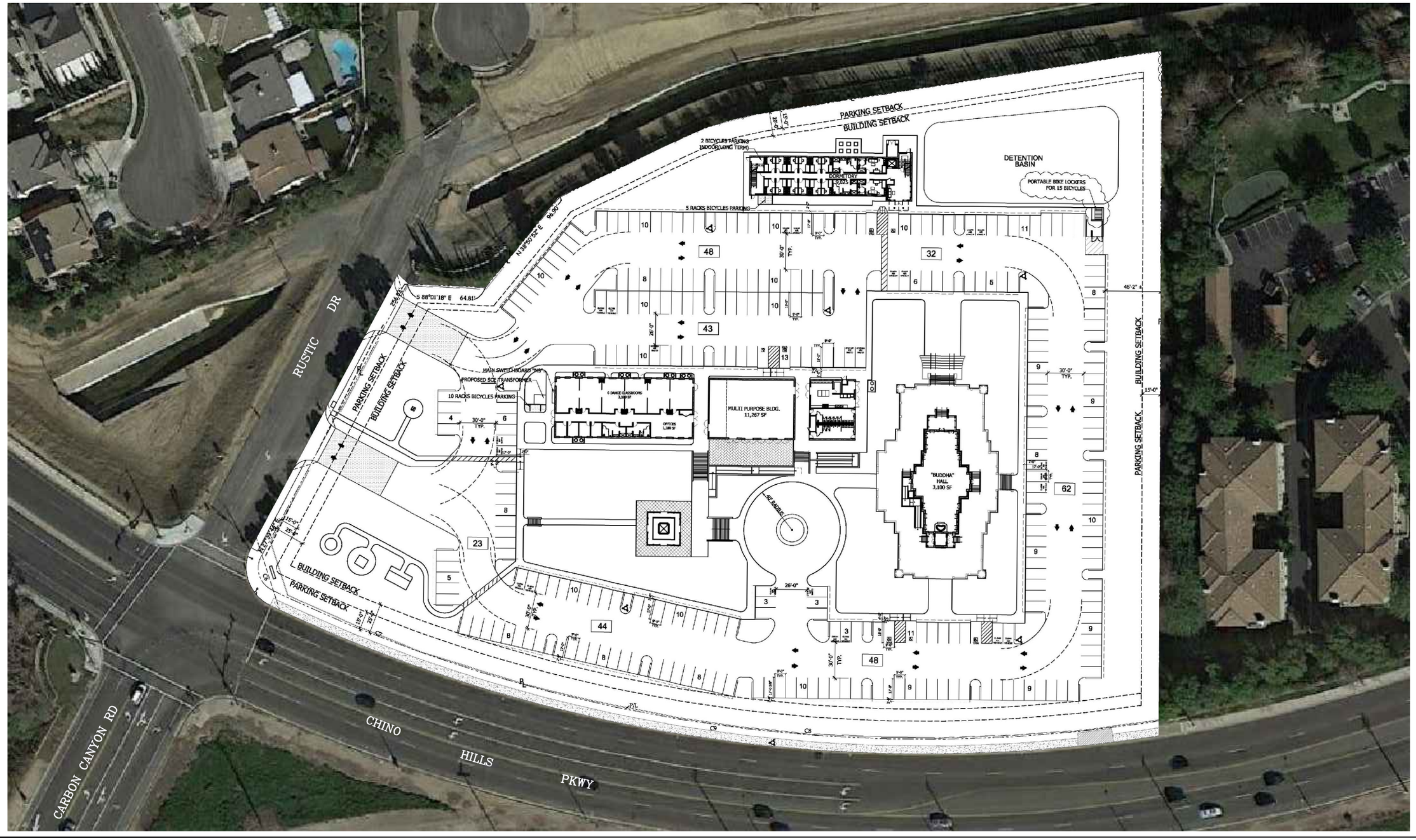
KEY

= BUDDHIST TEMPLE PROJECT SITE

FIGURE 2-1

EXISTING SITE AERIAL PHOTOGRAPH

BUDDHIST TEMPLE, CHINO HILLS



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LINSCOTT LAW & GREENSPAN engineers

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SCALE: 1"=80'

SOURCE: GILLIS + PANICHAPAN ARCHITECTS, INC.

FIGURE 2-2

PROPOSED SITE PLAN
BUDDHIST TEMPLE, CHINO HILLS

TABLE 2-1
BUDDHIST TEMPLE
PROJECT DEVELOPMENT SUMMARY[1]

Land Use / Project Description	Building Floor Area (SF-GFA)	Use	Occupancy
Building			
❑ Buddha Hall	3,100 SF	Temple Prayer Area	80 persons
❑ Multi-Purpose Building	3,600 SF	Multipurpose Classroom	120 persons
❑ Kitchen/Toilets	1,900 SF	--	--
❑ Classrooms (divisible to 6 rooms)	3,100 SF	Dance Classroom	40 persons
❑ Offices (4 rooms)	1,180 SF	Offices	5 person
❑ Monks Dormitory	9,056 SF	28 personal quarters	28 persons
Total Building Floor Area	**21,936 SF**	**--**	**--**
Vehicular Parking Supply			
❑ Standard	292 spaces	--	--
❑ Van Accessible	1 spaces	--	--
❑ Standard Accessible	7 spaces	--	--
Total Vehicular Parking Supply	**300 spaces**	**--**	**--**

Notes:
- SF-GFA = square feet of gross floor area

[1] Source: City of Chino Hills/Rincon Consultants, Inc. and *Code Site Plan Wat Phra That Doi Suthep USA Sheet T-2 dated 8-18-2015 prepared by Gillis + Panichapan Architects, Inc.*

3.0 EXISTING CONDITIONS

The Chino Valley Freeway (State Route-71) provides primary regional access to the proposed Project site via two freeway interchanges; one at Grand Avenue/Edison Avenue located to the northeast and the other at Ramona Avenue/Chino Hills Parkway to the southeast. Local access is provided by Peyton Drive, which intersects Grand Avenue to the north and Chino Hills Parkway to the south. The principal local network of streets serving the Project site consists of Eucalyptus Avenue, Chino Hills Parkway, Pipeline Avenue, Peyton Drive, Carbon Canyon Road/Rustic Drive and Grand Avenue. The following discussion provides a brief synopsis of these key area streets.

3.1 Existing Street Network

Eucalyptus Avenue is a two- to four-lane divided roadway oriented in the east-west direction north of the Project site. Eucalyptus Avenue has two lanes west of Peyton Drive and four lanes east of Peyton Drive. The posted speed limit on Eucalyptus Avenue is 40 mph west of Peyton Drive and 35 mph east of Peyton Drive. Eucalyptus Avenue is classified as a Collector on the Chino Hills General Plan Circulation Element. On-street parking is prohibited on either side of Eucalyptus Avenue. A traffic signal control the study intersection of Peyton Drive at Eucalyptus Avenue. The study intersections of Morningfield Drive at Eucalyptus Avenue is controlled by a one-way stop. The City of Chino Hills Bicycle Master Plan identifies Eucalyptus Avenue, west of Peyton Drive, as a Class II bicycle facility, and a Class III bicycle facility east of Peyton Drive.

Chino Hills Parkway is a four- to five-lane divided highway oriented generally east-west through the City of Chino Hills. Chino Hills Parkway is classified as a State Route east of Carbon Canyon Road and a Minor Arterial west of Carbon Canyon Road on the Chino Hills General Plan Circulation Element. Four travel lanes are provided to the west of Pipeline Avenue and five travel lanes are provided to the east of Pipeline Avenue. Chino Hills Parkway has raised medians along the majority of its length, with several painted medians provided between Grand Avenue and Eucalyptus Drive, as well as several two-way left-turn lanes between Peyton Drive and Pipeline Avenue within the project vicinity. On-street parking is prohibited on Chino Hills Parkway. The posted speed limit on Chino Hills Parkway is 45 mph. Traffic signals control the study intersections of Chino Hills Parkway at Peyton Drive. The City of Chino Hills Bicycle Master Plan identifies Chino Hills Parkway as a Class II bicycle facility.

Pipeline Avenue is a four lane divided roadway oriented in the north-south direction east of the Project site. The roadway of Pipeline Avenue aligns west and becomes Eucalyptus Avenue, at its north end in the city. The posted speed limit on Pipeline Avenue is 35 mph in the vicinity of the project. Pipeline Avenue is classified as a Collector on the Chino Hills General Plan Circulation Element. On-street parking is prohibited on Pipeline Avenue.

Peyton Drive is a four- to six-lane divided roadway oriented in the north-south direction directly east of the Project site. Peyton Drive has four lanes south of Chino Hills Parkway and six lanes north of Eucalyptus Avenue. The posted speed limit on Peyton Drive is 40 mph south of Eucalyptus Avenue, 45 mph between Eucalyptus Avenue and Grand Avenue, and 40 mph north of Grand

Avenue. Peyton Drive is classified as a Principal Arterial north of Eucalyptus Avenue and a Minor Arterial south of Eucalyptus Avenue on the Chino Hills General Plan Circulation Element. On-street parking is prohibited on Peyton Drive. Traffic signals control the study intersections of Peyton Drive at Eucalyptus Avenue, Morningfield Drive, and Chino Hills Parkway. The study intersections of Peyton Drive at the two Project Driveways are controlled by one-way stops. The City of Chino Hills Bicycle Master Plan identifies Peyton Drive as a Class II bicycle facility.

Carbon Canyon Road/Rustic Drive is generally a two-lane divided roadway oriented in the north-south direction south of the Project site. The street is named Carbon Canyon Road south of Chino Hills Parkway and named Rustic Drive north of Chino Hills Parkway. The posted speed limit on Carbon Canyon Road and Rustic Drive is 45 mph and 25 mph, respectively. Carbon Canyon Road is classified as a Principal Arterial on the Chino Hills General Plan Circulation Element. On-street parking is prohibited on Carbon Canyon Road/Rustic Drive. The City of Chino Hills Bicycle Master Plan identifies Carbon Canyon Road as a Class II and Class III bicycle facility over certain sections of this State Route.

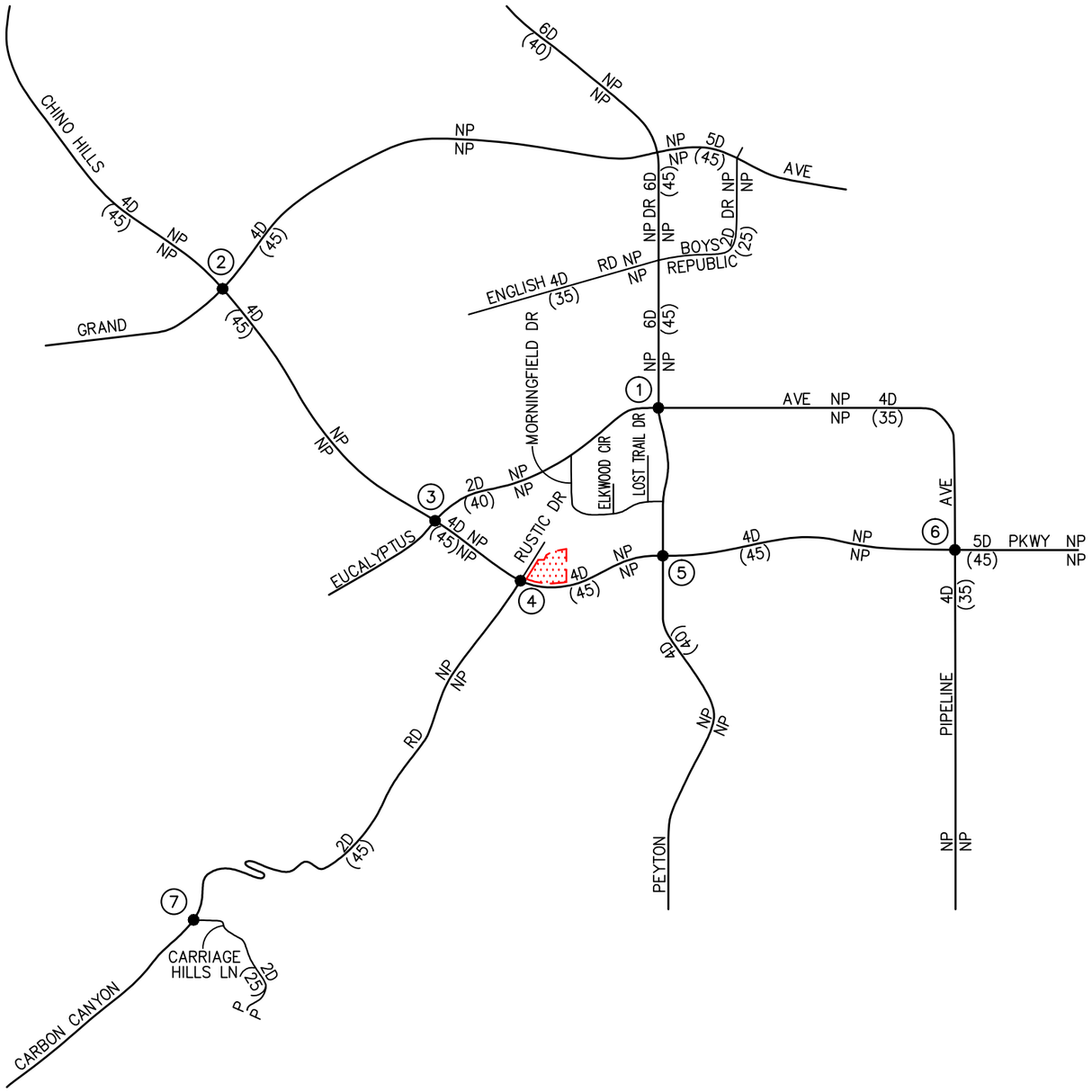
Grand Avenue is a four- to five-lane divided roadway oriented in the east-west direction north of the Project site. Grand Avenue has four lanes west of Peyton Drive and five lanes east of Peyton Drive to SR-71. The posted speed limit on this roadway is 45 miles per hour (mph) and parking is not permitted on either side of the roadway. Grand Avenue is classified as a Minor Arterial west of Peyton Drive and a Principal Arterial east of Peyton Drive on the Chino Hills General Plan Circulation Element. The City of Chino Hills Bicycle Master Plan identifies Grand Avenue as a Class II bicycle facility.

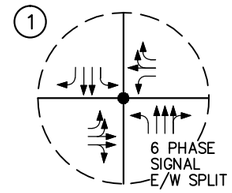
Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

3.1.1 *Public Transit*

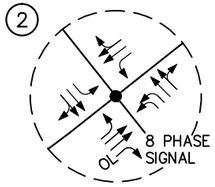
Public transit bus service is provided in the project area by the Omnitrans, a public transportation agency in San Bernardino County. Two Omnitrans bus routes operate within the vicinity of the Project site along Peyton Drive, Pipeline Avenue, Grand Avenue and Chino Hills Parkway. Route 88 operates along Peyton Drive and Grand Avenue, north of the Project site, between the Chino Transit Center and the Montclair Transit Center, linking the City of Chino Hills with the City of Chino and City of Montclair. The bus stop for Route 88 nearest to the Project site is located south of the intersection at Peyton Drive and Grand Avenue.

Route 365 operates along Peyton Drive, directly adjacent to the Project site, as well as Pipeline Avenue, Grand Avenue and Chino Hills Parkway, connecting to the Chino Transit Center linking the City of Chino Hills with the City of Chino. The bus stop for Route 365 nearest to the Project site is located at intersection of Peyton Drive and Chino Hills Parkway.

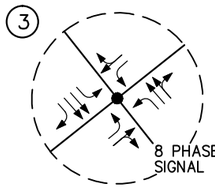




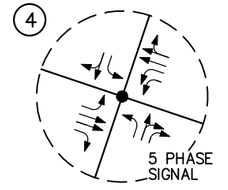
PEYTON DR @ EUCALYPTUS AVE



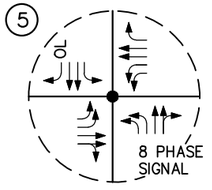
CHINO HILLS PKWY @ GRAND AVE



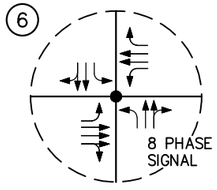
CHINO HILLS PKWY @ EUCALYPTUS AVE



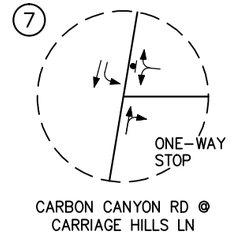
RUSTIC DR/CARBON CANYON RD @ CHINO HILLS PKWY



PEYTON DR @ CHINO HILLS PKWY



PIPELINE AVE @ CHINO HILLS PKWY



CARBON CANYON RD @ CARRIAGE HILLS LN

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
OL = OVERLAP
= PROJECT SITE

FIGURE 3-1

EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

BUDDHIST TEMPLE, CHINO HILLS

3.2 Existing Traffic Volumes

Seven (7) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential Project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the Project.

Figures 3-2 and ***3-3*** illustrate the existing AM and PM peak hour traffic volumes at the seven (7) key study intersections evaluated in this report, respectively. The existing AM and PM peak hour traffic counts were conducted in September 2016 by AimTD, LLC. The traffic volumes illustrated in *Figures 3-2* and *3-3* are comprised of passenger vehicles, large 2-axle trucks, 3-axle trucks and 4+-axle trucks. The truck traffic turning movements were converted to passenger car equivalents (P.C.E.'s) using SANBAG approved factors. P.C.E. factors of 1.5, 2.0 and 3.0 were utilized for large 2-axle trucks, 3-axle trucks and 4+-axle trucks, respectively. *Figure 3-3* also illustrates the existing daily traffic volumes on key roadway segments. ***Appendix B*** contains copies of the peak hour PCE count summary tables (converting truck traffic turning movements to P.C.E.'s) for the existing key study intersections evaluated in this report.

3.3 Existing Intersection Conditions

In conformance with the City of Chino Hills and San Bernardino County CMP requirements, existing AM peak hour and PM peak hour operating conditions were evaluated using the methodology outlined in the *Highway Capacity Manual (HCM)*.

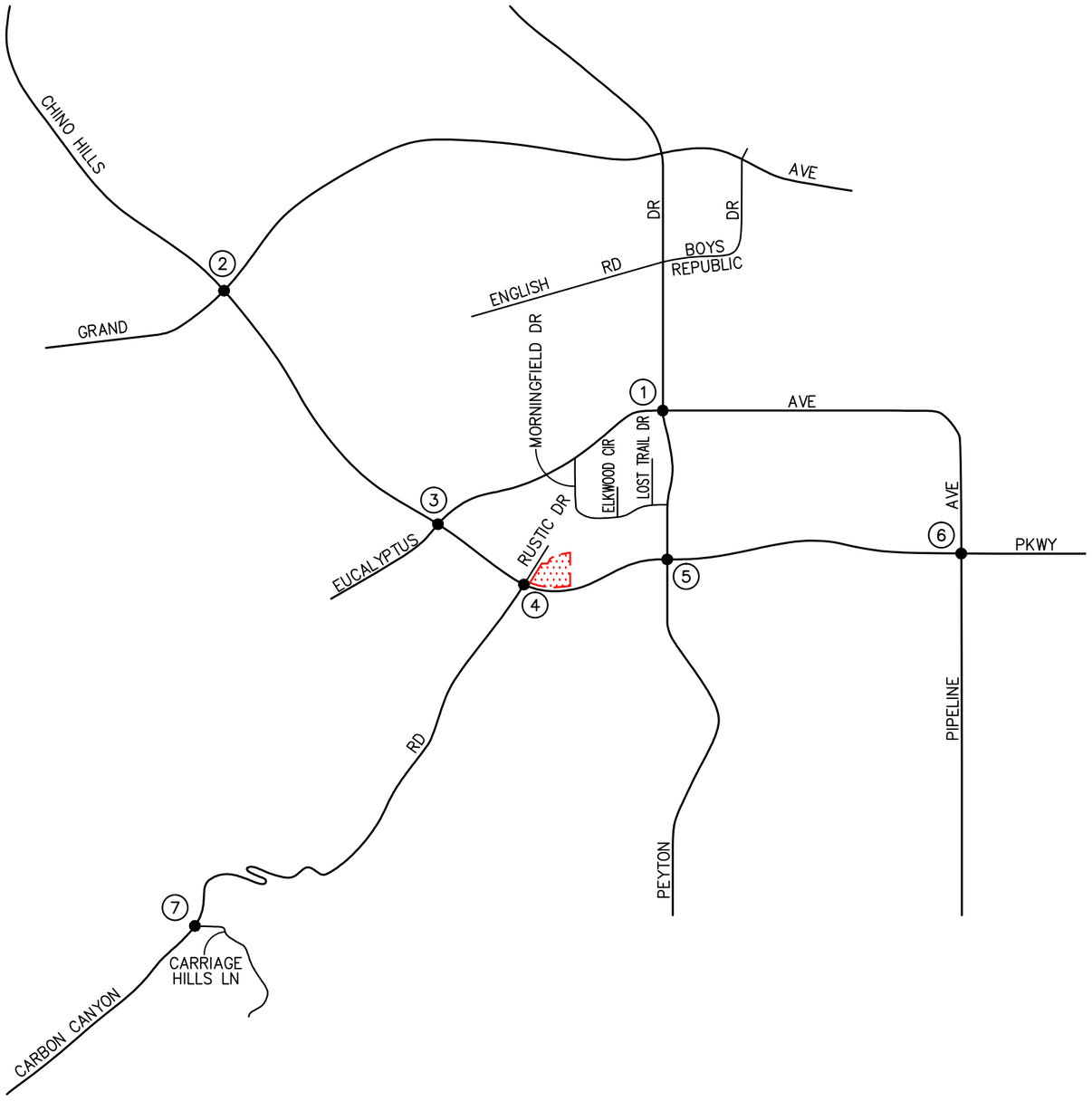
3.3.1 *Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)*

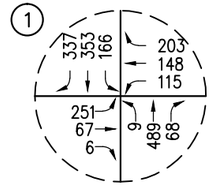
Based on the HCM operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. This method is in conformance with Caltrans standards. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in ***Table 3-1***.

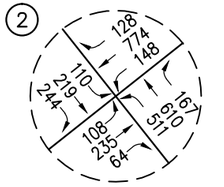
3.3.2 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the

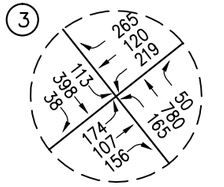




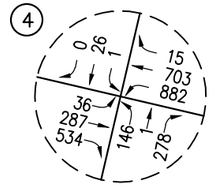
1 PEYTON DR @ EUCALYPTUS AVE



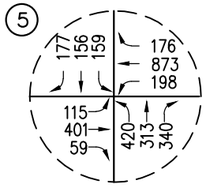
2 CHINO HILLS PKWY @ GRAND AVE



3 CHINO HILLS PKWY @ EUCALYPTUS AVE



4 RUSTIC DR/CARBON CANYON RD @ CHINO HILLS PKWY



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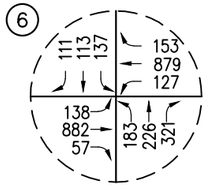
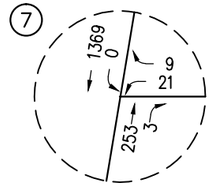


6 PIPELINE AVE @ CHINO HILLS PKWY



7 CARBON CANYON RD @ CARRIAGE HILLS LN

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
= PROJECT SITE
(#) = STUDY INTERSECTION

FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS

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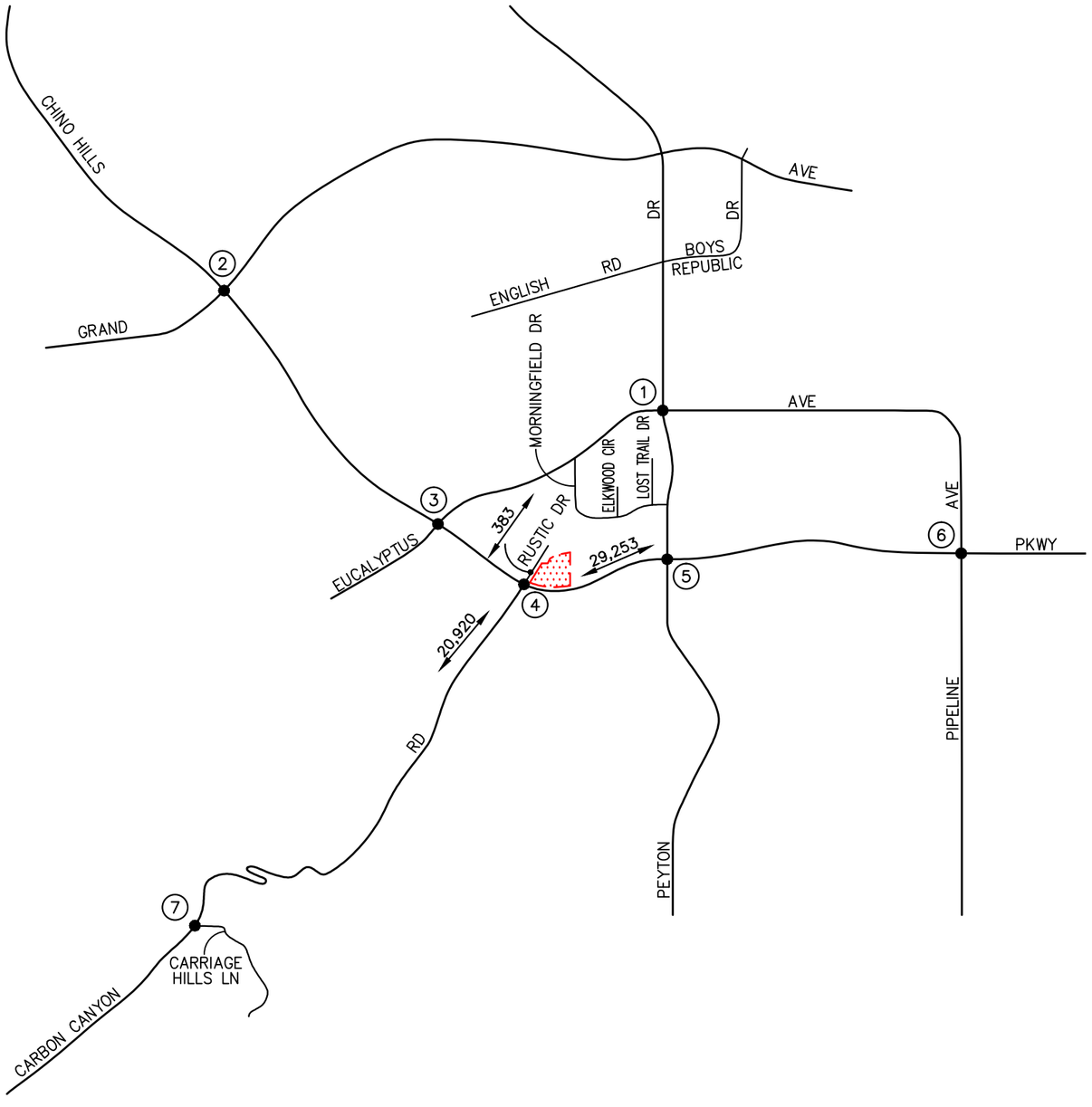
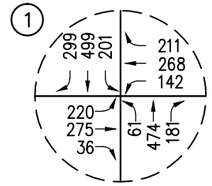
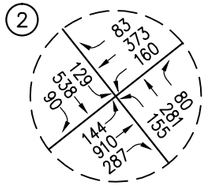
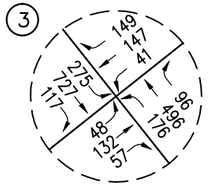




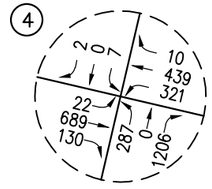
PEYTON DR @
EUCALYPTUS AVE



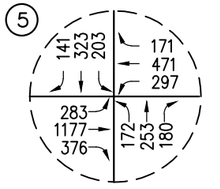
CHINO HILLS PKWY @
GRAND AVE



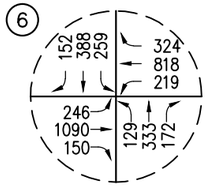
CHINO HILLS PKWY @
EUCALYPTUS AVE



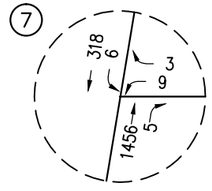
RUSTIC DR/CARBON CANYON RD @
CHINO HILLS PKWY



PEYTON DR @
CHINO HILLS PKWY



PIPELINE AVE @
CHINO HILLS PKWY



CARBON CANYON RD @
CARRIAGE HILLS LN

LINSCOTT LAW & GREENSPAN
engineers

N
NO SCALE

KEY

(#) = STUDY INTERSECTION

XX,XXX = DAILY TRAFFIC VOLUMES

= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR AND DAILY TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS

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subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 3-2***.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM)[2]

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq$ 10.0	LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume –to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	> 10.0 and $\leq$ 20.0	LOS B describes operations with a control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume – to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20.0 and $\leq$ 35.0	LOS C describes operations with a control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35.0 and $\leq$ 55.0	LOS D describes operations with a control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55.0 and $\leq$ 80.0	LOS E describes operations with a control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	$\geq$ 80.0	LOS F describes operations with a control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

[2] Source: *Highway Capacity Manual 2010*, Chapter 18 (Signalized Intersections).

TABLE 3-2

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[3]

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

[3] Source: *Highway Capacity Manual 2010*, Chapter 19 (Unsignalized Intersections).

3.3.3 *Level of Service and Traffic Impact Criteria*

City of Chino Hills Criteria

According to the City of Chino Hills guidelines, a significant traffic impact occurs when the intersections or roadway projected to operate at LOS D or better without the Project would exceed LOS D with the Project.

A significant traffic impact is also considered to occur if the Project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the Project.

San Bernardino County CMP Criteria

The most current San Bernardino County CMP definition of deficiency is based on maintaining a level of service standard of LOS "E" or better, except where an existing LOS "F" condition is identified in the CMP document.

Caltrans Criteria

Caltrans District 8 has established that LOS D is the operating standard for all Caltrans facilities. Caltrans has determined that all state owned facilities that operate below LOS D should be identified and improved to an acceptable LOS. The *Caltrans Traffic Impact Study Guidelines dated December 2002* does state that if an existing state owned facility operates at less than LOS D, the existing service level should be maintained.

3.4 Existing Level of Service Results

Table 3-3 summarizes the existing peak hour service level calculations for the seven (7) key study intersections based on existing traffic volumes and current street geometry. Review of *Table 3-3* indicates that two (2) key study intersections currently operates at unacceptable LOS during the weekday AM peak hour and PM peak hour, located at Carbon Canyon Road and Carriage Hills Lane and Peyton Drive at Chino Hills Parkway. The remaining five (5) key study intersections currently operate at an acceptable LOS D or better. The locations at an adverse LOS are as follow:

		AM Peak Hour			PM Peak Hour		
Key Intersection		Delay	V/C	LOS	Delay	V/C	LOS
5.	Peyton Drive at Chino Hills Parkway	--	--	--	72.1 s/v	0.920	E
7.	Carbon Canyon Road at Carriage Hills Lane	39.5 s/v	0.218	E	48.8 s/v	0.108	E

Appendix C presents the HCM/LOS calculation worksheets for the key study intersections.

TABLE 3-3
EXISTING PEAK HOUR LEVELS OF SERVICE[4]

Key Intersections	Time Period	Control Type	Delay	V/C	LOS
1. Peyton Drive at Eucalyptus Avenue	AM	6∅ Traffic	29.1 s/v	0.453	C
	PM	Signal	31.5 s/v	0.490	C
2. Chino Hills Parkway at Grand Avenue	AM	8∅ Traffic	42.4 s/v	0.740	D
	PM	Signal	36.5 s/v	0.706	D
3. Chino Hills Parkway at Eucalyptus Avenue	AM	8∅ Traffic	44.9 s/v	0.885	D
	PM	Signal	30.8 s/v	0.664	C
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway	AM	5∅ Traffic	24.7 s/v	0.794	C
	PM	Signal	28.2 s/v	0.745	C
5. Peyton Drive at Chino Hills Parkway	AM	8∅ Traffic	38.5 s/v	0.674	D
	PM	Signal	**72.1 s/v**	**0.920**	**E**
6. Pipeline Avenue at Chino Hills Parkway	AM	8∅ Traffic	42.2 s/v	0.733	D
	PM	Signal	49.8 s/v	0.791	D
7. Carbon Canyon Road at Carriage Hills Lane	AM	One – Way	**39.5 s/v**	**0.218**	**E**
	PM	Stop	**48.8 s/v**	**0.108**	**E**

Note:

- **Bold** LOS values indicate adverse service levels based on City LOS standards; s/v = seconds per vehicle (delay).

[4] ***Appendix C*** contains HCM/LOS calculation worksheets.

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the Project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound Project traffic. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of Project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and Project traffic assignments developed, the impact of the proposed Project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast Project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the Project's impacts identified.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 9th Edition of Trip Generation, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2012].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the Project as well as the Project's trip generation potential. Based on the Project description, the average trip rates for ITE Land Use 560: Church were utilized to forecast the Project's trip generation potential. A review of the lower portion of *Table 5-1* indicates that the proposed Project is forecast to generate 200 weekday daily trips (one half arriving, one half departing), with 12 trips (7 inbound, 5 outbound) produced during the AM peak hour and 12 trips (6 inbound, 6 outbound) produced during the PM peak hour.

Based on review of the proposed Project's activity plan, it has been determined that the majority of the Project's weekday activities occur during non-peak hours. Hence, to provide a conservative assessment the trip generation forecast presented in *Table 5-1* was utilized throughout this report.

TABLE 5-1

PROJECT TRAFFIC GENERATION RATES[5]

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Rates:							
▪ 560: Church (TE/1000 SF)	9.11	62	38	0.56	48	52	0.55
Generation Forecast:							
Proposed Project							
▪ Buddhist Temple (21,936 SF)	200	7	5	12	6	6	12

[5] Source*: Trip Generation, 9th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2012)].

5.2 Project Traffic Distribution and Assignment

Figure 5-1 illustrates the general, directional traffic distribution pattern for the passenger car traffic of the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes,
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- ingress/egress availability at the project site, and
- input from City staff.

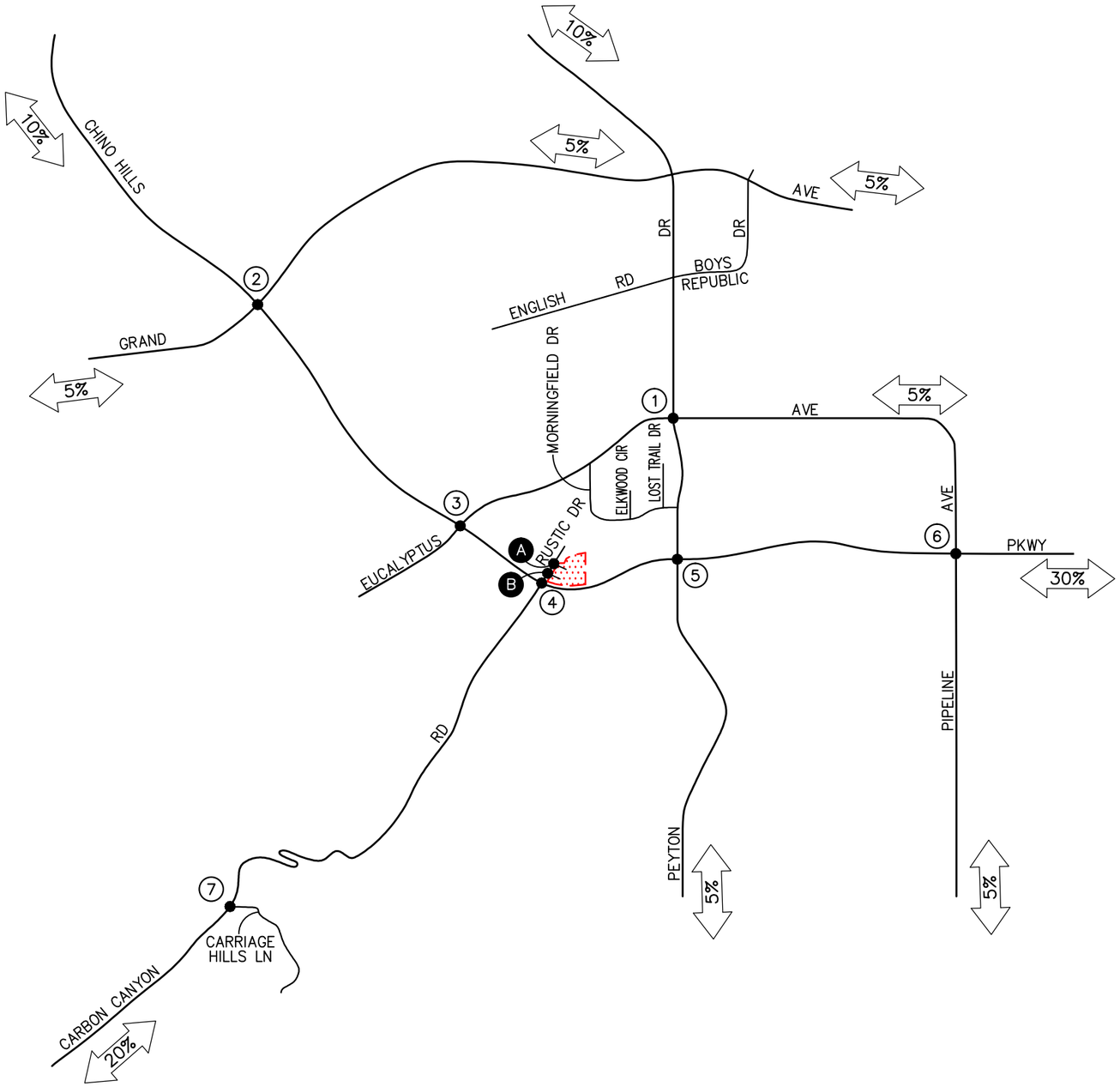
The anticipated AM and PM peak hour traffic volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3***, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in the lower portion of *Table 5-1*. *Figure 5-3* also illustrates the added proposed Project daily traffic volumes on key roadway segments.

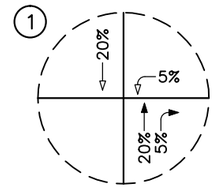
5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and estimated traffic generated from the proposed Project, assuming full buildout of Phase 1, 2 and 3.

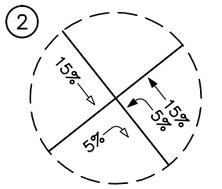
These forecast traffic conditions have been prepared pursuant to the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

Figures 5-4 and ***5-5*** present projected AM and PM peak hour traffic volumes at the seven (7) key study intersections and two (2) project driveways with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively. *Figure 5-5* also illustrates the existing plus project daily traffic volumes on key roadway segments.





PEYTON DR @
EUCALYPTUS AVE



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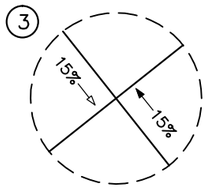

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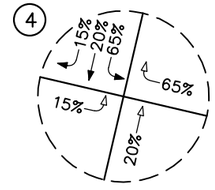

RUSTIC DR/CARBON CANYON RD @
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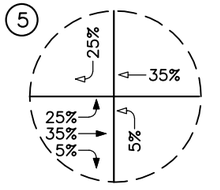

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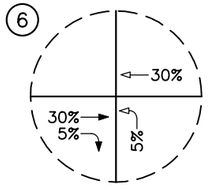
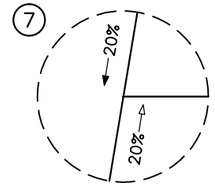
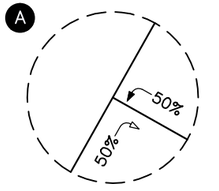


PIPELINE AVE @
CHINO HILLS PKWY



CARBON CANYON RD @
CARRIAGE HILLS LN



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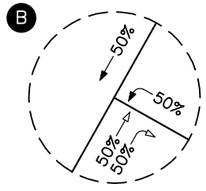
PROJECT DWY 1



RUSTIC DR @
PROJECT DWY 2

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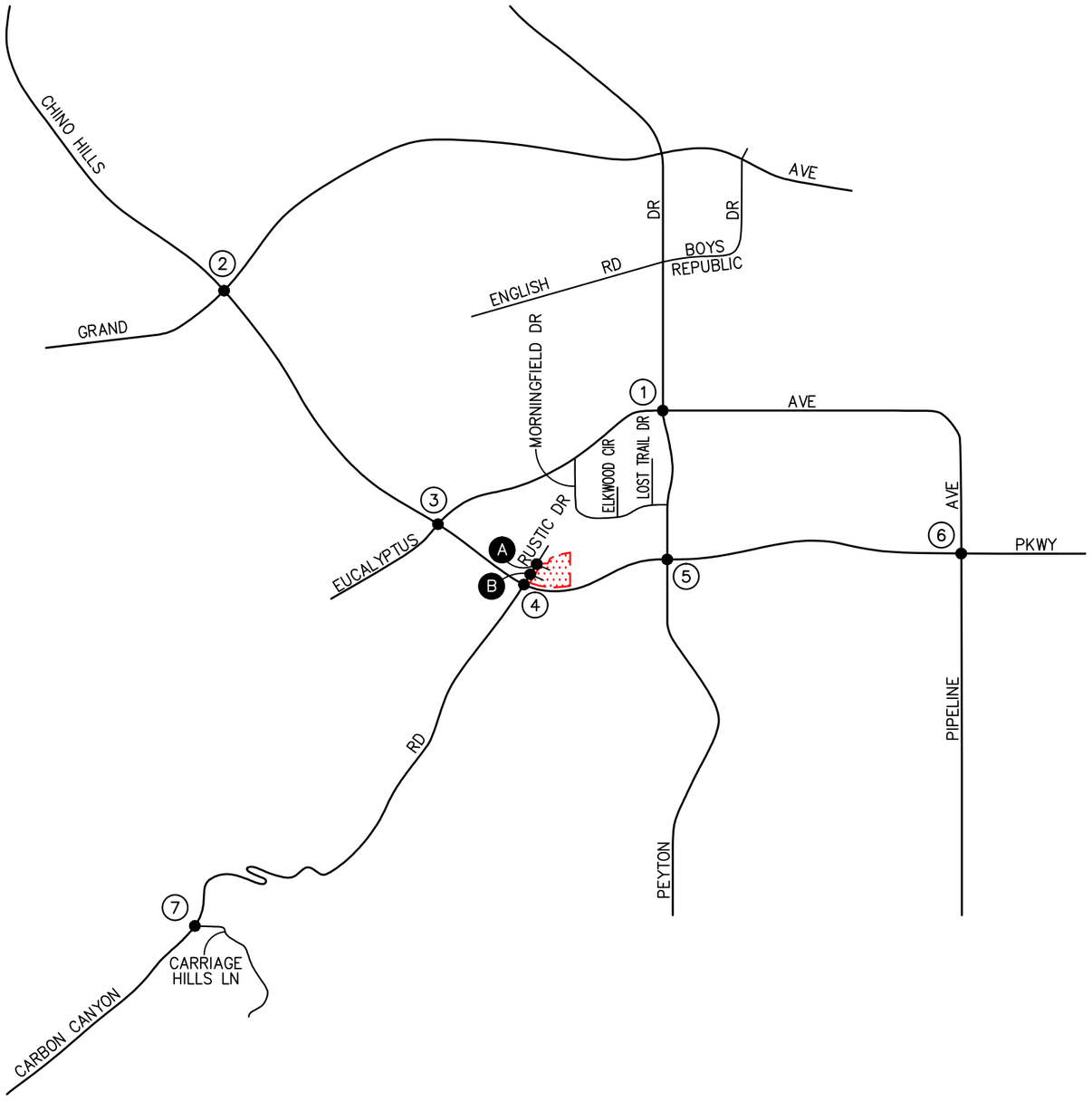
LINSCOTT LAW & GREENSPAN engineers

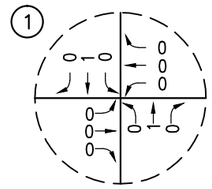
N NO SCALE

KEY
(#) = STUDY INTERSECTION
= INBOUND PERCENTAGE
= OUTBOUND PERCENTAGE
= PROJECT SITE

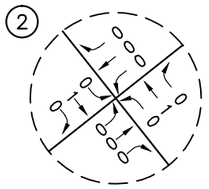
FIGURE 5-1

PROJECT TRIP DISTRIBUTION PATTERN
BUDDHIST TEMPLE, CHINO HILLS

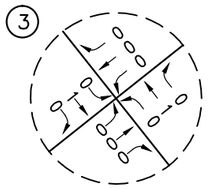




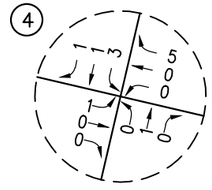
PEYTON DR @
EUCALYPTUS AVE



CHINO HILLS PKWY @
GRAND AVE



CHINO HILLS PKWY @
EUCALYPTUS AVE



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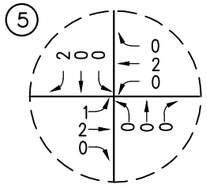
CHINO HILLS PKWY



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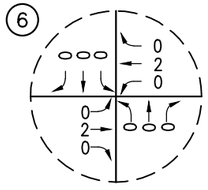

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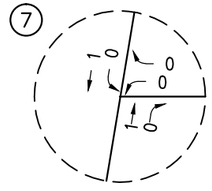

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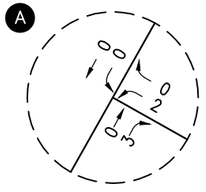

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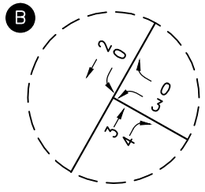

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PROJECT DWY 2

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LINSCOTT LAW & GREENSPAN engineers

N

NO SCALE

KEY

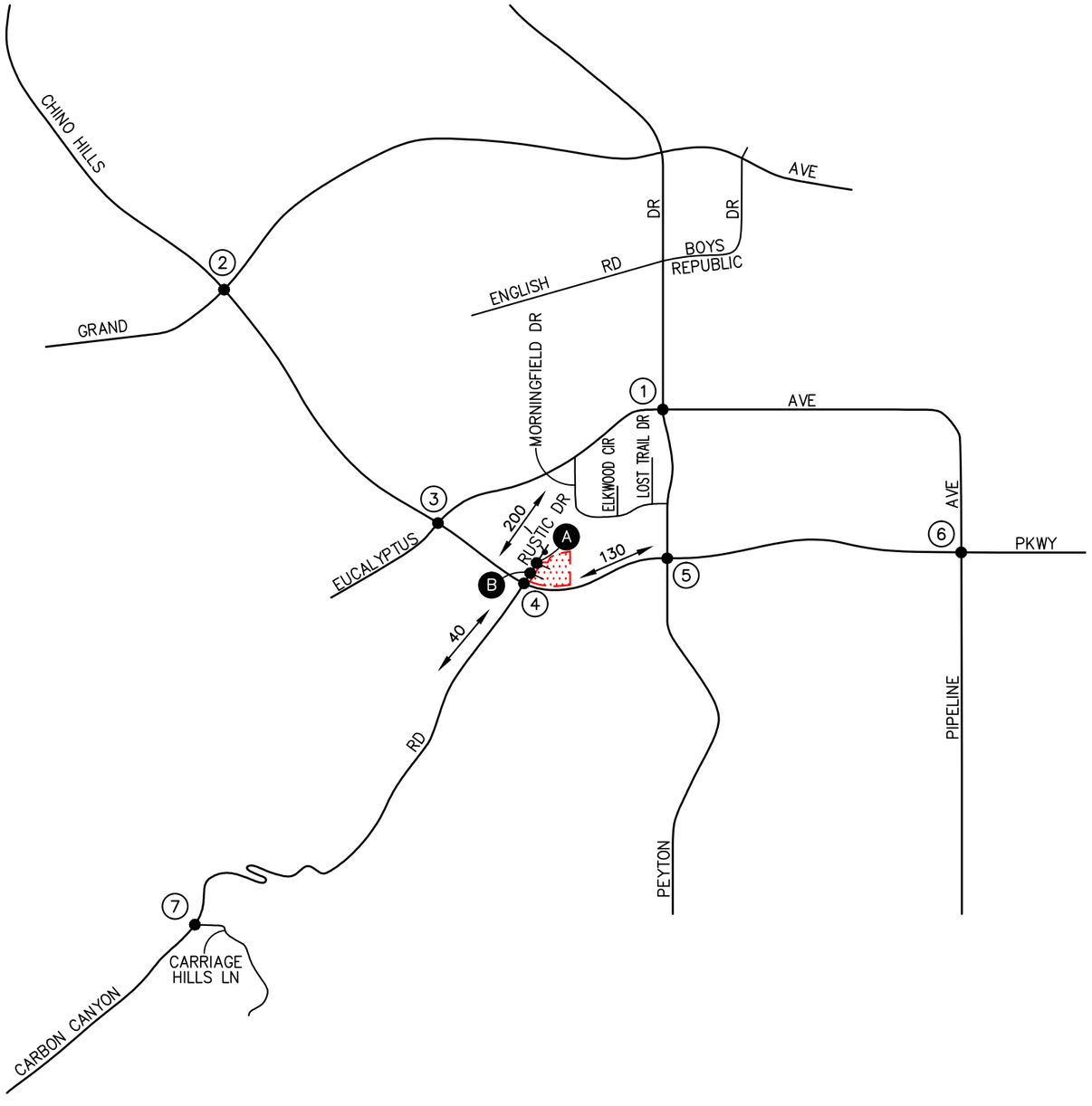
= PROJECT SITE

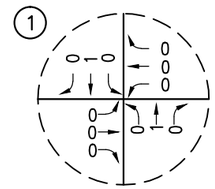
(#) = STUDY INTERSECTION

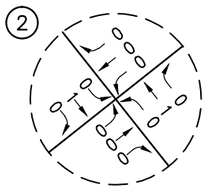
FIGURE 5-2

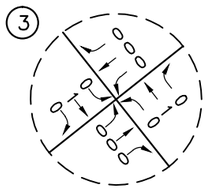
AM PEAK HOUR PROJECT ONLY TRAFFIC VOLUMES

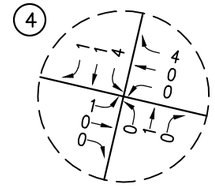
BUDDHIST TEMPLE, CHINO HILLS

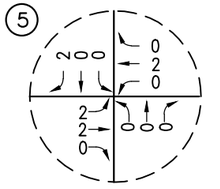


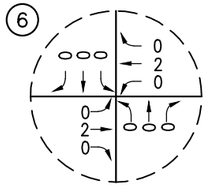


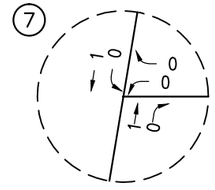


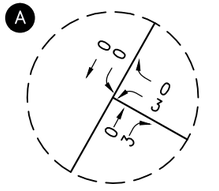


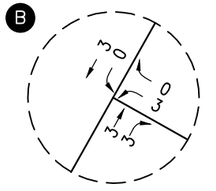












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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

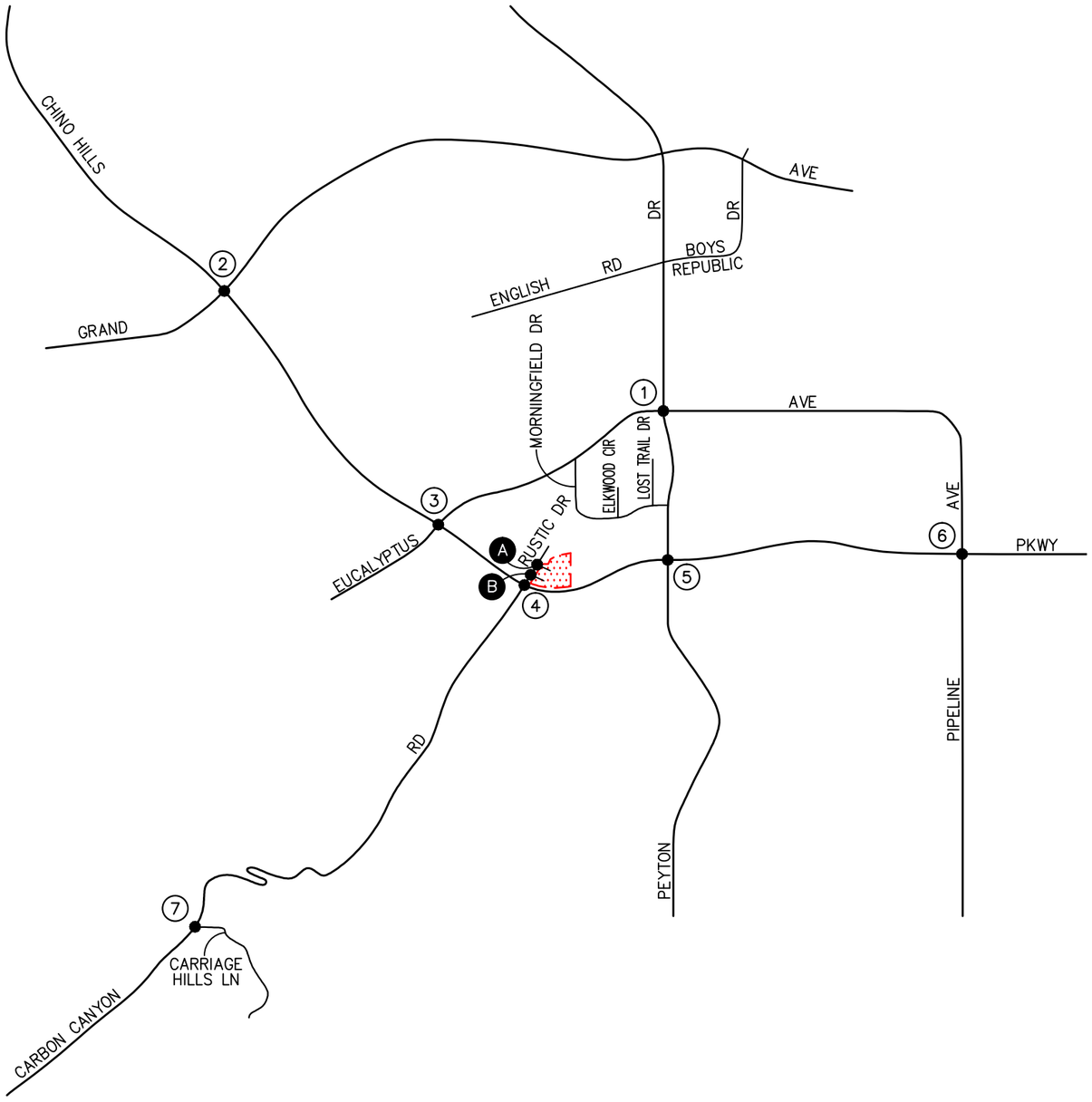
XX,XXX = DAILY TRAFFIC VOLUMES

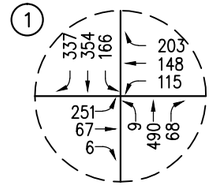
= PROJECT SITE

FIGURE 5-3

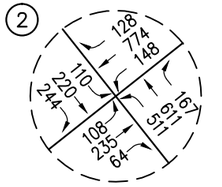
PM PEAK HOUR AND DAILY PROJECT ONLY TRAFFIC VOLUMES

BUDDHIST TEMPLE, CHINO HILLS





PEYTON DR @
EUCALYPTUS AVE



CHINO HILLS PKWY @
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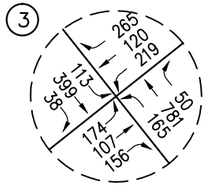

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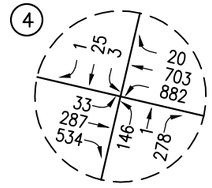

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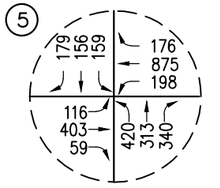
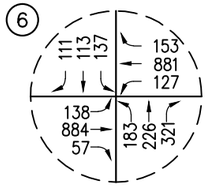
CHINO HILLS PKWY



PEYTON DR @
CHINO HILLS PKWY



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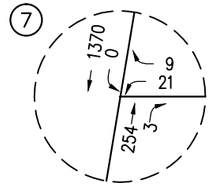
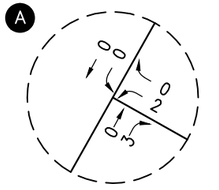
CHINO HILLS PKWY



CARBON CANYON RD @
CARRIAGE HILLS LN



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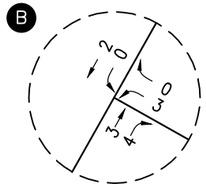

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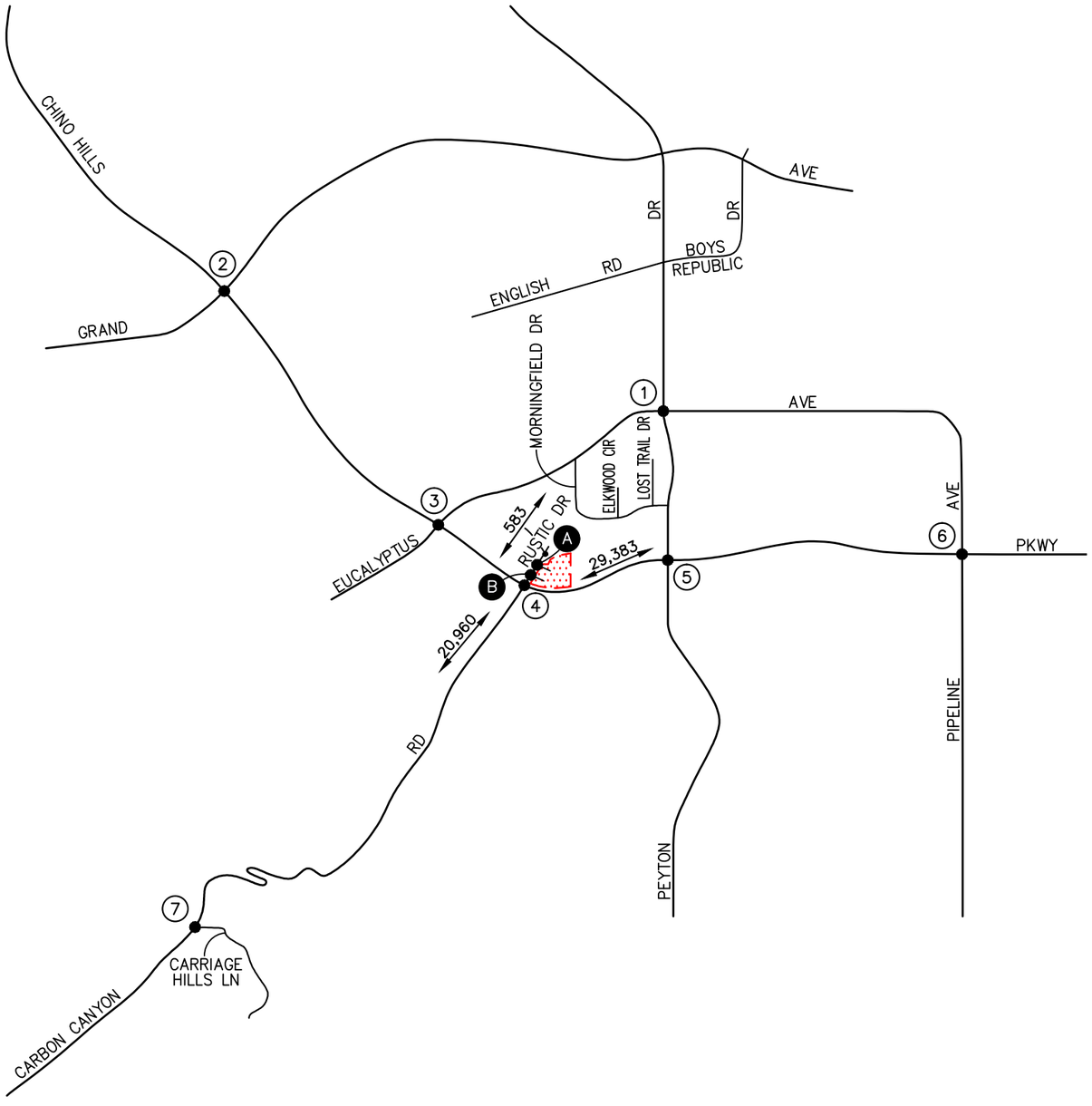
LINSCOTT LAW & GREENSPAN engineers

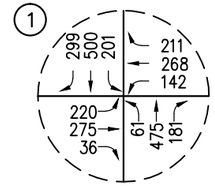
N NO SCALE

KEY
= PROJECT SITE
= STUDY INTERSECTION

FIGURE 5-4

EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS





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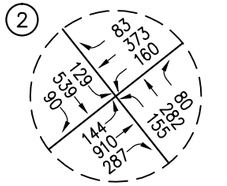
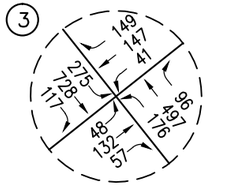
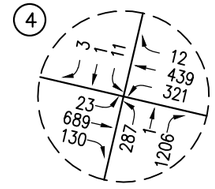
EUCALYPTUS AVE



CHINO HILLS PKWY @
GRAND AVE



CHINO HILLS PKWY @
EUCALYPTUS AVE



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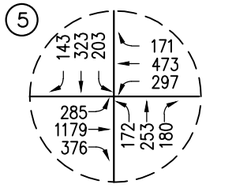
CHINO HILLS PKWY



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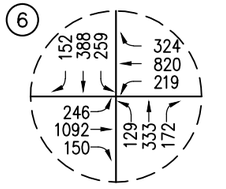
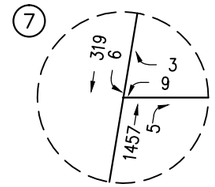
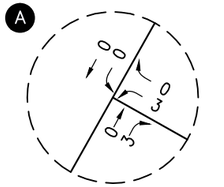
CHINO HILLS PKWY



PIPELINE AVE @
CHINO HILLS PKWY



CARBON CANYON RD @
CARRIAGE HILLS LN



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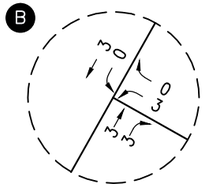
PROJECT DWY 1



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PROJECT DWY 2

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engineers

N
NO SCALE

KEY

(#) = STUDY INTERSECTION

XX,XXX = DAILY TRAFFIC VOLUMES

= PROJECT SITE

FIGURE 5-5

EXISTING PLUS PROJECT PM PEAK HOUR
AND DAILY TRAFFIC VOLUMES

BUDDHIST TEMPLE, CHINO HILLS

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area in other jurisdictions. The future growth in traffic volumes has been calculated at two percent (2%) per year. Applied to the Year 2016 existing traffic volumes, this factor results in a 18% growth in existing volumes to the near-term horizon Year 2025.

6.2 Cumulative Projects Description and Location

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) in the vicinity of the proposed Project has been researched at the City of Chino Hills, City of Chino and City of Brea. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are twenty-three (23) cumulative projects in the City of Chino Hills, forty (40) cumulative projects in the City of Chino and eight (8) cumulative projects in the City of Brea within the vicinity of the subject site. These seventy-one (71) cumulative projects have been included as part of the cumulative background setting.

Table 6-1 provides the location and a brief description for each of the seventy-one (71) cumulative projects. ***Figure 6-1*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

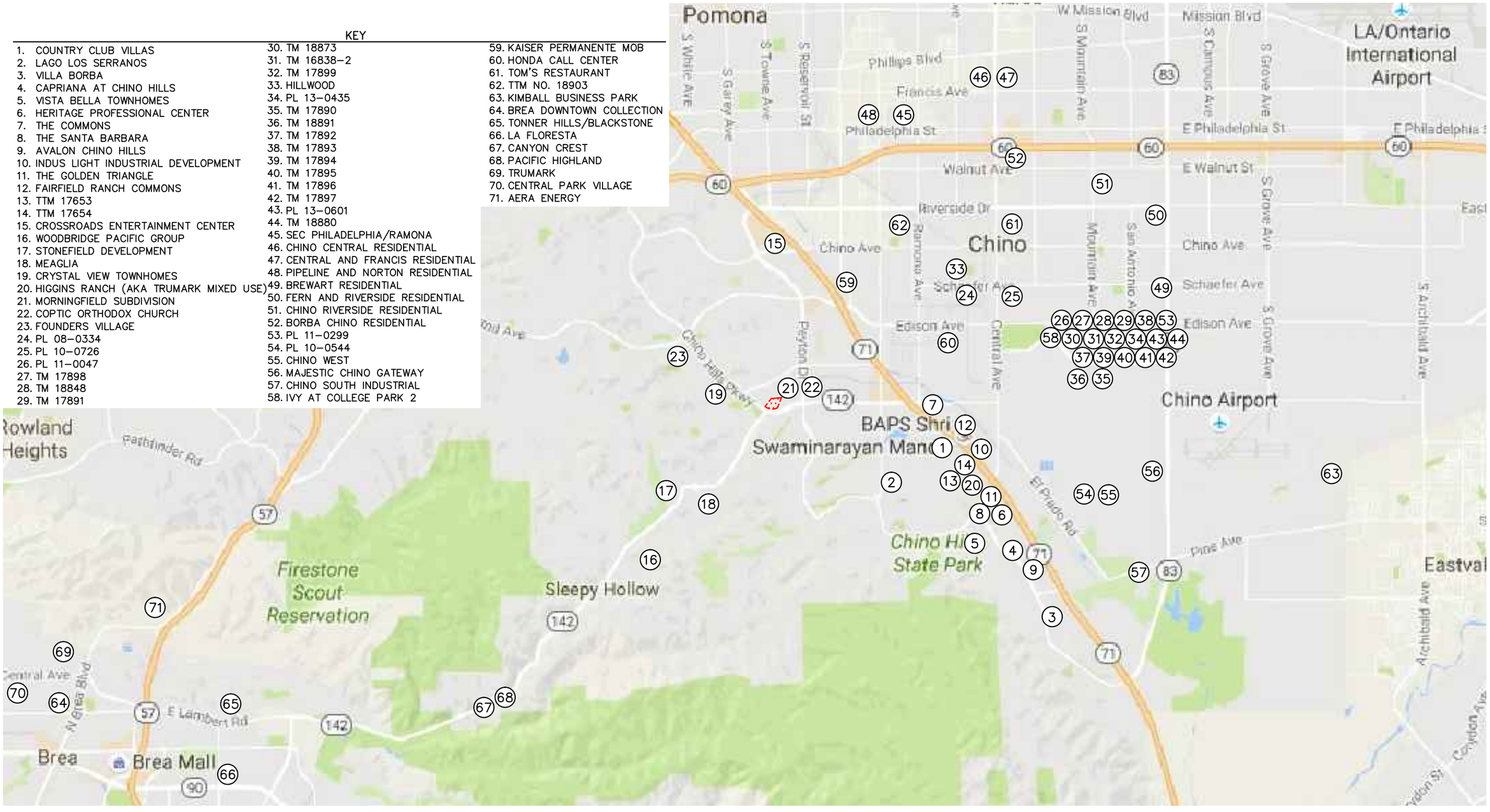
6.3 Cumulative Projects Trip Generation and Assignment

Table 6-2 summarizes the trip generation rates for the various land uses of the seventy-one (71) cumulative projects. ***Table 6-3*** presents the trip generation potential for all seventy-one (71) cumulative projects. As shown, the cumulative projects are forecast to generate a total of 136, 993 daily trips, with 9,531 trips (4,536 inbound and 4,995 outbound) forecast during the AM peak hour and 11,543 trips (5,661 inbound and 5,882 outbound) forecast during the PM peak hour.

Distribution patterns for each of the cumulative projects were developed based on the location of the trip attractors, type of land use, the site's proximity to major traffic carriers and freeways and previously completed traffic studies. The AM and PM peak hour traffic volumes associated with the seventy-one (71) cumulative projects in Year 2025 are presented in ***Figures 6-2*** and ***6-3***, respectively. *Figure 6-3* also illustrates the added cumulative projects daily traffic volumes on key roadway segments.

KEY

1. COUNTRY CLUB VILLAS
2. LAGO LOS SERRANOS
3. VILLA BORBA
4. CAPRIANA AT CHINO HILLS
5. VISTA BELLA TOWNHOMES
6. HERITAGE PROFESSIONAL CENTER
7. THE COMMONS
8. THE SANTA BARBARA
9. AVALON CHINO HILLS
10. INDUS LIGHT INDUSTRIAL DEVELOPMENT
11. THE GOLDEN TRIANGLE
12. FAIRFIELD RANCH COMMONS
13. TTM 17653
14. TTM 17654
15. CROSSROADS ENTERTAINMENT CENTER
16. WOODBRIDGE PACIFIC GROUP
17. STONEFIELD DEVELOPMENT
18. MEAGLIA
19. CRYSTAL VIEW TOWNHOMES
20. HIGGINS RANCH (AKA TRUMARK MIXED USE)
21. MORNINGFIELD SUBDIVISION
22. COPTIC ORTHODOX CHURCH
23. FOUNDERS VILLAGE
24. PL 08–0334
25. PL 10–0726
26. PL 11–0047
27. TM 17898
28. TM 18848
29. TM 17891
30. TM 18873
31. TM 16838–2
32. TM 17899
33. HILLWOOD
34. PL 13–0435
35. TM 17890
36. TM 18891
37. TM 17892
38. TM 17893
39. TM 17894
40. TM 17895
41. TM 17896
42. TM 17897
43. PL 13–0601
44. TM 18880
45. SEC PHILADELPHIA/RAMONA
46. CHINO CENTRAL RESIDENTIAL
47. CENTRAL AND FRANCIS RESIDENTIAL
48. PIPELINE AND NORTON RESIDENTIAL
49. BREWART RESIDENTIAL
50. FERN AND RIVERSIDE RESIDENTIAL
51. CHINO RIVERSIDE RESIDENTIAL
52. BORBA CHINO RESIDENTIAL
53. PL 11–0299
54. PL 10–0544
55. CHINO WEST
56. MAJESTIC CHINO GATEWAY
57. CHINO SOUTH INDUSTRIAL
58. IVY AT COLLEGE PARK 2
59. KAISER PERMANENTE MOB
60. HONDA CALL CENTER
61. TOM'S RESTAURANT
62. TTM NO. 18903
63. KIMBALL BUSINESS PARK
64. BREA DOWNTOWN COLLECTION
65. TONNER HILLS/BLACKSTONE
66. LA FLORESTA
67. CANYON CREST
68. PACIFIC HIGHLAND
69. TRUMARK
70. CENTRAL PARK VILLAGE
71. AERA ENERGY



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N NO SCALE

KEY

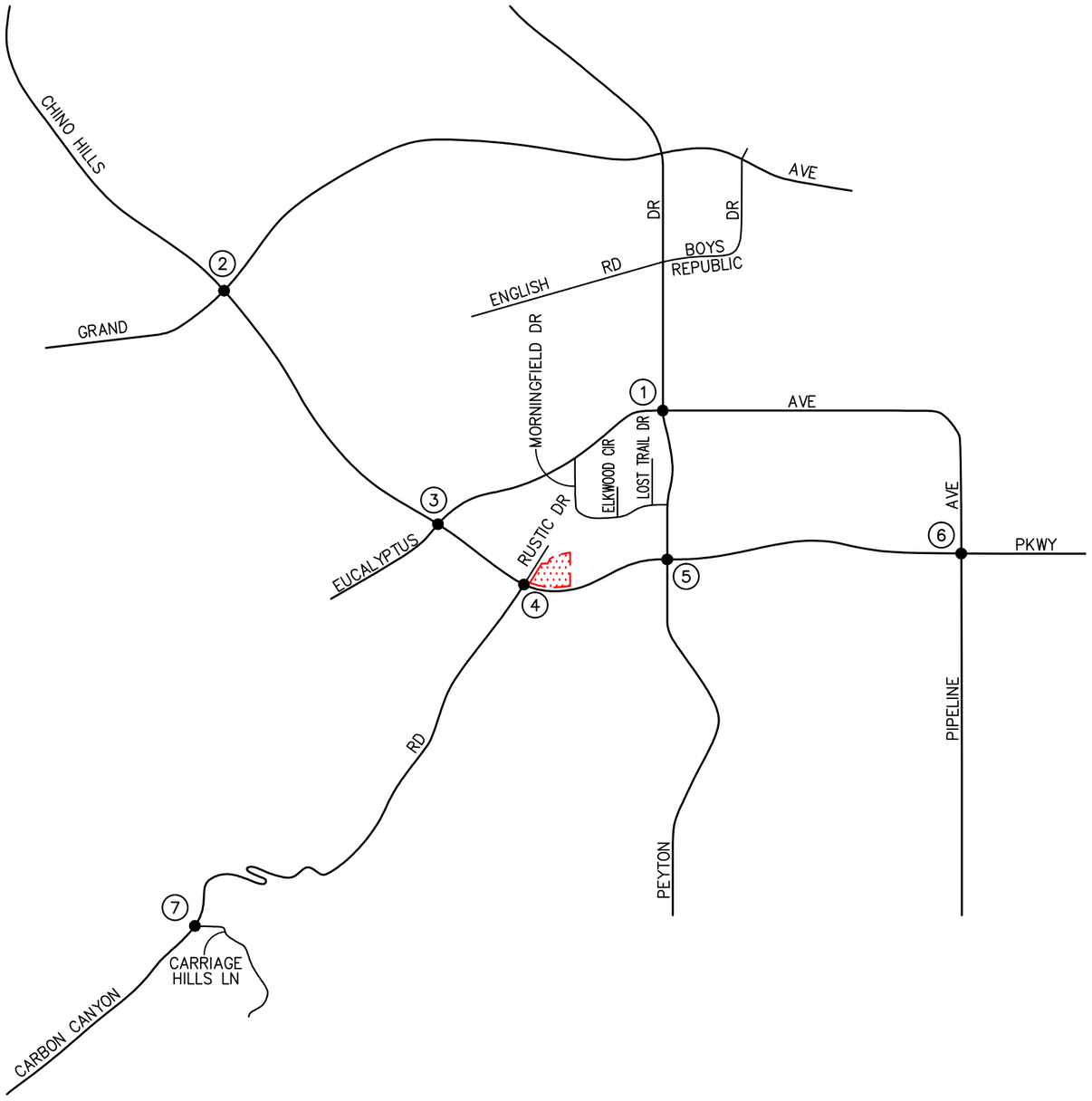
(#) = CUMULATIVE PROJECT LOCATION

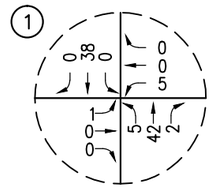
= PROJECT SITE

FIGURE 6–1

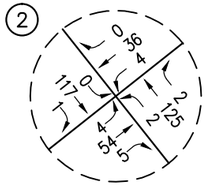
CUMULATIVE PROJECT LOCATION MAP

BUDDHIST TEMPLE, CHINO HILLS





PEYTON DR @
EUCALYPTUS AVE



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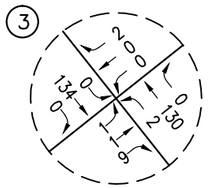
GRAND AVE



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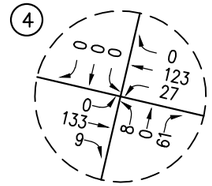

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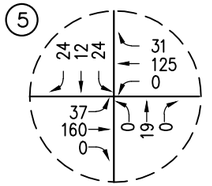

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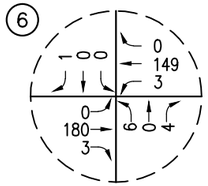

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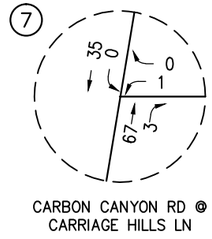

CARBON CANYON RD @
CARRIAGE HILLS LN

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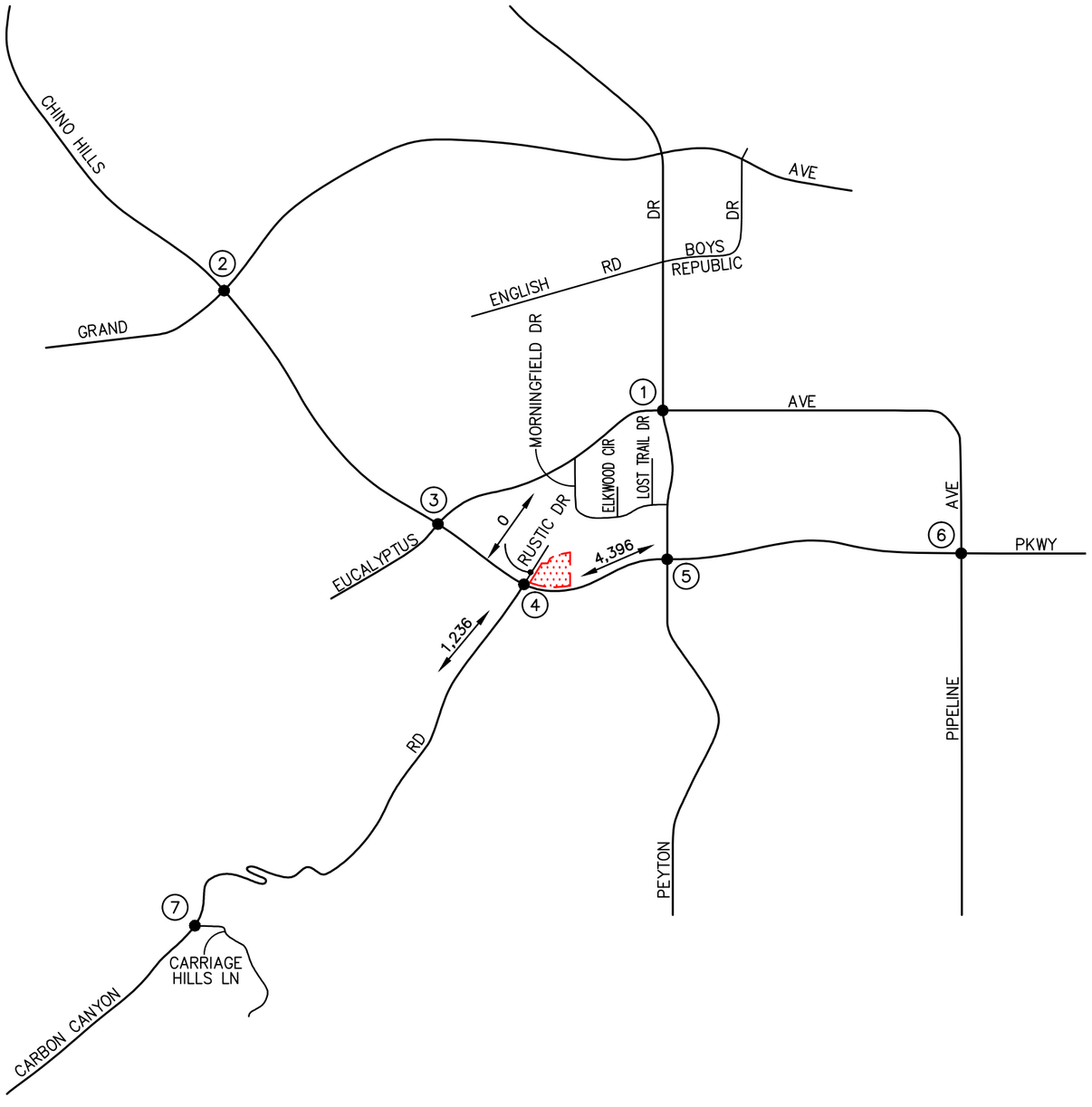
LINSCOTT LAW & GREENSPAN engineers

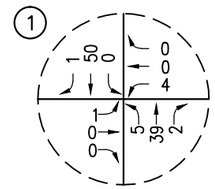
N NO SCALE

KEY
= PROJECT SITE
(#) = STUDY INTERSECTION

FIGURE 6-2

AM PEAK HOUR CUMULATIVE PROJECT TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS





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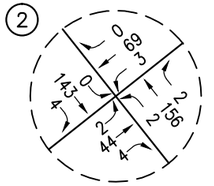

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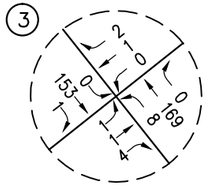
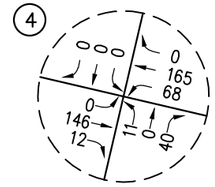


CHINO HILLS PKWY @
EUCALYPTUS AVE



RUSTIC DR/CARBON CANYON RD @
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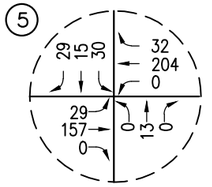
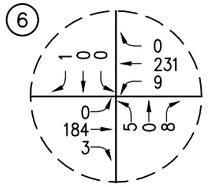
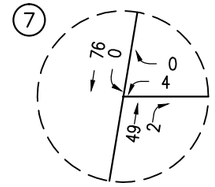


PEYTON DR @
CHINO HILLS PKWY



PIPELINE AVE @
CHINO HILLS PKWY



CARBON CANYON RD @
CARRIAGE HILLS LN

LINSCOTT LAW & GREENSPAN
engineers

N
NO SCALE

KEY

(#) = STUDY INTERSECTION

XX,XXX = DAILY TRAFFIC VOLUMES

= PROJECT SITE

FIGURE 6-3

PM PEAK HOUR AND DAILY CUMULATIVE PROJECT TRAFFIC VOLUMES

BUDDHIST TEMPLE, CHINO HILLS

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TABLE 6-1

LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[6]

No.	Cumulative Project	Location/Address	Description
		City of Chino Hills	
1.	Country Club Villas	On Pomona Rincon Road between Wallace Ave and Los Serranos Road	46 DU condominium
2.	Lago Los Serranos	Southwest corner of Ramona Avenue and Bird Farm Road	95 DU condominium
3.	Vila Borba	West and east of Butterfield Ranch Road near Pine Avenue	351 DU single family detached residential, 162 DU condominium/ townhouse, 5 acre park[7]
4.	Capriana at Chino Hills (aka Villagio at Chino Hills)	Southeast corner of Butterfield Ranch Road and Picasso Drive	286 DU apartments
5.	Vista Bella Townhomes	Southwest corner of Butterfield Ranch Road and St. Gaudens Drive	65 DU townhomes
6.	Heritage Professional Center	Southeast of Soquel Canyon Parkway and Pomona Rincon Road, east of Chino Hills High School	60,000 SF hospital, 86,943 SF medical office building, 120 room hotel, 35,300 SF retail, 7,200 SF restaurant buildings
7.	The Commons	South of Chino Hills Parkway, east of Ramona Avenue, and north of SR-71	529,769 SF shopping center[8]
8.	The Santa Barbara (aka Higgins Mixed-use)	Southeast corner of Soquel Canyon Road and Pomona Rincon Road, north of Butterfield Ranch Road	324 multifamily dwelling units and 14,500 SF of retail/commercial floor area to 10,000 SF of retail space, and a 4,500 SF restaurant.
9.	Avalon Chino Hills (formerly OMP Apartments)	East of Butterfield Ranch Road, between Slate and Sagebush	331 DU apartment complex and 14.92 acre City Park
10.	Indus Light Industrial Development	North of Fairfield Ranch Road at Los Serranos Road	100,330 SF of warehouse/industrial floor area
11.	The Golden Triangle	Northeast corner of Soquel Canyon Parkway and Pomona Rincon Road	60,000 SF medical office building, 116 room business hotel, 3,500 SF fast-food restaurant with drive-through, 13,125 SF high turnover sit-down restaurant, and 20,475 SF retail shop space
12.	Fairfield Ranch Commons	Northeast Corner of Fairfield Ranch and Monte Vista Avenue	346 DU apartment, 26,000 SF office, 5,000 SF mezzanine, 295,641 SF warehouse/industrial
13.	TTM 17653	Directly north of Soquel Canyon Parkway, south of Sedona Drive	27 DU single-family
14.	TTM 17654	Directly west of SR-71, east of Higgins Ranch Mixed-Use Project	12 DU single-family
15.	Crossroads Entertainment Center	Northwest of Chino Avenue and SR-71	14,500 SF fast-food restaurant with drive-through

6 Source*: City of Chino Hills Community Development Department.*

7 Per discussions with city staff, the 5 acre park has been completed.

8 Of the 529,769 SF listed, 386,787 SF is open and operating, 80,522 SF is preparing for construction/under construction, and 62,460 SF is currently anticipated future floor area.

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[9]

No.	Cumulative Project	Location/Address	Description
16.	Woodbridge Pacific Group (Canyon Hills)	Northwest of Carbon Canyon Road and west of Canyon Hills Road	76 DU single-family
17.	Stonefield Development	Northwest of Carbon Canyon Road and east of Fairway Drive	28 DU single-family
18.	Meaglia	Pinnacle Road south of Carbon Canyon Road	11 DU single-family
19.	Crystal View Townhomes	Northeast corner of Ridgeview Drive and Windmill Creek Road	29 DU townhomes
20.	Higgins Ranch (aka Trumark Mixed Use)	Northwest side of Soquel Canyon Parkway at terminus of Pomona Rincon Road, north of the Soquel Canyon Crossings shopping center	42 DU townhomes, 68 DU single-family, 18,000 SF commercial
21.	Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum	South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel	7-Lot Subdivision with semi-custom single family homes, plus 3 classrooms/71 student addition to the Lutheran School
22.	Coptic Orthodox Church	East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property	8,592 SF multi-purpose room, 8,627 SF Sanctuary and 491 SF Bookstore
23.	Founders Village	Southeast corner of Grand Avenue and Founders Drive	76 DU single-family
		City of Chino	
24.	PL 08-0334	South of Schaefer Avenue and east of Monte Vista Avenue	421,031 SF industrial/warehouse
25.	PL 10-0726	South of Schaefer Avenue and east of Central Avenue	13,672 SF office building
26.	PL 11-0047	College Park Specific Plan Area	135 Apartment units
27.	TM 17898	College Park Specific Plan Area	77 DU single family homes
28.	TM 18848	College Park Specific Plan Area	101 Condominium units
29.	TM 17891	College Park Specific Plan Area	75 DU single family homes
30.	TM 18873	College Park Specific Plan Area	140 Condominium units
31.	TM 16838-2	College Park Specific Plan Area	67 DU single family homes
32.	TM 17899	College Park Specific Plan Area	66 DU single family homes
33.	Hillwood	Monte Vista Avenue at Schaefer Avenue	409,000 SF Industrial
34.	PL 13-0435	College Park Specific Area	41 DU Single Family Homes
35.	TM 17890	South of Eucalyptus Ave and West Appalachian Street	94 DU Single Family Homes
36.	TM 18891	South of Eucalyptus Ave and East Appalachian Street	118 DU Single Family Homes
37.	TM 17892	North of Eucalyptus Avenue and East of Mountain Avenue	63 DU Single Family Homes
38.	TM 17893	South of Edison Avenue and West of Cypress Avenue	34 DU Single Family Homes
39.	TM 17894	South of Edison Avenue and East of Mountain Avenue	39 DU Single Family Homes
40.	TM 17895	North of Eucalyptus Avenue and East of Mountain Avenue	19 DU Single Family Homes

[9] Source*: City of Chino Hills* and *City of Chino*

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[10]

No.	Cumulative Project	Location/Address	Description
41.	TM 17896	NWC Satterfield Way and Mountain Avenue	67 DU Single Family Homes
42.	TM 17897	SWC of Edison Avenue and Mountain Avenue	93 DU Single Family Homes
43.	PL13-0601	North of Eucalyptus Avenue, between San Antonia Avenue and Euclid Ave	209 DU Single Family Homes
44.	TM 18880	SEC of Norton Avenue and Philadelphia Street	33 DU Single Family Homes
45.	SEC Philadelphia/Ramona	Ramona Avenue at Philadelphia Street	27,000 SF Shopping Center
46.	Chino Central Residential (PL13-0618)	East of Central Avenue and North of Francis Avenue	94 DU Single Family Homes
47.	Central and Francis Residential	Central Avenue at Francis Avenue	113 DU Single Family Homes
48.	Pipeline and Norton Residential	Philadelphia Street, between Pipeline Avenue at Norton Avenue	45 DU Single Family Homes
49.	Brewart Residential	West of Euclid Avenue, South of Red Bud Lane	127 DU Single Family Homes
50.	Fern and Riverside Residential	Fern Avenue at Riverside Drive	94 DU Single Family Homes
51.	Chino Riverside Residential	North of Riverside Drive, between Cypress Avenue and San Antonio Avenue	59 DU Single Family Homes
52.	Borba Chino Residential	North of Guardian Way, between Vernon Avenue and Benson Avenue	84 DU Single Family Homes
53.	PL 11-0299	North of Eucalyptus Avenue between Fern Avenue and Euclid Avenue	50,000 SF industrial/warehouse
54.	PL 10-0544	South of Kimball Avenue west of Mountain Avenue	300,300 SF industrial/warehouse
55.	Chino West	South of Kimball Avenue, east of Mountain Avenue and east of Cypress Avenue	127,052 SF Warehouse, 942,325 SF High-Cube Warehouse
56.	Majestic Chino Gateway	North of Kimball Avenue and west of Euclid Avenue	180,000 SF Warehouse, 2,849,400 SF High-Cube Warehouse, 25,000 SF Specialty Retail, 13,000 SF Pharmacy w/drive-thru, 8,600 SF Fast-Food w/drive-thru
57.	Chino South Industrial	North of Pine Avenue, west of Euclid Avenue and west of Fern Avenue	99,164 SF Light Industrial, 2,077,594 SF High-Cube Warehouse
58.	Ivy at College Park 2	Northwest corner of Satterfield Ranch Road and Notre Dame Avenue	200 DU Apartments
59.	Kaiser Permanente Medical Office Building	North of Grand Avenue and west of Roswell Avenue	110,000 SF of medical office; Phase I – 50,000 SF (Year 2017); Phase II – 60,000 SF (Year 2020)
60.	Honda Call Center Expansion – Phase 2	South of Edison Avenue, between Yorba Avenue and Monte Vista Avenue	26,863 SF call center expansion to be added to existing call center of 28,211 SF
61.	Tom's Restaurant	North of Washington Avenue and east of Central Avenue	3,000 SF fast-food restaurant with drive-thru
62.	Tentative Tract No. 18903	North of Chino Avenue between Pipeline Avenue and Norton Avenue	44 DU Single Family Homes

[10] Source*: City of Chino* and *City of Brea.*

TABLE 6-1 (CONTINUED)
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[11]

No.	Cumulative Project	Location/Address	Description
63.	Kimball Business Park	North of Kimball Avenue and west of Hellman Avenue	352,000 SF of high-cube warehouse/distributions center 564,000 SF of warehousing 140,500 SF of general light industrial 146,550 SF of business park
City of Brea			
64.	Brea Downtown Collection[12]	515 Brea Boulevard	30 DU
65.	Tonner Hills/Blackstone	Kramer Boulevard north of Lambert Road	795 DU single family
66.	La Floresta	Northeast corner of Valencia Avenue at Imperial Highway Northeast corner of Birch Street at Kramer Boulevard	1,110 DU, 156,000 SF commercial 247 DU[11]
67.	Canyon Crest	Carbon Canyon Road east of Olinda Place	165 DU single family
68.	Pacific Highland	Carbon Canyon Road east of Olinda Place	20 DU single family
69.	Trumark	1000 Site Drive	57 DU single family
70.	Central Park Village	400 West Central Avenue	88 DU townhomes, 369 DU apartments, 31,000 SF retail, 35,000 SF medical office
71.	Aera Energy[13]	Sphere of Influence north of City of Brea	3,600 DU

11 Source*: City of Chino* and *City of Brea.*

12 Project complete prior to study.

13 Currently listed as "inactive" with the County of Los Angeles.

TABLE 6-2

CUMULATIVE PROJECTS TRAFFIC GENERATION RATES[14]

ITE Land Use Code	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
▪ 110: General Light Industrial (TE/1000 SF)	6.97	0.81	0.11	0.92	0.12	0.85	0.97
▪ 140: Manufacturing (TE/1000 SF)	3.82	0.57	0.16	0.73	0.26	0.47	0.73
▪ 150: Warehousing (TE/1000 SF)	3.56	0.24	0.06	0.30	0.08	0.24	0.32
▪ 210: Single Family Detached (TE/DU)	9.52	0.19	0.56	0.75	0.63	0.37	1.00
▪ 220: Apartments (TE/DU)	6.65	0.10	0.41	0.51	0.40	0.22	0.62
▪ 230: Condominiums/Townhomes (TE/DU)	5.81	0.07	0.37	0.44	0.35	0.17	0.52
▪ 310: Hotel (TE/Room)	8.17	0.31	0.23	0.53	0.31	0.29	0.60
▪ 495: Recreation Community Center (TE/1000 SF)	33.82	1.35	0.70	2.05	1.34	1.40	2.74
▪ 534: Private School (K-8) (TE/Student)	2.79	0.50	0.41	0.91	0.28	0.32	0.60
▪ 560: Church (TE/1000 SF)	9.11	0.35	0.21	0.56	0.26	0.29	0.55
▪ 610: Hospital (TE/1000 SF)	13.22	0.60	0.35	0.95	0.35	0.58	0.93
▪ 710: General Office (TE/1000 SF)	11.03	1.37	0.19	1.56	0.25	1.24	1.49
▪ 720: Medical-Dental Office (TE/1000 SF)	36.13	1.89	0.50	2.39	1.00	2.57	3.57
▪ 820: Shopping Center (TE/1000 SF)	42.70	0.60	0.36	0.96	1.78	1.93	3.71
▪ 881: Pharmacy Drugstore with Drive-through (TE/1000 SF)	96.91	1.79	1.66	3.45	4.96	4.95	9.91
▪ 932: High-Turnover Sit-Down Restaurant (TE/1000 SF)	127.15	5.95	4.86	10.81	5.91	3.94	9.85
▪ 934: Fast Food Restaurant with Drive-through (TE/1000 SF)	496.12	23.16	22.26	45.42	16.98	15.67	32.65

[14] Source*: Trip Generation, 9th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2012)].

TABLE 6-3

CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[15]

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
	City of Chino Hills							
1.	Country Club Villas (46 DU)	267	3	17	20	16	8	24
2.	Lago Los Serranos (95 DU)	552	7	35	42	33	16	49
3.	Vila Borba							
	Single Family Det. (351 DU)	3,342	67	197	264	221	130	351
	Condominium (162 DU)	941	12	59	71	56	28	84
	Subtotal	4,283	79	256	335	277	158	435
4.	Capriana at Chino Hills (286 DU)	1,902	29	117	146	114	63	177
5.	Vista Bella Townhomes (65 DU)	378	5	24	29	23	11	34
6.	Heritage Professional Center							
	Hotel (120 Rooms)	980	37	26	63	37	35	72
	Hospital (60,000 SF)	793	36	21	57	21	35	56
	Medical Office (86,943 SF)	3,141	164	44	208	87	223	310
	Retail (35,300 SF)	1,507	21	13	34	63	68	131
	Restaurant (7,200 SF)	915	43	35	78	43	28	71
	Subtotal	7,336	301	139	440	251	389	640
	Less Pass-by Trips	-905	0	0	0	-39	-37	-76
	Net Trip Generation	*6,431*	*301*	*139*	*440*	*212*	*352*	*564*
7.	The Commons (142,982 SF)	6,105	85	52	137	254	276	530
	Less Pass-by Trips	-2,076	0	0	0	-86	-94	-180
	Net Trip Generation	4,029	85	52	137	168	182	350
8.	The Santa Barbara							
	Apartment (324 DU)	2,155	32	133	165	130	71	201
	Retail (10,000 SF)	427	6	4	10	18	19	37
	Restaurant (4,500 SF)	572	27	22	49	27	18	45
	Subtotal	3,154	65	159	224	175	108	283
	Less Internal Capture	-200	0	0	0	-8	-8	-16
	Less Pass-by Trips	-352	0	0	0	-16	-13	-29
	Net Trip Generation	*2,602*	*65*	*159*	*224*	*151*	*87*	*238*
9.	Avalon Chino Hills							
	Apartment (331 DU)	2,201	34	135	169	133	72	205
	Park (14.92 Acres)	75	5	5	10	4	3	7
	Subtotal	2,276	39	140	179	137	75	212
10.	Indus Light Industrial Development	887	124	16	140	14	113	127
11.	The Rincon (formerly, The Golden Triangle)							
	Business Hotel (116 Room)	916	40	27	67	43	29	72
	Medical Office (60,000 SF)	2,168	113	30	143	60	154	214

[15] Internal Capture and/or Pass-by trip reduction is based on the methodology and information contained in the *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012), *Volume 1: User's Guide and Handbook.*

TABLE 6-3 (CONTINUED)
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[16]

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
	Fast-Food with Drive-Thru (3,500 SF)	1,736	81	78	159	59	55	114
	High Turnover Restaurant (13,125 SF)	1,669	78	64	142	77	52	129
	Shopping Center (20,475 SF)	874	12	8	20	36	40	76
	Subtotal	7,363	324	207	531	275	330	605
	Less Internal Capture	-1,112	0	0	0	-40	-42	-82
	Less Pass-by Trips	-372	-49	-45	-94	-66	-54	-120
	Net Trip Generation	*5,879*	*275*	*162*	*437*	*169*	*234*	*403*
12.	Fairfield Ranch Commons							
	Apartment (346 DU)	2,301	35	141	176	138	77	215
	Building 1 – Warehousing (120,516 SF)	545	35	10	45	11	41	52
	Building 2 – Warehousing (106,005 SF)	478	31	10	41	9	36	45
	Building 3 – Warehousing (100,120 SF)	452	30	8	38	9	34	43
	Subtotal	3,776	131	169	300	167	188	355
13.	TTM 17653 (27 DU Single Family)	257	5	15	20	17	10	27
14.	TTM 17654 (12 DU Single Family)	114	2	7	9	8	4	12
15.	Crossroads Entertainment Center (14,500 SF Fast-Food with Drive-Thru)	7,194	336	323	659	246	227	473
	Less Pass-by Trips	-719	-165	-158	-323	-123	-114	-237
	Net Trip Generation	*6,475*	*171*	*165*	*336*	*123*	*113*	*236*
16.	Woodbridge Pacific Group (76 DU Single Family)	724	14	43	57	48	28	76
17.	Stonefield Development (28 DU Single Family)	267	5	16	21	18	10	28
18.	Meaglia (11 DU Single Family)	105	2	6	8	7	4	11
19.	Crystal View Townhomes (29 DU Townhomes)	168	2	11	13	10	5	15
20.	Higgins Ranch (aka Trumark Mixed Use)	1,975	69	95	164	89	55	144
21.	Morningfield Estates (7 DU) and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum (71 Stu.)	264	36	33	69	24	26	50
22.	Coptic Orthodox Church (17,710 SF)	374	15	8	23	14	15	29
23.	Founders Village (76 DU)	724	14	43	57	48	28	76
	City of Chino							
24.	PL 08-0334 (421,031 SF Industrial/Warehouse)	1,901	123	34	157	38	144	182
25.	PL 10-0726 (13,672 SF Office)	151	19	2	21	3	17	20
26.	PL 11-0047 (135 DU Apartments)	898	14	55	69	54	30	84

[16] Internal Capture and/or Pass-by trip reduction is based on the methodology and information contained in the *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012), *Volume 1: User's Guide and Handbook.*

TABLE 6-3 (CONTINUED)
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
27.	TM 17898 (77 DU Single Family)	733	15	43	58	49	28	77
28.	TM 18848 (101 DU Condominiums)	587	7	37	44	35	18	53
29.	TM 17891 (75 DU Single Family)	714	14	42	56	47	28	75
30.	TM 18873 (140 DU Condominiums)	813	10	52	62	49	24	73
31.	TM 16838-2 (67 DU Single Family)	638	13	37	50	42	25	67
32.	TM 17899 (66 DU Single Family)	628	13	37	50	42	24	66
33.	Hillwood (409,000 SF Industrial)	2,851	331	45	376	48	349	397
34.	PL 13-0435 (41 DU Single Family)	390	8	23	31	26	15	41
35.	TM 17890 (94 DU Single Family)	895	18	53	71	59	35	94
36.	TM 18891 (118 DU Single Family)	1,123	22	67	89	74	44	118
37.	TM 17892 (63 DU Single Family)	600	12	35	47	40	23	63
38.	TM 17893 (34 DU Single Family)	324	7	19	26	21	13	34
39.	TM 17894 (39 DU Single Family)	371	7	22	29	25	14	39
40.	TM 17895 (19 DU Single Family)	181	4	10	14	12	7	19
41.	TM 17896 (67 DU Single Family)	638	13	37	50	42	25	67
42.	TM 17897 (93 DU Single Family)	885	18	52	70	59	34	93
43.	PL13-0601 (209 DU Single Family)	1,990	39	118	157	132	77	209
44.	TM 18880 (33 DU Single Family)	314	6	19	25	21	12	33
45.	SEC Philadelphia/Ramona	1,153	16	10	26	48	52	100
	Less Pass-by Trips	-115	-2	-1	-3	-16	-18	-34
	Net Trip Generation	*1,038*	*14*	*9*	*23*	*32*	*34*	*66*
46.	Chino Central Residential (PL13-0618)	895	18	53	71	59	35	94
47.	Central and Francis Residential	1,076	21	64	85	71	42	113
48.	Pipeline and Norton Residential	428	9	25	34	28	17	45
49.	Brewart Residential	1,209	24	71	95	80	47	127
50.	Fern and Riverside Residential	895	18	53	71	59	35	94
51.	Chino Riverside Residential	562	11	33	44	37	22	59
52.	Borba Chino Residential	800	16	47	63	53	31	84
53.	PL 11-0299 (50,000 SF Industrial/Warehouse)	442	62	8	70	8	56	64
54.	PL 10-0544 (300,300 SF Industrial/Warehouse)	1,356	89	24	113	27	102	129

TABLE 6-3 (CONTINUED)
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[17]

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
55.	Chino West	2,667	134	52	186	59	142	201
56.	Majestic Chino Gateway	13,117	475	262	737	287	494	781
57.	Chino South Industrial	10,349	191	128	319	95	236	331
58.	Ivy at College Park 2	1,292	52	80	132	52	44	96
59.	Kaiser Permanente Medical Office Building	3,975	208	55	263	110	283	393
60.	Honda Call Center Expansion – Phase 2	313	43	5	48	7	40	47
61.	Tom's Restaurant	1,339	35	34	69	25	24	49
62.	Tentative Tract No. 18903	419	8	25	33	28	16	44
63.	Kimball Business Park	6,624	534	112	646	148	509	657
	City of Brea							
64.	Brea Downtown Collection[18]	--	--	--	--	--	--	--
65.	Tonner Hills/Blackstone (795 DU Single Family)	7,568	149	447	596	501	294	795
66.	La Floresta[19]							
	Medium Density Residential (398 DU)	3,224	52	199	251	211	111	322
	High Density Residential (540 DU)	3,580	43	232	275	227	108	335
	Mixed Use Residential (150 DU)	995	12	65	77	63	30	93
	Mixed Use Commercial (156,800 SF)	5,137	174	45	219	220	298	518
	Subtotal	12,936	281	541	822	721	547	1,268
	Less Existing Trips	-2,049	-223	-47	-270	-35	-253	-288
	Net Trip Generation	10,887	58	494	552	686	294	980
67.	Canyon Crest (165 DU Single Family)	1,571	31	93	124	104	61	165
68.	Pacific Highland (20 DU Single Family)	190	4	11	15	13	7	20
69.	Trumark (57 DU Single Family)	543	11	32	43	36	21	57
70.	Central Park Village							
	Single Family (88 DU)	511	7	32	39	31	15	46
	Apartment (369)	2,454	38	150	188	149	80	229
	Medical Office (35,000 SF)	1,265	66	18	84	35	90	125
	Shopping Center (31,000 SF)	1,324	19	11	30	55	60	115

[17] Internal Capture and/or Pass-by trip reduction is based on the methodology and information contained in the *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012), *Volume 1: User's Guide and Handbook.*

[18] Project already complete.

[19] Source: *La Floresta Traffic Studies, prepared by Austin-Foust Associates, Inc., dated November 2006.*

TABLE 6-3 (CONTINUED)
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[20]

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
	Subtotal	5,554	130	211	341	270	245	515
	Less Pass-by Trips	-450	0	0	0	-19	-20	-39
	Net Trip Generation	5,104	130	211	341	251	225	476
71.	Aera Energy[21]	--	--	--	--	--	--	--
Total Cumulative Projects Net Trip Generation Forecast		**136,993**	**4,536**	**4,995**	**9,531**	**5,661**	**5,882**	**11,543**

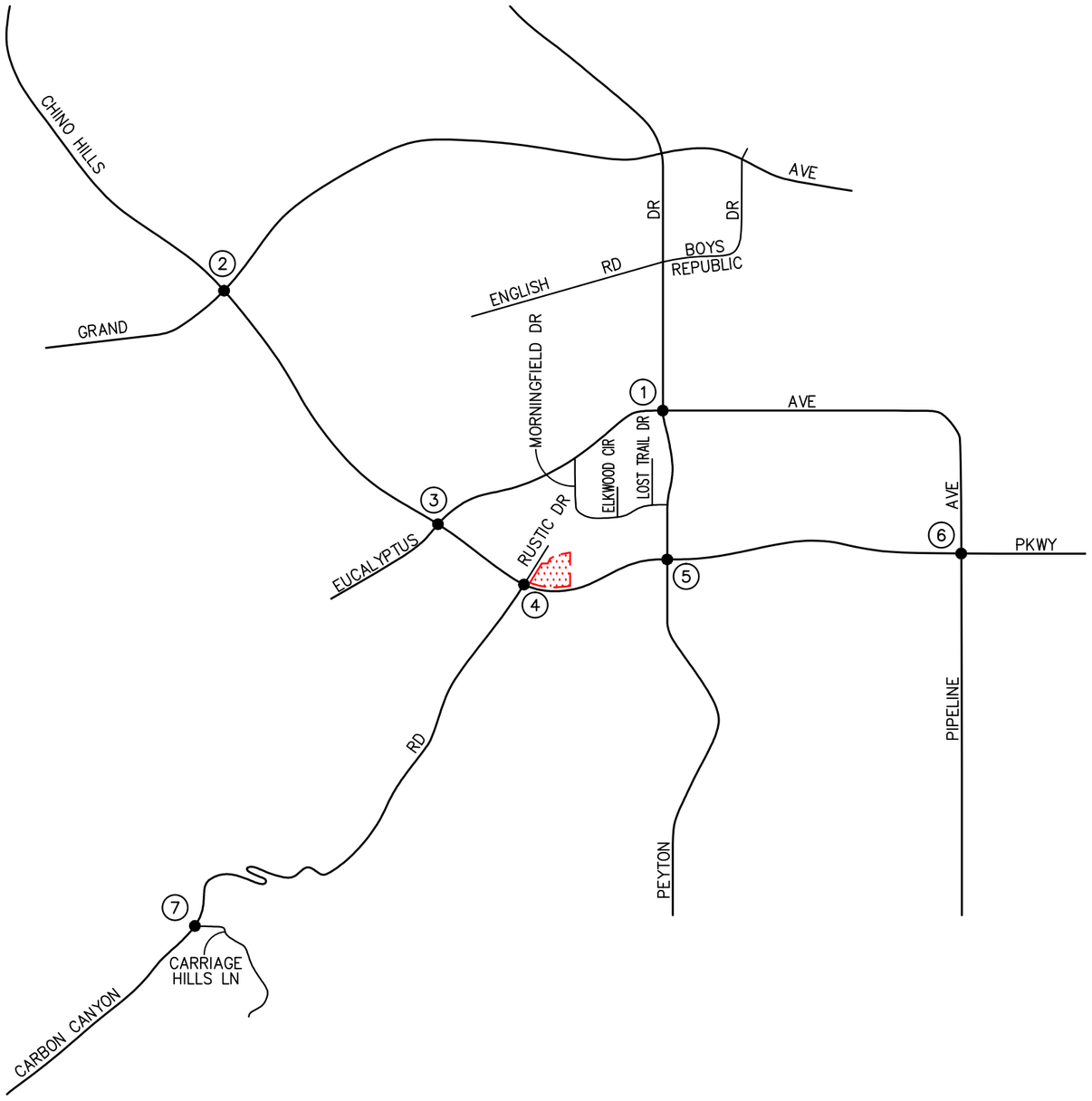
[20] Internal Capture and/or Pass-by trip reduction is based on the methodology and information contained in the *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012), *Volume 1: User's Guide and Handbook.*

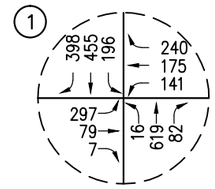
[21] Currently listed as "inactive" with the County of Los Angeles.

6.4 Year 2025 Traffic Volumes

Figures 6-4 and ***6-5*** present the Year 2025 AM and PM peak hour cumulative traffic volumes at the seven (7) key study intersections, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic. *Figure 6-5* also illustrates the cumulative daily traffic volumes on key roadway segments in the Year 2025.

Figures 6-6 and ***6-7*** illustrate the Year 2025 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by the proposed Project, respectively. *Figure 6-7* also illustrates the Year 2025 cumulative plus project daily traffic volumes on key roadway segments.





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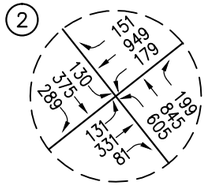

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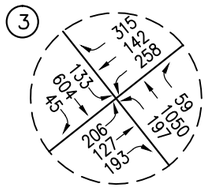
GRAND AVE



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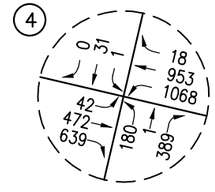

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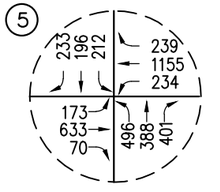

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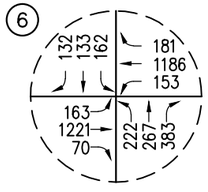

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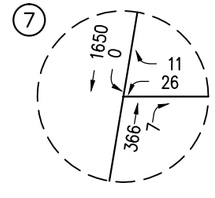

CARBON CANYON RD @
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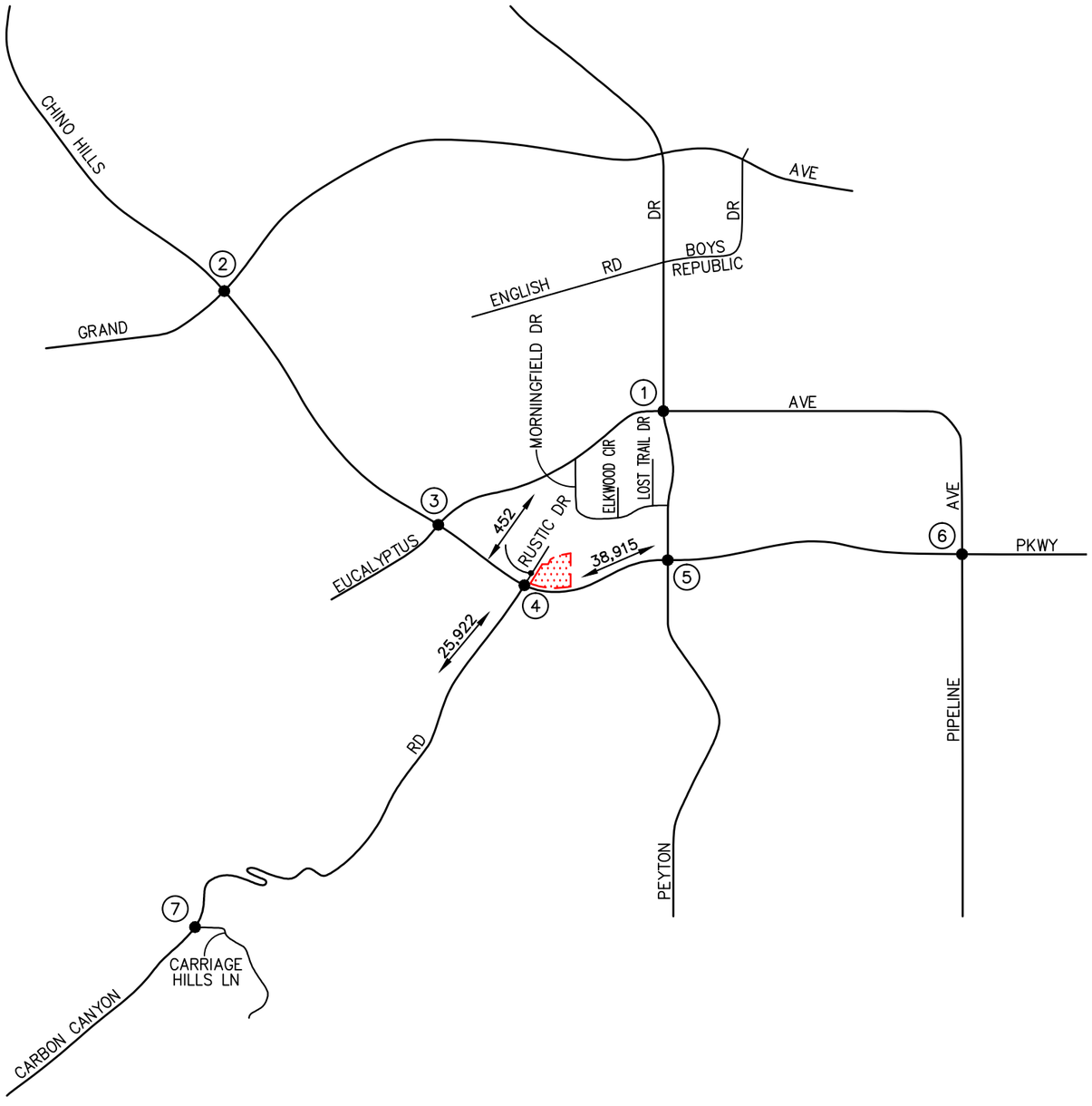
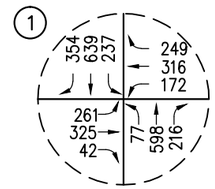
N NO SCALE

KEY
= PROJECT SITE
(#) = STUDY INTERSECTION

FIGURE 6-4

YEAR 2025 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS





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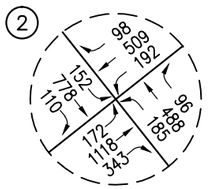
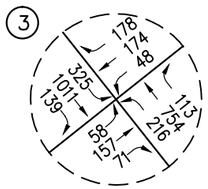


CHINO HILLS PKWY @
GRAND AVE



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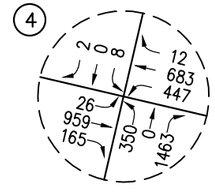

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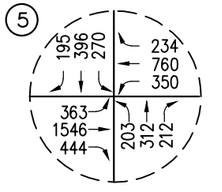

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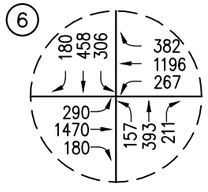

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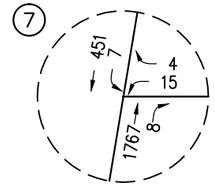

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KEY

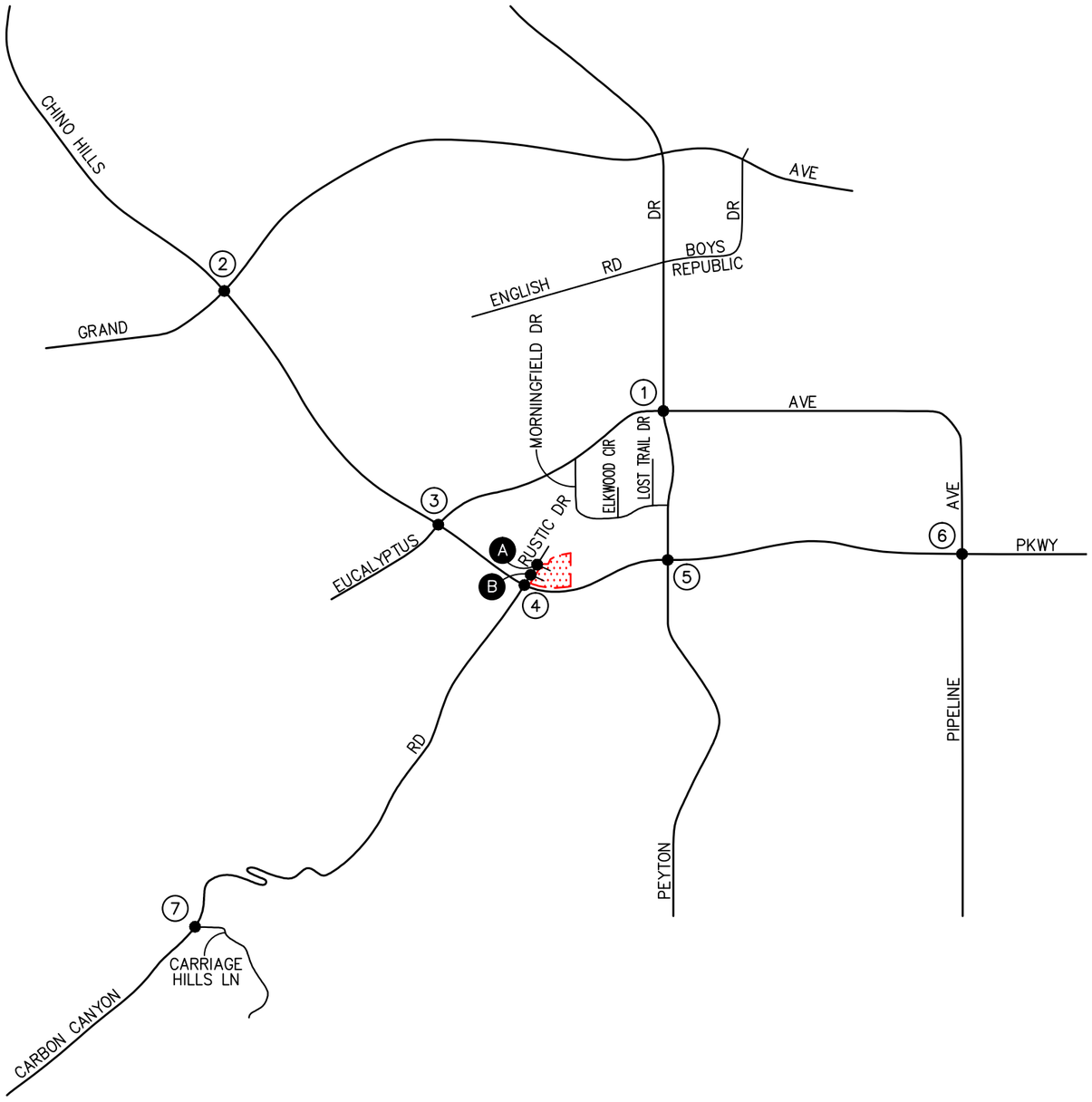
(#) = STUDY INTERSECTION

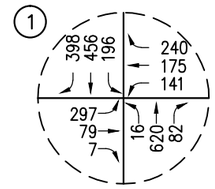
XX,XXX = DAILY TRAFFIC VOLUMES

= PROJECT SITE

FIGURE 6-5

YEAR 2025 CUMULATIVE PM PEAK HOUR
AND DAILY TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS





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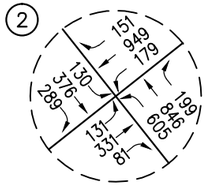

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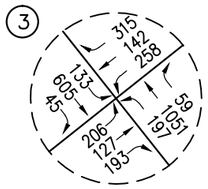

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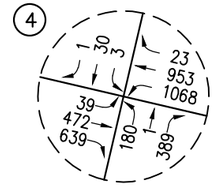

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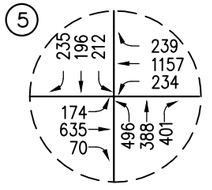

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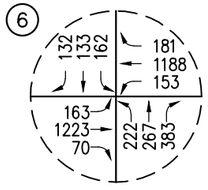

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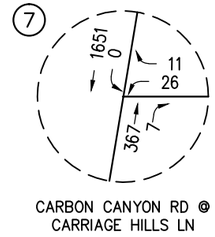

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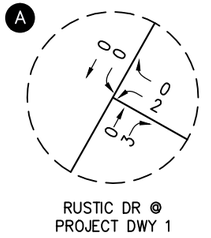

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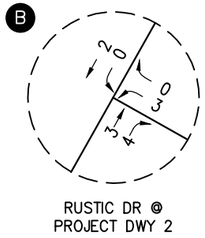

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PROJECT DWY 2

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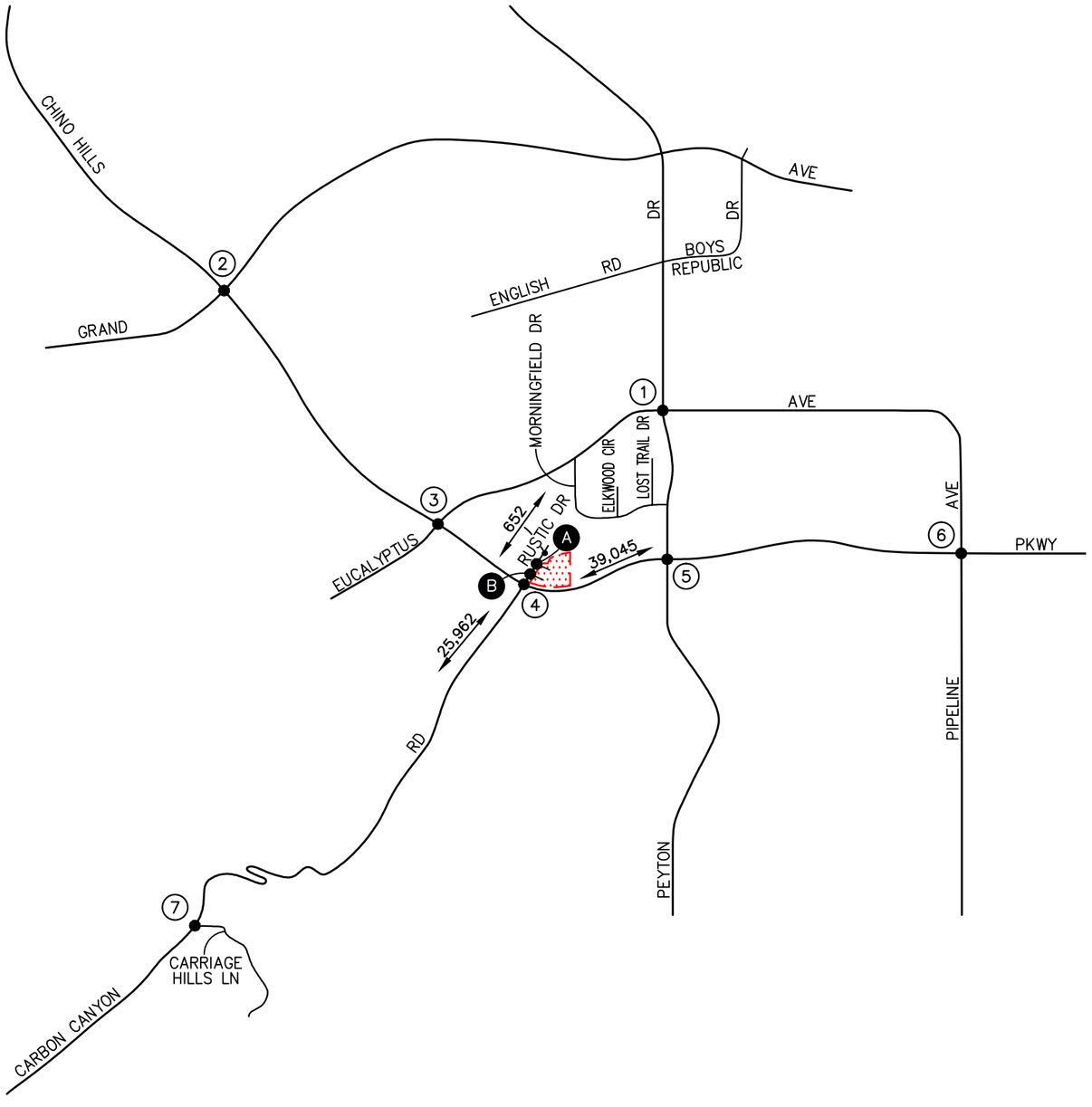
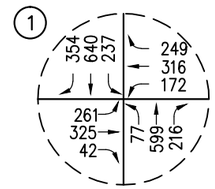
(#) = STUDY INTERSECTION

FIGURE 6-6

YEAR 2025 CUMULATIVE PLUS PROJECT
AM PEAK HOUR TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS





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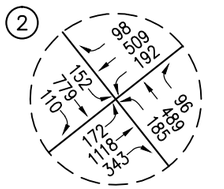

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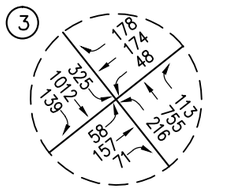

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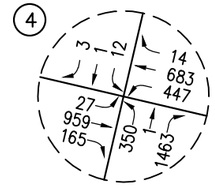

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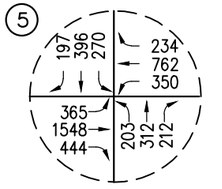

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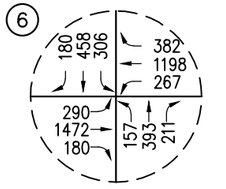

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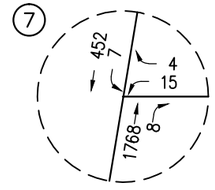
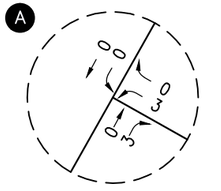
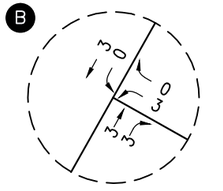


CARBON CANYON RD @
CARRIAGE HILLS LN



RUSTIC DR @
PROJECT DWY 1



RUSTIC DR @
PROJECT DWY 2

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LINSCOTT LAW & GREENSPAN
engineers

N
NO SCALE

KEY

(#) = STUDY INTERSECTION

XX,XXX = DAILY TRAFFIC VOLUMES

= PROJECT SITE

FIGURE 6-7

YEAR 2025 CUMULATIVE PLUS PROJECT
PM PEAK HOUR AND DAILY TRAFFIC VOLUMES
BUDDHIST TEMPLE, CHINO HILLS

7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The relative impact of the added peak hour Project traffic volumes generated by the Project have been evaluated based on the analysis of future operating conditions at seven (7) key study intersections. Operating conditions at the key study intersections were evaluated during the AM and PM peak hours for existing traffic conditions and future near-term (2025) traffic conditions without, then with the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using traffic impact criteria identified earlier and again summarized below.

7.1 Traffic Impact Analysis Scenarios

The following scenarios are those for which volume/capacity calculations have been performed at the seven (7) key intersections for near-term (Year 2025) conditions:

(a) Existing traffic;
(b) Existing plus Project conditions;
(c) Traffic in (b) plus mitigation (as required),
(d) Existing traffic plus ambient growth to the Year 2025 plus cumulative project traffic;
(e) Traffic in (d) plus Project conditions;
(f) Traffic in (e) plus Project conditions plus mitigation (as required),

7.2 Definition of Deficiency and Significance Criteria

According to the City of Chino Hills guidelines, a significant traffic impacts occurs when the intersections or roadway projected to operate at LOS D or better without the Project would exceed LOS D with the Project. A significant traffic impact is also considered to occur if the Project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the Project.

Thus, for intersections currently operating at LOS E or F during either the AM and/or PM peak hours under existing conditions, improvements have been identified to mitigate the impacts of the Project to an intersection LOS that is equal to better than pre-Project conditions.

Caltrans District 8 has established that LOS D is the operating standard for all Caltrans facilities. Caltrans has determined that all state owned facilities that operate below LOS D should be identified and improved to an acceptable LOS. The *Caltrans Traffic Impact Study Guidelines dated December 2002* does state that if an existing state owned facility operates at less than LOS D, the existing service level should be maintained. Since the City's criteria is similar and the Project is located in the City of Chino Hills, the City's criteria was used throughout this report.

The CMP definition of deficiency is based on maintaining a level of service standard of LOS "E" or better, except where an existing LOS "F" condition is identified in the CMP document.

In the event that an intersection is operating at or is forecast to operate at a deficient LOS, the City's guidelines as well as the CMP guidelines have defined a series of steps to be completed to determine the Project's contribution to the deficiency of intersections. The steps are as follows:

1. Determine the mitigation measures necessary to achieve an acceptable service level.
2. Calculate the Project's share in the future traffic volume projections for the peak hours.
3. Estimate the cost to implement recommended mitigation measures.
4. Calculate the Project's fair-share contribution to offset the Project's traffic impacts.

8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

8.1 Existing Plus Project Traffic Analysis

Table 8-1 summarizes the peak hour level of service results at the seven (7) key study intersections for Existing traffic conditions. The first column (1) of HCM//LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists existing plus project traffic conditions. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column (4) indicates the anticipated LOS with planned and/or recommended improvements, if any.

8.1.1 *Existing Plus Project Traffic Conditions*

Review of columns 2 and 3 of *Table 8-1* indicates that the traffic associated with the proposed Project will not directly impact any of the seven (7) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report.

Although the intersections of Peyton Drive at Chino Hills Parkway and Carbon Canyon Road at Carriage Hills Lane are forecast to continue to operate at an unacceptable LOS E under Existing Plus Project traffic conditions, the proposed Project adds less than 0.01 to the V/C ratio and therefore the Project's incremental V/C ratio increase is considered insignificant. Further yet, the Project's impact is considered less than significant since the project contributes significantly less than 50 peak hour trips at these key locations.

The remaining key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of Project traffic.

Appendix C presents the Existing Plus Project HCM/LOS calculations for the key study intersections for the AM peak hour and PM peak hour.

TABLE 8-1

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions			(2) Existing Plus Project Traffic Conditions			(3) Significant Impact			(4) Existing Plus Project With Improvements		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay Increase	V/C Increase	Yes/ No	Delay	V/C	LOS
1. Peyton Drive at Eucalyptus Avenue	AM	29.1 s/v	0.453	C	29.1 s/v	0.453	C	0.0 s/v	0.000	No	--	--	--
	PM	31.5 s/v	0.490	C	31.5 s/v	0.490	C	0.0 s/v	0.000	No	--	--	--
2. Chino Hills Parkway at Grand Avenue	AM	42.4 s/v	0.740	D	42.4 s/v	0.740	D	0.0 s/v	0.000	No	--	--	--
	PM	36.5 s/v	0.706	D	36.5 s/v	0.707	D	0.0 s/v	0.001	No	--	--	--
3. Chino Hills Parkway at Eucalyptus Avenue	AM	44.9 s/v	0.885	D	44.9 s/v	0.886	D	0.0 s/v	0.001	No	--	--	--
	PM	30.8 s/v	0.664	C	30.8 s/v	0.664	C	0.0 s/v	0.000	No	--	--	--
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway	AM	24.7 s/v	0.794	C	24.7 s/v	0.794	C	0.0 s/v	0.000	No	--	--	--
	PM	28.2 s/v	0.745	C	28.2 s/v	0.745	C	0.0 s/v	0.000	No	--	--	--
5. Peyton Drive at Chino Hills Parkway	AM	38.5 s/v	0.674	D	38.5 s/v	0.675	D	0.0 s/v	0.001	No	--	--	--
	PM	**72.1 s/v**	**0.920**	**E**	**72.3 s/v**	**0.921**	**E**	0.2 s/v	0.001	No	--	--	--
6. Pipeline Avenue at Chino Hills Parkway	AM	42.2 s/v	0.733	D	42.1 s/v	0.734	D	0.0[22] s/v	0.001	No	--	--	--
	PM	49.8 s/v	0.791	D	49.8 s/v	0.792	D	0.0 s/v	0.001	No	--	--	--
7. Carbon Canyon Road at Carriage Hills Lane	AM	**39.5 s/v**	**0.218**	**E**	**39.7 s/v**	**0.219**	**E**	0.2 s/v	0.001	No	--	--	--
	PM	**48.8 s/v**	**0.108**	**E**	**49.0 s/v**	**0.108**	**E**	0.2 s/v	0.000	No	--	--	--

Note:

- **Bold** LOS values indicate adverse service levels based on City LOS standards; s/v = seconds per vehicle (delay).

[22] Theoretical negative increase, which is possible with HCM calculations, are denoted as an increase of 0.0 s/v.

8.2 Year 2025 Cumulative Traffic Analysis

Table 8-2 summarizes the weekday AM peak hour and PM peak Level of Service results at the seven (7) key study intersections for the Year 2025. The structure of this table is similar to that of *Table 8-1*, however, the second column (2) lists projected cumulative traffic conditions (existing plus ambient plus cumulative projects traffic) based on existing intersection geometry, while the third column (3) column presents forecast Year 2025 cumulative conditions with the addition of Project traffic. The fourth column (4) of *Table 8-2* indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and impact criteria identified earlier. The fifth column (5) indicates the anticipated LOS with planned and/or recommended improvements, if any.

8.2.1 *Year 2025 Cumulative Traffic Conditions*

Review of Column 2 of *Table 8-2* indicates that five (5) of the seven (7) key study intersections are forecast to operate adversely when compared to the LOS standards and significant impact criteria specified in this report. The intersections forecast to operate at an adverse level of service in the Year 2025 Cumulative Traffic Conditions during the AM peak hour and/or PM peak hour are as follows:

		AM Peak Hour			PM Peak Hour		
Key Intersection		Delay	V/C	LOS	Delay	V/C	LOS
2.	Chino Hills Parkway at Grand Avenue	57.3 s/v	0.943	E	--	--	--
3.	Chino Hills Parkway at Eucalyptus Avenue	56.9 s/v	0.941	E	--	--	--
5.	Peyton Drive at Chino Hills Parkway	--	--	--	138.3 s/v	1.185	F
6.	Pipeline Avenue at Chino Hills Parkway	--	--	--	90.7 s/v	1.045	F
7.	Carbon Canyon Road at Carriage Hills Lane	93.4 s/v	0.492	F	144.7 s/v	0.415	F

The remaining two (2) key study intersections are forecast to continue to operate at LOS D or better during the weekday AM and PM peak hours with the addition of ambient traffic growth and cumulative project traffic.

Appendix C presents the Year 2025 HCM/LOS calculations for the key study intersections for the AM peak hour and PM peak hour.

8.2.2 *Year 2025 Cumulative Plus Project Traffic Conditions*

Review of Column 3 of *Table 8-2* indicates that five (5) of the seven (7) key study intersections are forecast to operate adversely when compared to the LOS standards and significant impact criteria specified in this report. The intersections forecast to operate at an adverse level of service in the Year 2025 Cumulative Plus Project Traffic Conditions during the AM peak hour and/or PM peak hour are as follows:

		AM Peak Hour			PM Peak Hour		
Key Intersection		Delay	V/C	LOS	Delay	V/C	LOS
2.	Chino Hills Parkway at Grand Avenue	57.3 s/v	0.943	E	--	--	--
3.	Chino Hills Parkway at Eucalyptus Avenue	57.0 s/v	0.941	E	--	--	--
5.	Peyton Drive at Chino Hills Parkway	--	--	--	138.5 s/v	1.186	F
6.	Pipeline Avenue at Chino Hills Parkway	--	--	--	91.1 s/v	1.046	F
7.	Carbon Canyon Road at Carriage Hills Lane	93.8 s/v	0.493	F	145.3 s/v	0.417	F

Review of Column 4 of *Table 8-2* indicates that traffic associated with the proposed Project will not directly impact any of the seven (7) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report.

Although five (5) of the seven (7) key study intersections are forecast to operate at an unacceptable LOS E or F under Year 2025 Plus Project traffic conditions, the proposed Project adds less than 0.01 to the V/C ratio and therefore the Project's incremental V/C ratio increase at the five intersections forecast to operate at LOS E or F is considered insignificant. Further yet, the Project's impact is considered less than significant since the project contributes less than 50 peak hour trips at the five intersections forecast to operate at LOS E or F.

The remaining key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of Project traffic.

Appendix C presents the Year 2025 Plus Project HCM/LOS calculations for the key study intersections for the AM peak hour and PM peak hour.

TABLE 8-2

YEAR 2025 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Time Period	(1) Existing Traffic Conditions			(2) Year 2025 Cumulative Traffic Conditions			(3) Year 2025 Cumulative Plus Project Traffic Conditions			(4) Significant Impact			(5) Year 2025 Cumulative Plus Project With Improvements		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay Increase	V/C Increase	Yes/ No	Delay	V/C	LOS
1. Peyton Drive at Eucalyptus Avenue	AM	29.1 s/v	0.453	C	27.8 s/v	0.443	C	27.8 s/v	0.443	C	0.0 s/v	0.000	No	--	--	--
	PM	31.5 s/v	0.490	C	34.6 s/v	0.537	C	34.6 s/v	0.537	C	0.0 s/v	0.000	No	--	--	--
2. Chino Hills Parkway at Grand Avenue	AM	42.4 s/v	0.740	D	**57.3 s/v**	**0.943**	**E**	**57.3 s/v**	**0.943**	**E**	0.0 s/v	0.000	No	--	--	--
	PM	36.5 s/v	0.706	D	44.8 s/v	0.897	D	44.9 s/v	0.897	D	0.1 s/v	0.000	No	--	--	--
3. Chino Hills Parkway at Eucalyptus Avenue	AM	44.9 s/v	0.885	D	**56.9 s/v**	**0.941**	**E**	**57.0 s/v**	**0.941**	**E**	0.1 s/v	0.000	No	--	--	--
	PM	30.8 s/v	0.664	C	37.9 s/v	0.835	D	37.9 s/v	0.836	D	0.0 s/v	0.001	No	--	--	--
4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway	AM	24.7 s/v	0.794	C	36.6 s/v	0.932	D	37.3 s/v	0.932	D	0.7 s/v	0.000	No	--	--	--
	PM	28.2 s/v	0.745	C	47.0 s/v	0.950	D	48.0 s/v	0.951	D	1.0 s/v	0.001	No	--	--	--
5. Peyton Drive at Chino Hills Parkway	AM	38.5 s/v	0.674	D	45.4 s/v	0.877	D	45.4 s/v	0.878	D	0.0 s/v	0.001	No	--	--	--
	PM	**72.1 s/v**	**0.920**	**E**	**138.3 s/v**	**1.185**	**F**	**138.5 s/v**	**1.186**	**F**	0.2 s/v	0.001	No	--	--	--
6. Pipeline Avenue at Chino Hills Parkway	AM	42.2 s/v	0.733	D	45.7 s/v	0.891	D	45.8 s/v	0.892	D	0.1 s/v	0.001	No	--	--	--
	PM	49.8 s/v	0.791	D	**90.7 s/v**	**1.045**	**F**	**91.1 s/v**	**1.046**	**F**	0.4 s/v	0.001	No	--	--	--
7. Carbon Canyon Road at Carriage Hills Lane	AM	**39.5 s/v**	**0.218**	**E**	**93.4 s/v**	**0.492**	**F**	**93.8 s/v**	**0.493**	**F**	0.4 s/v	0.001	No	--	--	--
	PM	**48.8 s/v**	**0.108**	**E**	**144.7 s/v**	**0.415**	**F**	**145.3 s/v**	**0.417**	**F**	0.6 s/v	0.002	No	--	--	--

Note:

- **Bold** LOS values indicate adverse service levels based on City LOS standards; s/v = seconds per vehicle (delay).

9.0 TRAFFIC SIGNAL WARRANT ANALYSIS

The level of service analysis at the key unsignalized intersections is supplemented with an assessment of the need for signalization of the intersection. This assessment is made on the basis of signal warrant criteria adopted by Caltrans. For this study, the need for signalization is assessed on the basis of the peak-hour traffic signal warrant, Warrant #3, described in the *California Manual on Uniform Traffic Control Devices (MUTCD).*

Warrant #3 has two parts:

1. *Part A* evaluates peak hour vehicle delay for traffic on the minor street approach with the highest delay, and
2. *Part B* evaluates peak-hour traffic volumes on the major and minor streets.

This method provides an indication of whether peak-hour traffic conditions or peak-hour traffic volume levels are, or would be, sufficient to justify installation of a traffic signal. Other traffic signal warrants are available, however, they cannot be checked under future conditions (Background without and with Project) because they rely on data for which forecasts are not available (such as accidents, pedestrian volume, and four- or eight-hour vehicle volumes).

The decision to install a traffic signal should not be based purely on the warrants alone. Instead, the installation of a signal should be considered and further analysis performed when one or more of the warrants are met. Additionally, engineering judgment is exercised on a case-by-case basis to evaluate the effect a traffic signal will have on certain types of accidents and traffic conditions at the subject intersection as well as at adjacent intersections.

9.1 Existing Plus Project Traffic Signal Warrant Analysis

The results of the peak-hour traffic signal warrant analysis for Existing Plus Project Traffic Conditions is summarized in column (1) of ***Table 9-1***. The results indicate that the unsignalized intersection of Carbon Canyon Road at Carriage Hills Lane does not meet signal warrant.

The peak-hour signal warrant worksheets for Existing Plus Project Traffic Conditions are contained in ***Appendix D***.

9.2 Year 2025 Plus Project Traffic Signal Warrant Analysis

The results of the peak-hour traffic signal warrant analysis for Year 2025 Plus Project Traffic Conditions is summarized in column (2) of *Table 9-1*. The results indicate that the unsignalized intersection of Carbon Canyon Road at Carriage Hills Lane does not meet signal warrant.

The peak-hour signal warrant worksheets for Year 2025 Plus Project Traffic Conditions are contained in *Appendix D.*

TABLE 9-1

INTERSECTION TRAFFIC SIGNAL WARRANT ANALYSIS SUMMARY[23]

Key Intersection	Time Period	(1) Existing Plus Project Traffic Conditions		(2) Year 2025 Cumulative Plus Project Traffic Conditions	
		Part A of Warrant 3 Satisfied?	Part B of Warrant 3 Satisfied?	Part A of Warrant 3 Satisfied?	Part B of Warrant 3 Satisfied?
1. Carbon Canyon Road at Carriage Hills Lane	AM	No	No	No	No
	PM	No	No	No	No

Notes:

- Signal warrant checks based on Warrant 3, Part A - Peak-Hour Delay Warrant and Part B - Peak-Hour Volume Warrant contained in the California MUTCD.

[23] *Appendix D* contains the traffic signal warrant analysis worksheets for the key unsignalized study intersections.

10.0 AREA-WIDE TRAFFIC IMPROVEMENTS

For the intersections where projected traffic volumes are expected to result in poor operating conditions, this report recommends (identifies) improvements, which change the intersection geometry to increase capacity. These capacity improvements usually involve roadway widening and/or restriping to reconfigure or add lanes to various approaches of a key intersection. The proposed improvements are expected to offset the impact of future traffic and improve Levels of Service to an acceptable range and/or to pre-project conditions.

Transportation improvements throughout San Bernardino County are funded through a combination of direct Project mitigation, fair share contributions or development impact fee programs. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

10.1 Recommended Improvements

10.1.1 *Existing Plus Project Recommended Improvements*

The results of the intersection capacity analyses summarized in *Table 8-1* indicate that the proposed Project is not expected to have a significant impact at any of the key study intersections. As there are no significant impacts, no traffic mitigation measures are required or recommended for the study intersections.

10.1.2 *Year 2025 Plus Project Recommended Improvements*

The results of the intersection capacity analyses summarized in *Table 8-2* indicate that the proposed Project is not expected to have a significant impact at any of the key study intersections. As there are no significant impacts, no traffic mitigation measures are required or recommended for the study intersections.

11.0 SITE ACCESS EVALUATION

11.1 Project Access Level of Service Analysis

Access to the proposed Project will be provided via two (2) full access driveways located on Rustic Drive. ***Table 11-1*** summarizes the intersection operations for the Project Driveways for Existing Plus Project and Year 2025 Plus Project traffic conditions. Review of *Table 11-1* show that both the project driveways are forecast to operate at an acceptable LOS during the weekday AM peak hour and PM peak hour under Existing Plus Project and Year 2025 Plus Project traffic conditions. As such, motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

Appendix E presents the HCM/LOS calculations for the project driveway intersections for the AM peak hour and PM peak hour.

11.2 Sight Distance Evaluation

This assessment is based on the intersection sight distance requirements of the State of California Department of Transportation (Caltrans) as published in the State's *Highway Design Manual (HDM),* and focuses on the sight distance requirements for the two (2) project driveways associated with the proposed Project, located on Rustic Drive. The Sight Distance Evaluation prepared for the project driveways was based on the criteria and procedures set forth by the California Department of Transportation (Caltrans) in the State's Highway Design Manual for "Private Road Intersections".

The Highway Design Manual (HDM), in Section 405.1(2)(c), page 400-22, indicates that for Private Road Intersections, "The minimum corner sight distance shall be equal to the stopping sight distance as given in Table 201.1...", where stopping sight distance is defined as the distance required by the driver of a vehicle, traveling at a given speed, to bring his vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eyes, which are assumed to be 3.5 feet above the pavement surface, to an object 0.5-foot high on the roadway. The speed used in determining stopping sight distance is defined as the "critical speed" or 85th percentile speed which is the speed at which 85% of the vehicles are traveling at or less. The critical speed is the single most important factor in determining stopping sight distance. Table 201.1 in the HDM is used in determining stopping sight distance based on the critical speed of vehicles on the affected roadway. For this analysis, a design speed of 25 miles per hour (mph) for Rustic Drive was utilized.

Using Table 201.1, titled *Sight Distance Standards,* in the State's Highway Design Manual for stopping, a minimum stopping sight distance of 150 feet applies based on the critical speed of 25 mph. To provide a conservative assessment, the "corner sight distance" criteria in Section 405.1(2)(b) of the HDM was also utilized. Based on critical speed of 25 mph, a corner sight distance of 275 feet was assessed at the project driveways along Rustic Drive.

TABLE 11-1

PROJECT DRIVEWAY PEAK HOUR INTERSECTION LEVEL OF SERVICE SUMMARY

Project Driveway	Time Period	Intersection Control	(1) Existing Plus Project Traffic Conditions			(2) Year 2025 Cumulative Plus Project Traffic Conditions		
			Delay	V/C	LOS	Delay	V/C	LOS
A. Rustic Drive at Project Driveway 1 (N)	AM	One – Way Stop	8.5 s/v	0.002	A	8.5 s/v	0.002	A
	PM		8.5 s/v	0.003	A	8.5 s/v	0.003	A
B. Rustic Drive at Project Driveway 2 (S)	AM	One – Way Stop	8.6 s/v	0.003	A	8.6 s/v	0.003	A
	PM		8.6 s/v	0.003	A	8.6 s/v	0.003	A

Notes:

- LOS = Level of Service, please refer to *Table 3-2* for the LOS definitions.
- s/v = seconds per vehicle (delay).

Figure 11-1 illustrates a schematic of the sight distance evaluation for the project driveways along Rustic Drive. The exhibits illustrate the limited use areas. Review of *Figures 11-1* indicates that sight distances at the project driveways are expected to be adequate if obstructions within the sight triangles are minimized. Therefore, any landscaping and/or hardscapes should be designed such that a driver's clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety.

11.3 Internal Circulation

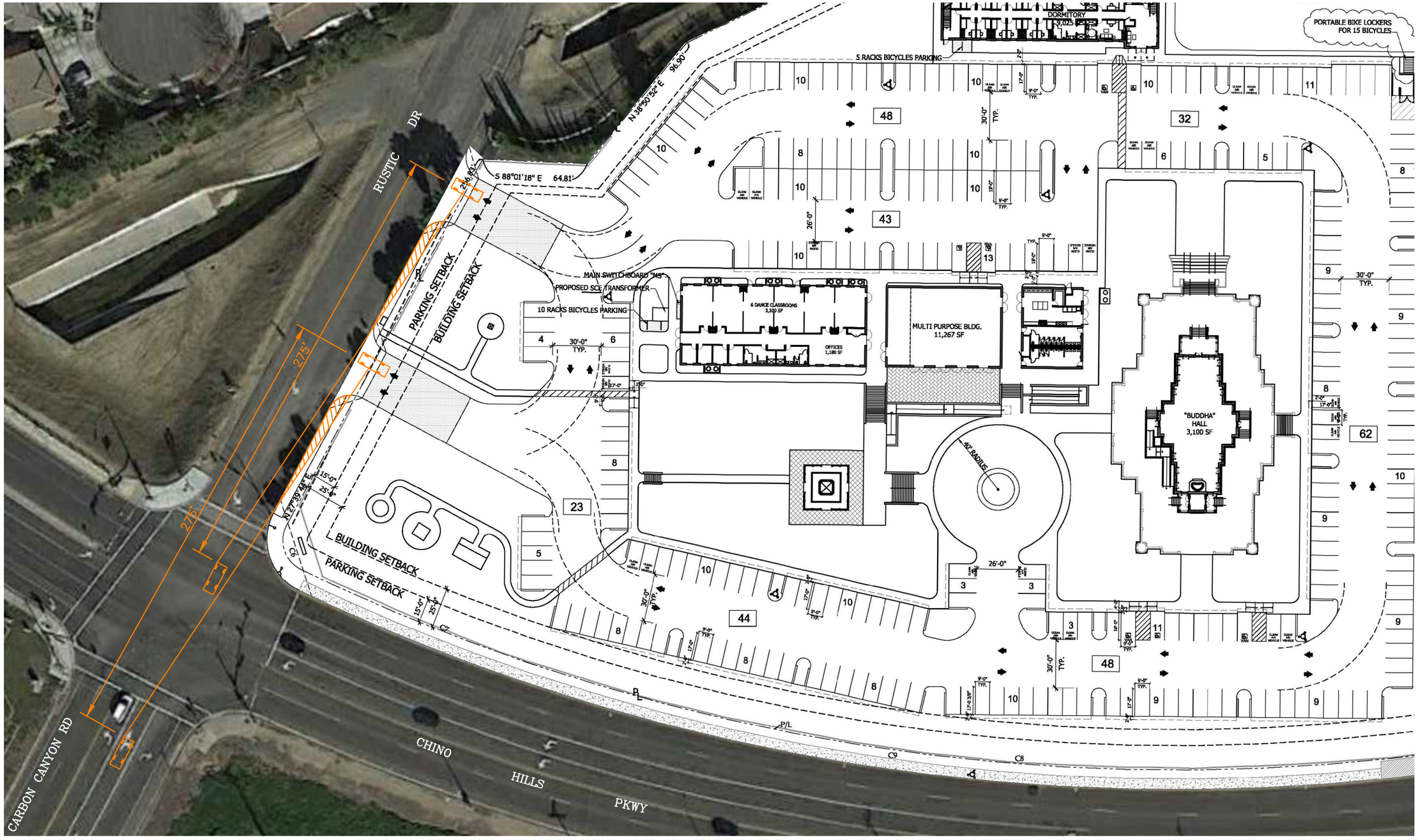
The on-site circulation layout of the proposed Project as illustrated in *Figure 2-2* on an overall basis is adequate. A circulation evaluation was performed using the *Turning Vehicle Templates*, developed by Jack E. Leisch & Associates and *AutoTURN for AutoCAD* computer software that simulates turning maneuvers for various types of vehicles. The turning templates were utilized to ensure that a small service/delivery truck (SU-30) and a fire truck could properly access and circulate through the Project site. A small service/delivery truck (SU-30) and a fire truck turning template were utilized in this evaluation.

Figures 11-2 and ***11-3*** illustrates the turning movements required of a small service/delivery truck (SU-30) and fire truck, respectively. As shown, we have confirmed that the turning radii of service/delivery vehicles (SU-30) and the turning radii of a fire truck are met as these vehicles can access the Project site and circulate throughout the property.

11.4 Project Specific Improvements

Subject to the review and approval of the City of Chino Hills, the following Project design features are to be implemented in conjunction with development of the proposed Project to ensure adequate access and egress to the site is provided:

- Install a "STOP" sign, stop bar at Project Driveway No. 1 on Rustic Drive, per the City of Chino Hills standards/requirements.
- Install a "STOP" sign, stop bar at Project Driveway No. 2 on Rustic Drive, per the City of Chino Hills standards/requirements.
- Maintain adequate sight distance for the Project driveways by minimizing obstructions (i.e. landscaping and/or hardscape) within the "limited use area" on either side of the proposed project driveways as noted in *Figure 11-1*. Landscaping and/or hardscapes should be designed such that a driver's clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety. Subject to the review and approval of the City Traffic Engineer, it is recommended that all plants and shrubs within the limited use area be of the type that will grow no higher than 30-inches above the curb.



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LINSCOTT LAW & GREENSPAN engineers

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SCALE: 1"=60'

SOURCE: GILLIS + PANICHAPAN ARCHITECTS, INC.

CORNER SIGHT DISTANCE

DESIGN SPEED LIMIT:	25 MPH
REQUIRED CORNER SIGHT DISTANCE:	275 FEET

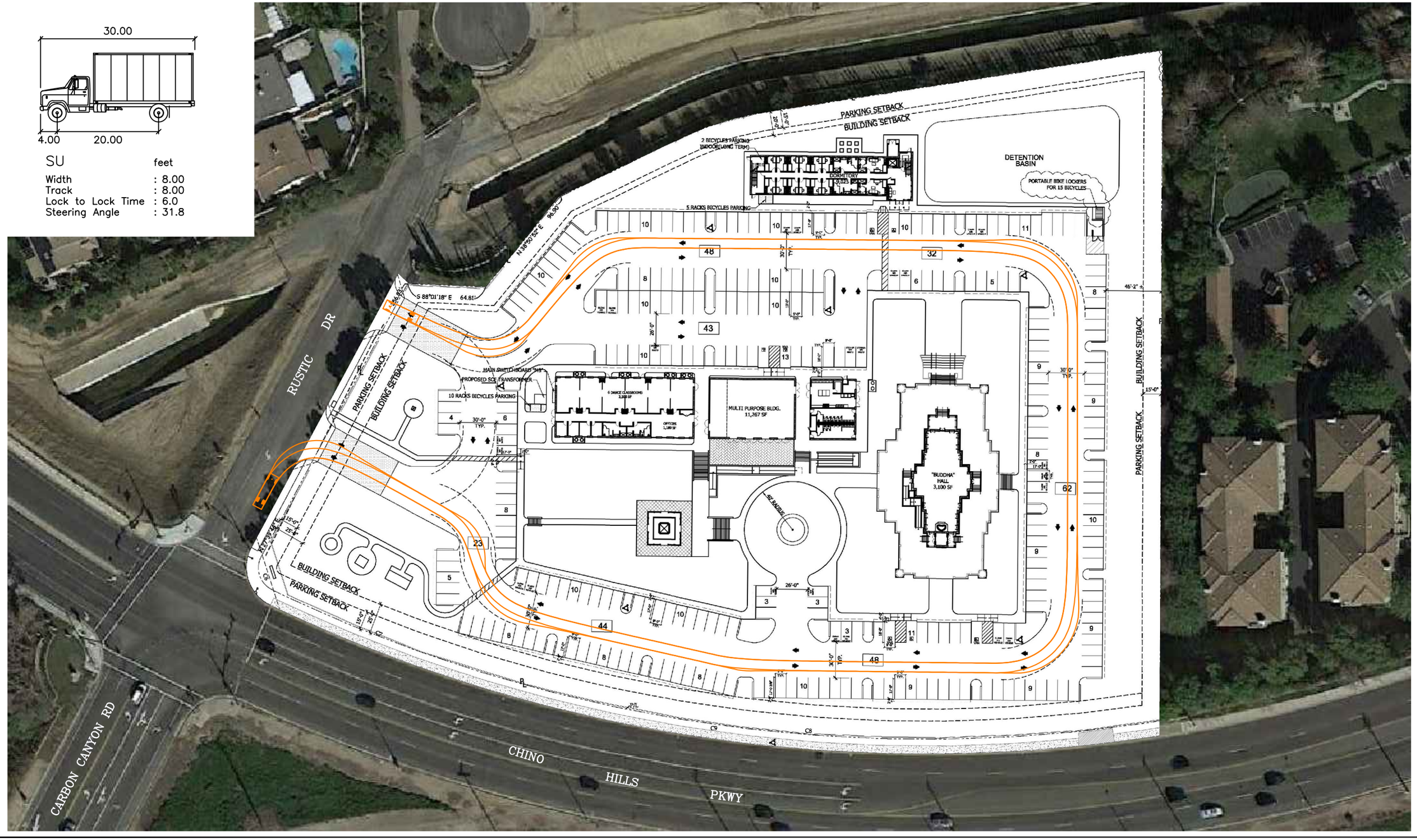
LEGEND

LIMITED USE AREA: TO ENSURE ADEQUATE SIGHT DISTANCE, HARDSCAPE AND/OR LANDSCAPE SHALL NOT BE HIGHER THAN 30 INCHES. NO FENCES OR WALLS IN LIMITED USE AREA.

FIGURE 11-1

SIGHT DISTANCE ANALYSIS

BUDDHIST TEMPLE, CHINO HILLS



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LINSCOTT LAW & GREENSPAN engineers

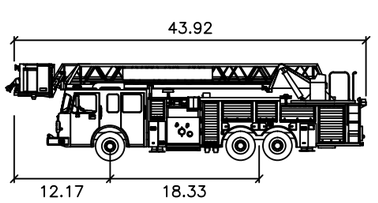
SOURCE: GILLIS + PANICHAPAN ARCHITECTS, INC.

SCALE: 1"=80'

FIGURE 11-2

SU-30 TRUCK MOVEMENT ANALYSIS

BUDDHIST TEMPLE, CHINO HILLS



Smeal Platform RM 87ft

	feet
Width	: 8.33
Track	: 7.83
Lock to Lock Time	: 6.0
Steering Angle	: 48.0

n:\3700\2163735 - buddhist temple, chino hills\dwg\3735 11-3.dwg LDP 12:34:29 12-13-2016 aguilar

LINSCOTT LAW & GREENSPAN engineers

SOURCE: GILLIS + PANICHAPAN ARCHITECTS, INC.

SCALE: 1"=80'

FIGURE 11-3

FIRE TRUCK MOVEMENT ANALYSIS
BUDDHIST TEMPLE, CHINO HILLS

12.0 PARKING ANALYSIS

To determine the number of parking spaces required for the proposed Project, the parking demand was calculated using the parking codes per *Chapter 16.34.060 – Number of Parking Spaces Required* in the *City of Chino Hills Municipal Code*. The City's Municipal Code specifies the parking requirements for church uses. The following parking ratios were utilized for the proposed Project:

- ***Fraternity/Sorority/Rooming House:*** 1 space per bed.
- ***Church, chapel, religious facility, cemetery, mortuary:*** 1 space per 3 fixed seats (or 54" of bench seating), or 1 space per 25 SF-GFA of assembly area where there are no fixed seats.
- ***Private Elementary and Junior High School:*** 1.5 space per classroom, plus 1 space per 5 fixed seats in auditorium, gymnasium or similar public assembly facility, or 1 space per 35 SF-GFA of assembly area where there are no fixed seats.
- ***Business and Professional (except medical offices) up to 2,000 SF-GFA:*** 1 space per 200 SF-GFA.
- ***Dance Studio:*** 1 space per 100 SF-GFA.

Table 12-1 summarizes the parking requirements for the proposed Project. Please note the parking analysis does not include the Kitchen/Toilets defined in *Table 2-1*, as it is assumed to be ancillary use to the proposed Multi-Purpose Building. A review of *Table 12-1* shows that the maximum required parking spaces from the proposed Project is 292 spaces. With a proposed on-site parking supply of 300 spaces, the Project satisfies the City's code parking requirements with a surplus of 8 spaces.

TABLE 12-1
CITY CODE PARKING REQUIREMENTS[24]

Project Description	Size	City of Chino Hills Code Parking Ratio	Spaces Required
Parking Requirement			
▪ Buddha Hall	3,100 SF of assembly area	1 space per 3 fixed seats (or 54" of bench seating), or 1 space per 25 SF of assembly area where there are no fixed seats	124 Spaces
▪ Multi-Purpose Building	3,600 SF of assembly area	1.5 space per classroom, plus 1 space per 5 fixed seats in auditorium, gymnasium or similar public assembly facility, or 1 space per 35 SF-GFA of assembly area where there are no fixed seats	103 Spaces
▪ Dance Classroom	3,100 SF	1 space per 100 SF-GFA	31 Spaces
▪ Offices	1,180 SF	1 space per 200 SF-GFA	6 Spaces
▪ Monks Dormitory	28 personal quarters	1 space per bed	28 Spaces
		A. Parking Requirement	**292 spaces**
		B. Total Parking Supply	**300 spaces**
		C. Parking Surplus/Deficiency (+/-) (B-A)	**+8 spaces**

[24] Source: *City of Chino Hills Municipal Code.*

13.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- ***Project Location*** – The Project site is a 7.3-acre parcel of land that is located at 2948 Chino Hills Parkway, north of Chino Hills Parkway and east of Rustic Drive. The Project is currently developed with two buildings, with Building 1 totaling 3,484 SF (monk residence) and Building 2 totaling 5,458 SF (Office/Meeting Room/Storage).

- ***Project Description*** **–** The proposed Buddhist Temple project includes construction of 21,936 square-feet (SF) of floor area within five (5) buildings that will include a 3,100 SF Buddha Hall, a 3,600 SF Meditation Area/Multi-purpose Building, a 4,280 SF Classroom/Office Building with six (6) rooms and 1,180 SF of office space, a 9,056 SF Monk Dormitory, and a 1,900 SF Kitchen/Restroom. A total of 300 parking spaces will be provided on-site.

  The Project is expected to be completed in three (3) phases, with Phase 1 including development of the Buddha Hall and kitchen/toilets building and surface parking, Phase 2 consisting of the construction of the Monk dormitory and Phase 3 including the Multi-purpose room/dance classroom/offices and surface parking. For this analysis, it is assumed that complete buildout of the Project will be completed by Year 2025, but is dependent on several factors, including the Project funding. Hence, to provide a conservative assessment, Year 2025 has been utilized to assess the Project's potential traffic impacts at full occupancy of the church within a near-term cumulative traffic setting.

  Access to the proposed Project will be provided via two (2) full access driveways located on Rustic Drive.

  Pedestrian circulation would be provided via existing public sidewalks along Chino Hills Parkway within the vicinity of the project frontage. The proposed Project will protect the existing sidewalk along project frontage and if necessary repair or reconstruct sidewalks along the project frontage per the City's request. The existing sidewalk system within the project vicinity provides direct connectivity to the major thoroughfares of Rustic Drive/Carbon Canyon Road and Chino Hills Parkway and pedestrian connectivity to the existing residential, recreational, institutional and commercial development in the surrounding area.

- ***Study Scope*** – The following seven (7) intersections were selected for analysis based on the City of Chino Hills requirements and through application of San Bernardino County Congestion Management Program (CMP) criteria.

  Key Study Intersections

  1. Peyton Drive at Eucalyptus Avenue (Chino Hills)
  2. Chino Hills Parkway at Grand Avenue (Chino Hills)
  3. Chino Hills Parkway at Eucalyptus Avenue (Chino Hills)
  4. Rustic Drive/Carbon Canyon Road at Chino Hills Parkway (Chino Hills/Caltrans)

5. Peyton Drive at Chino Hills Parkway (Chino Hills/Caltrans)
6. Pipeline Avenue at Chino Hills Parkway (Chino Hills/Caltrans)
7. Carbon Canyon Road at Carriage Hills Lane (Chino Hills/Caltrans)

Detailed peak hour level of service analyses were prepared at the above locations under the Existing Traffic Conditions, Existing Plus Project Traffic Conditions, Year 2025 Future Traffic Conditions, and Year 2025 Future Traffic Conditions plus Project. The Scope of Work for this project was confirmed with City staff and satisfies the City of Chino Hills requirements as outlined the *Traffic Impact Study Guidelines for Development Projects in the City of Chino Hills (dated 10/15/01).*

- ***Level of Service (LOS) Standards and Significant Impact Criteria*** – The City of Chino Hills considers LOS "D" to be the minimum acceptable condition that should be maintained during the peak commute hours. According to the City of Chino Hills, any intersection operating at LOS "E" or "F" is considered deficient/unsatisfactory. However, per the City of Chino Hills TIA guidelines, significant traffic impact is also considered to occur if the Project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the Project. The CMP definition of deficiency is based on maintaining a level of service standard of LOS "E" or better, except where an existing LOS "F" condition is identified in the CMP document.

- ***Existing Traffic Conditions*** – Based on the HCM method of analysis and the LOS criteria described in this report, two (2) key study intersections currently operates at unacceptable LOS during the weekday AM peak hour and/or PM peak hour, located at Carbon Canyon Road and Carriage Hills Lane and Peyton Drive at Chino Hills Parkway. The remaining five (5) key study intersections currently operate at an acceptable LOS D or better. The locations at adverse LOS are as follows:

		AM Peak Hour			PM Peak Hour		
Key Intersection		Delay	V/C	LOS	Delay	V/C	LOS
5.	Peyton Drive at Chino Hills Parkway	--	--	--	72.1 s/v	0.920	E
7.	Carbon Canyon Road at Carriage Hills Lane	39.5 s/v	0.218	E	48.8 s/v	0.108	E

- ***Project Trip Generation*** – Based on the Project description, the average trip rates for ITE Land Use 560: Church were utilized to forecast the Project's trip generation potential. A review of the lower portion of *Table 5-1* indicates that the proposed Project is forecast to generate 200 weekday daily trips (one half arriving, one half departing), with 12 trips (7 inbound, 5 outbound) produced during the AM peak hour and 12 trips (6 inbound, 6 outbound) produced during the PM peak hour.

  Based on review of the proposed Project's activity plan, it has been determined that the majority of the Project's weekday activities occur during non-peak hours. Hence, to provide a

conservative assessment the trip generation forecast presented in *Table 5-1* was utilized throughout this report.

- ***Related Projects Traffic Characteristics –*** Seventy-one (71) related projects located within the City of Chino Hills, City of Chino and City of Brea were considered as part of the cumulative background setting. Although not all related projects are expected to completed and occupied by Year 2025, the traffic analysis assumes otherwise to provide a conservative traffic assessment for near-term cumulative traffic conditions. The seventy-one (71) related projects included in the Year 2025 traffic conditions would generate a total of 136, 993 daily trips, with 9,531 trips (4,536 inbound and 4,995 outbound) forecast during the AM peak hour and 11,543 trips (5,661 inbound and 5,882 outbound) forecast during the PM peak hour.

- ***Existing Plus Project Traffic Conditions –*** The results of the traffic impact analysis indicates that the proposed Project will not directly impact any of the seven (7) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersections of Peyton Drive at Chino Hills Parkway and Carbon Canyon Road at Carriage Hills Lane are forecast to continue to operate at an unacceptable LOS E under Existing Plus Project traffic conditions, the proposed Project adds less than 0.01 to the V/C ratio and therefore the Project's incremental V/C ratio increase is considered insignificant. Further yet, the Project's impact is considered less than significant since the project contributes significantly less than 50 peak hour trips at these key locations. The remaining key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of Project traffic.

- ***Year 2025 Cumulative plus Project Traffic Conditions*** – The results of the traffic impact analysis indicates that five (5) of the seven (7) key study intersections are forecast to operate adversely when compared to the LOS standards and significant impact criteria specified in this report. The intersections forecast to operate at an adverse level of service in the Year 2025 Cumulative Plus Project Traffic Conditions during the AM peak hour and/or PM peak hour are as follows:

		AM Peak Hour			PM Peak Hour		
Key Intersection		Delay	V/C	LOS	Delay	V/C	LOS
2.	Chino Hills Parkway at Grand Avenue	57.3 s/v	0.943	E	--	--	--
3.	Chino Hills Parkway at Eucalyptus Avenue	57.0 s/v	0.941	E	--	--	--
5.	Peyton Drive at Chino Hills Parkway	--	--	--	138.5 s/v	1.186	F
6.	Pipeline Avenue at Chino Hills Parkway	--	--	--	91.1 s/v	1.046	F
7.	Carbon Canyon Road at Carriage Hills Lane	93.8 s/v	0.493	F	145.3 s/v	0.417	F

The traffic associated with the proposed Project will not directly impact any of the seven (7) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although five (5) of the seven (7) key study intersections are forecast to operate at an unacceptable LOS E or F under Year 2025 Plus Project traffic conditions, the proposed Project adds less than 0.01 to the V/C ratio, and therefore the Project's impact is

considered insignificant. Further yet, the Project's impact is considered less than significant since the project contributes less than 50 peak hour trips at the five intersections forecast to operate at LOS E or F. The remaining key study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours with the addition of Project traffic.

- ***Site Access Evaluation*** **–** All of the project driveways are forecast to operate at an acceptable LOS during the weekday AM peak hour and PM peak hour in the Existing Plus Project and Year 2025 Plus Project traffic conditions. As such, motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

  The Sight Distance Evaluation prepared for the project driveways was based on the criteria and procedures set forth by the California Department of Transportation (Caltrans) in the State's Highway Design Manual for "Private Road Intersections". Upon review, the sight distances at the project driveways are expected to be adequate if obstructions within the sight triangles are minimized.

  A circulation evaluation was performed using the *Turning Vehicle Templates*, developed by Jack E. Leisch & Associates and *AutoTURN for AutoCAD* computer software that simulates turning maneuvers for various types of vehicles. Upon review, the turning radii of service/delivery vehicles (SU-30) and the turning radii of a fire truck are met as these vehicles can access the Project site and circulate throughout the property.

- ***Parking Analysis*** – Based on the results of a parking assessment, the proposed parking supply of the Project satisfies the code parking requirements of the City of Chino Hills Municipal Code.

- ***Project-Specific Improvements*** - Subject to the review and approval of the City of Chino Hills, the following Project design features are to be implemented in conjunction with development of the proposed Project to ensure adequate access and egress to the site is provided:

  - Install a "STOP" sign, stop bar at Project Driveway No. 1 on Rustic Drive, per the City of Chino Hills standards/requirements.
  - Install a "STOP" sign, stop bar at Project Driveway No. 2 on Rustic Drive, per the City of Chino Hills standards/requirements.
  - Maintain adequate sight distance for the Project driveways by minimizing obstructions (i.e. landscaping and/or hardscape) within the "limited use area" on either side of the proposed project driveways as noted in *Figure 11-1*. Landscaping and/or hardscapes should be designed such that a driver's clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety. Subject to the review and approval of the City Traffic Engineer, it is recommended that all plants and shrubs within the limited use area be of the type that will grow no higher than 30-inches above the curb.

APPENDIX A

SCOPE OF WORK

LINSCOTT LAW & GREENSPAN engineers

Engineers & Planners
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Transportation
Parking

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Pasadena
Irvine
San Diego
Woodland Hills

To: Joe Dyer, Assistant City Engineer
City of Chino Hills – Public Works/Engineering

Date: September 8, 2016

CC: Jerrod Walters, Senior Planner
Community Development Department
Joe Power/Susanne Huerta, Rincon Consultants, Inc.

From: Richard E. Barretto, P.E., Principal
Linscott, Law & Greenspan, Engineers

LLG Ref: 2.16.3735.1

Subject: ***Traffic Study Scope of Work for the proposed Buddhist Temple Project Chino Hills, California***

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Traffic Study Scope of Work for the proposed Buddhist Temple project in the City of Chino Hills. The work program summarized below considers the City of Chino Hills requirements and work program included in the City's RFP for the Project. The traffic study is being prepared as part of the entitlement process and will be included be included in an *Initial Study/Mitigated Negative Declaration (IS/MND)* to be prepared for this Project.

Traffic Study Scope of Work

The Traffic Impact Analysis for the proposed Buddhist Temple project (herein after referred to as Project) will satisfy the traffic impact requirements of the City of Chino Hills as outlined in the *Traffic Impact Study Guidelines for Development Projects in the City of Chino Hills (dated 10/15/01),* and be consistent with the current *Congestion Management Program for San Bernardino County, 2005 Update Traffic Impact Analysis Report Guidelines.* Given the Project location in proximity to Chino Hills Parkway (SR-142), the criteria outlined in the current Caltrans *Guide for the Preparation of Traffic Impact Studies dated December 2002* will be considered.

A. Project Location: The Project site is a 7.3-acre parcel of land that is located at 2948 Chino Hills Parkway, north of Chino Hills Parkway and east of Rustic Drive. The Project is currently developed with two buildings, with Building 1 totaling 3,484 SF (monk residence) and Building 2 totaling 5,458 SF (Office/Meeting Room/Storage).

Access to the Project site is provided by SR-71 via the Ramona Avenue/Chino Hills Parkway Interchange to the southeast. Local access is provided via the intersection of Chino Hills Parkway at Carbon Canyon Road (SR-142)/Rustic Drive. See attached ***Figure 1-1,*** a Vicinity Map that illustrates the general location of the Project and surrounding street system.

Philip M. Linscott, PE (1924-2000)
Jack M. Greenspan, PE (Ret.)
William A. Law, PE (Ret.)
Paul W. Wilkinson, PE
John P. Keating, PE
David S. Shender, PE
John A. Boarman, PE
Clare M. Look-Jaeger, PE
Richard E. Barretto, PE
Keil D. Maberry, PE

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B. Project Description: The proposed Buddhist Temple project includes construction of 21,936 square-feet (SF) of floor area within five (5) buildings that will include a 3,100 SF Buddha Hall, a 3,600 SF Meditation Area/Multi-purpose Building, a 4,280 SF Classroom/Office Building with six (6) rooms and 1,180 SF of office space, a 9,056 SF Monk Dormitory, and a 1,900 SF Kitchen/Restroom. Parking for the project will be provided via 300 surface parking spaces. Per the information provided in the site "activity" plan, the Project's preliminary schedule of operations, submit to confirmation by the Project Applicant, is as follows:

THE TEMPLE

- OPEN 7 DAYS A WEEK FROM 9:00 AM – 5:00 PM.
- MOST ACTIVITIES ARE BETWEEN 10:00 AM -5:00 PM ON SUNDAY ONLY. ACTIVITIES ARE CHANTING, REQUEST FOR FIVE PERCEPTS, OFFER FOOD TO MONKS, RECITE SCRIPTURES, AND MEDITATION.
- ON MONDAY TO SATURDAY, FEW ACTIVITIES ARE HELD AND INCLUDE PEOPLE OFFERING FOOD TO THE MONKS, OFFERING DONATION, AND LISTENING TO THE PRAYER IN THE MEDITATION, CLASSROOM OR BUDDHA HALL.

MULTI-PUPOSE BUILDING

- DANCE CLASSROOMS (TRADITIONAL THAI DANCE) WITH 40 MAXIMUM OCCUPANCY ACTIVITY OCCURS ONLY ON SUNDAY FROM 10:00 AM – 3:00 PM.
- MULTI-PURPOSE CLASSROOM WITH 120 MAX. OCCUPANCY ACTIVITY OCCURS ONLY ON SUNDAY FROM 10:00 AM – 3:00 PM.
- KITCHEN/RESTROOM WITH 20 MAX. OCCUPANCY ACTIVITY OCCURS DAILY FROM 7:00 AM – 6:00 PM.
- OFFICE WITH 4 MAX. OCCUPANCY TOTAL ACTIVITY OCCURS DAILY FROM 7:00 AM – 6:00 PM.

BUDDHA HALL

- 80 MAX. OCCUPANCY
- 60 VISITORS, ACTIVITY OCCURS ONLY ON SUNDAY FROM 8:00 AM – 5:00 PM.
- 20 MONKS, ACTIVITY OCCURS DAILY FROM 8:00 AM – 4:00 PM.

DORMITORY BUILDING

- 28 MAX. OCCUPANCY
- ACTIVITY OCCURS DAILY, 24 HOURS A DAY.

OTHER EVENTS

- FARMER MARKET OCCURS ON SUNDAY FROM 9:00 AM – 4:00 PM. TEMPORARY KIOSKS OCCUPY AT THE LANDSCAPE NEXT TO JADEE.IT IS NOT COMMERCIAL TYPE OF FARMER MARKET. OCCASIONALLY, PEOPLE GIVE OUT FREE FOOD AND SELL PRODUCES FOR RAISINGMONEY TO THE TEMPLE AS DONATION. THEREFORE, THE TRAFFICSAND PEDESTRIAN CIRCULATION WILL NOT BE AS DENSE AS NORMALFARMER MARKET.

- HOLIDAY FESTIVAL OCCURS ONCE A MONTH. ON HOLIDAY, VISITORSWILL OFFER FOOD TO THE MONKS, CHANTING, AND MEDITATE ATTHE MULTI-PURPOSE CLASSROOM AND BUDDHA HALL. USUALLY, THEACTIVITIES ARE THE SAME AS EVERY SUNDAY.

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- THERE IS NO FORMAL WEDDING CEREMONY OR RECEPTION OCCURSIN THE TEMPLE. THE MONK WILL NOT CONDUCT ANY CEREMONY.TYPICALLY FOR WEDDING, GROUP OF PEOPLE WILL OFFER FOOD TOTHE MONKS, GIVING DONATIONS, CHANTING, AND LISTEN TO THEPRAYER IN THE MEDITATION CLASSROOM OR BUDDHA HALL ASTYPICAL SUNDAY ACTIVITIES.

Access to the project site will be provided via two driveways on Rustic Drive. The Project is expected to be completed in three (3) phases. Subject to confirmation by the City and/or Project Applicant, with Phase 1 including development of the Buddha Hall and kitchen/toilets building and surface parking, Phase 2 consisting of the construction of the Monk dormitory and Phase 3 including the Multi-purpose room/dance classroom/offices and surface parking.

For this analysis, it is assumed that complete buildout of the Project will be completed by 2025 (to be confirmed by the City/Project Applicant) but is dependent on several factors, including the project funding. It is noted that the potential impact of the entire Project is accounted for in the worst-case scenario presented as part of the "Existing Plus Project" traffic analysis.

Figure 2-1 is an aerial photograph of the Project site. ***Figure 2-2*** presents the Project Site Plan prepared by *Gillis + Panichapan Architects, Inc.*

C. Traffic Study Locations: The following seven (7) intersections, identified in collaboration with the City of Chino Hills, represent the key study intersections.

1. Eucalyptus Avenue at Chino Hills Parkway
2. Carbon Canyon Road (SR-142)/Rustic Drive at Chino Hills Parkway
3. Carriage Hills at Carbon Canyon Road
4. Peyton Drive at Chino Hills Parkway
5. Peyton Drive at Eucalyptus Avenue
6. Pipeline Avenue at Chino Hills Parkway
7. Grand Avenue at Chino Hills Parkway

D. Level of Service Criteria: According to the City of Chino Hills, as well as City of Chino, LOS "D" is the minimum acceptable condition that should be maintained during the peak commute hours. Hence, any intersection operating at LOS "E" or "F" is considered deficient/unsatisfactory. The County of San Bernardino CMP definition of deficiency is based on maintaining a level of service standard of LOS "E" or better, except where an existing LOS "F" condition is identified in the CMP document.

Caltrans has established that LOS D is the operating standard for all Caltrans facilities. Caltrans has determined that all state owned facilities that operate below

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LOS D should be identified and improved to an acceptable LOS. The *Caltrans Traffic Impact Study Guidelines dated December 2002* does state that if an existing state owned facility operates at less than LOS D, the existing service level should be maintained.

E. Impact Criteria: According to the City of Chino Hills guidelines, a significant traffic impact occurs when the intersections or roadway projected to operate at LOS D or better without the Project would exceed LOS D with the Project. Significant traffic impact is also considered to occur if the Project results in an increase of 0.01 or more in the volume-to-capacity (V/C) ratio at a location that is projected to operate at LOS E or F without the Project.

F. Traffic Counts: AM peak hour and PM peak hour traffic counts, inclusive of truck classification counts, for the seven (7) key study intersections will be collected in during the week of September 12, 2016 as discussed with City staff and the Project Applicant.

In addition, supplemental 24-hour average daily traffic counts at up to three (3) locations, as identified below, will be collected as well during a weekday and Saturday and Sunday in September 2016.

1. Rustic Drive, north of Chino Hills Parkway
2. Carbon Canyon Road (SR=142), south of Chino Hills Parkway
3. Chino Hills Parkway, east of Carbon Canyon Road.

See *Figure 1-1* for study intersections/count locations.

G. Traffic Generation: Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation rates used in the traffic forecasting procedure are found in the Ninth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2012]. As a preliminary estimate only, ***Table 5-1 s***ummarizes the trip generation rates used in forecasting the vehicular trips generated by the Project as well as the Project's trip generation potential.

Given our understanding of the project and its operational characteristics, the trip generation potential for the new Buddhist Temple was estimated using the ITE rates for Land Use Code 560: Church. *This forecast will be compared to the trip generation forecast of the Project based on the operations characteristics of temple, which will be calculated upon receipt of the Project's expected schedule of events, and typical weekday and weekend activities.*

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A review of the lower half of *Table 5-1* indicates that the proposed Project's trip generation potential could total 200 weekday daily trips (one half arriving, one half departing), with 12 trips (7 inbound, 5 outbound) produced during the AM peak hour and 12 trips (6 inbound, 6 outbound) produced during the PM peak.

The trip generation potential of the Project will be determined in collaboration with City staff upon review of the information in Table 5-1.

H. Trip Distribution: The general, directional traffic distribution pattern for the proposed Project is graphically presented in ***Figure 5-1***. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes,
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- ingress/egress availability at the Project site, and
- input from City staff.

I. Near-Term Cumulative (Year 2025) Traffic:

- Project Completion Year: 2025 (Project completion year to be confirmed with Rincon Consultants, Inc. and City staff).
- Ambient Growth Rate: 2.0% per year subject to confirmation of City staff.
- Cumulative Projects: *Planned and/or approved projects within located within the Project vicinity will be researched at the City of Chino Hills as well as and adjacent jurisdictions for inclusion in the cumulative traffic analysis, including the Coptic Orthodox Church Project, and Morningfield Residential and Lutheran Church Expansion.*

J. Analysis Scenarios: The following are the proposed traffic analysis scenarios.

(a) Existing Traffic Conditions;
(b) Existing plus Project Traffic Conditions;
(c) Scenario (b) with Mitigation (if necessary);
(d) Near-Term Cumulative Traffic Conditions;
(e) Near-Term Cumulative plus Project Traffic Conditions; and

The LOS calculations will be based on the Highway Capacity Manual (HCM) method of analysis for signalized and unsignalized intersections. The Project's potential impacts will be based on City of Chino Hills significant impact criteria.

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J. Other Issues:

- Evaluate site access and internal circulation of the proposed Project.
- Conduct LOS calculations at the proposed Project driveway(s).
- Conduct Parking Requirements per City Code.
- Conduct signal warrant assessment at key unsignalized intersections per the CA MUTCD criteria.

We appreciate the opportunity to provide this scope of work. Should you have any questions, please call me at (949) 825-6175. Thank You.

Approved by:

_____ _____

City of Chino Hills Date

CC: File

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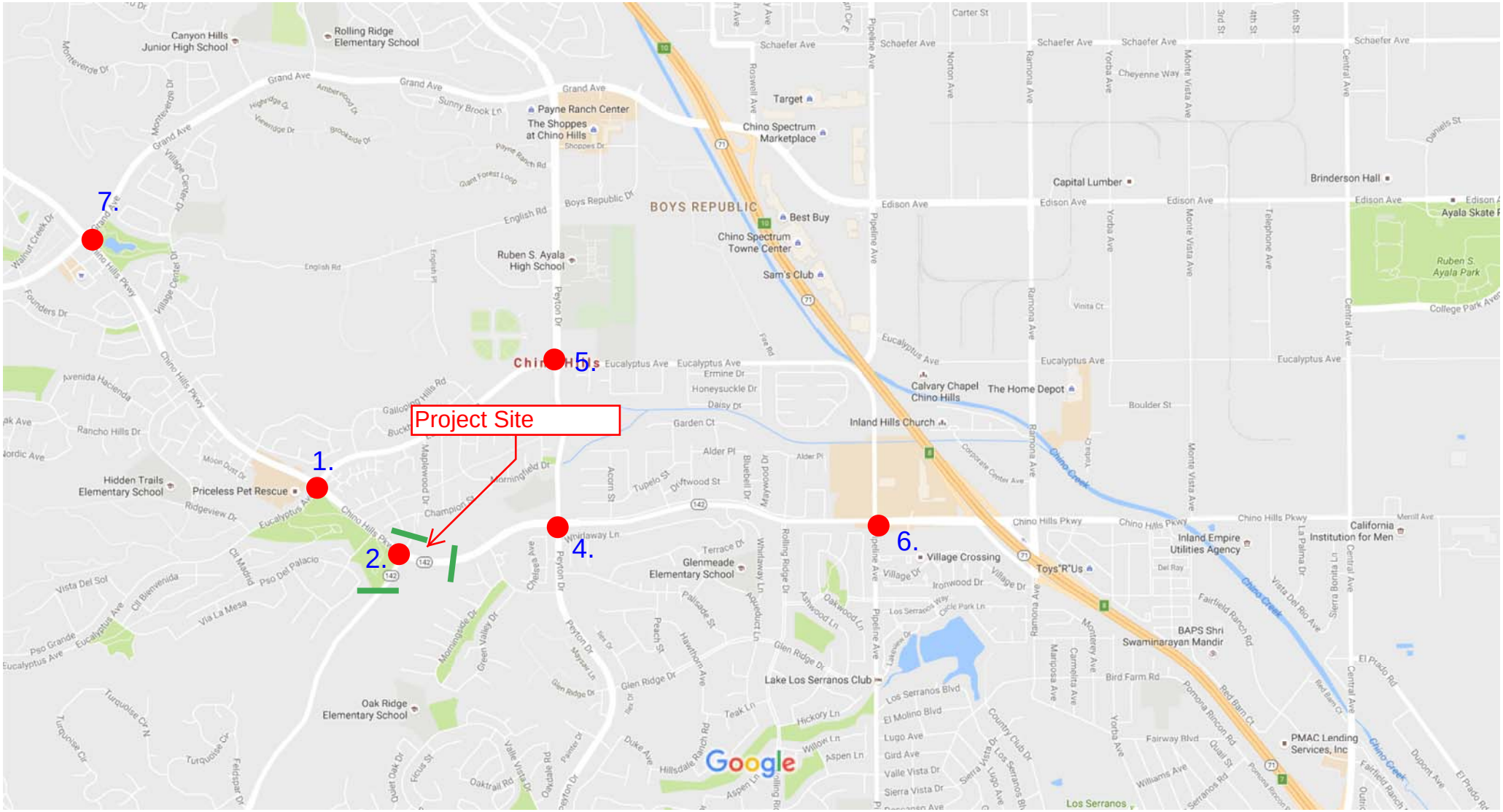
Google Maps Chino Hills

BUDDHIST TEMPLE



Study Intersections

ADT segment

3.

Carbon Canyon Road
at Carriage Hills Lane
(roadway to Carriage Hills
residential development)

FIGURE 1-1

PROJECT VICINITY MAP & STUDY LOCATIONS

Google Maps Chino Hills

Imagery ©2016 County of San Bernardino, DigitalGlobe, U.S. Geological Survey, Map data ©2016 Google 50 ft

FIGURE 2-1
EXISTING AERIAL SITE PLAN

Wat Phra That Doi Suthep USA
8/18/2015

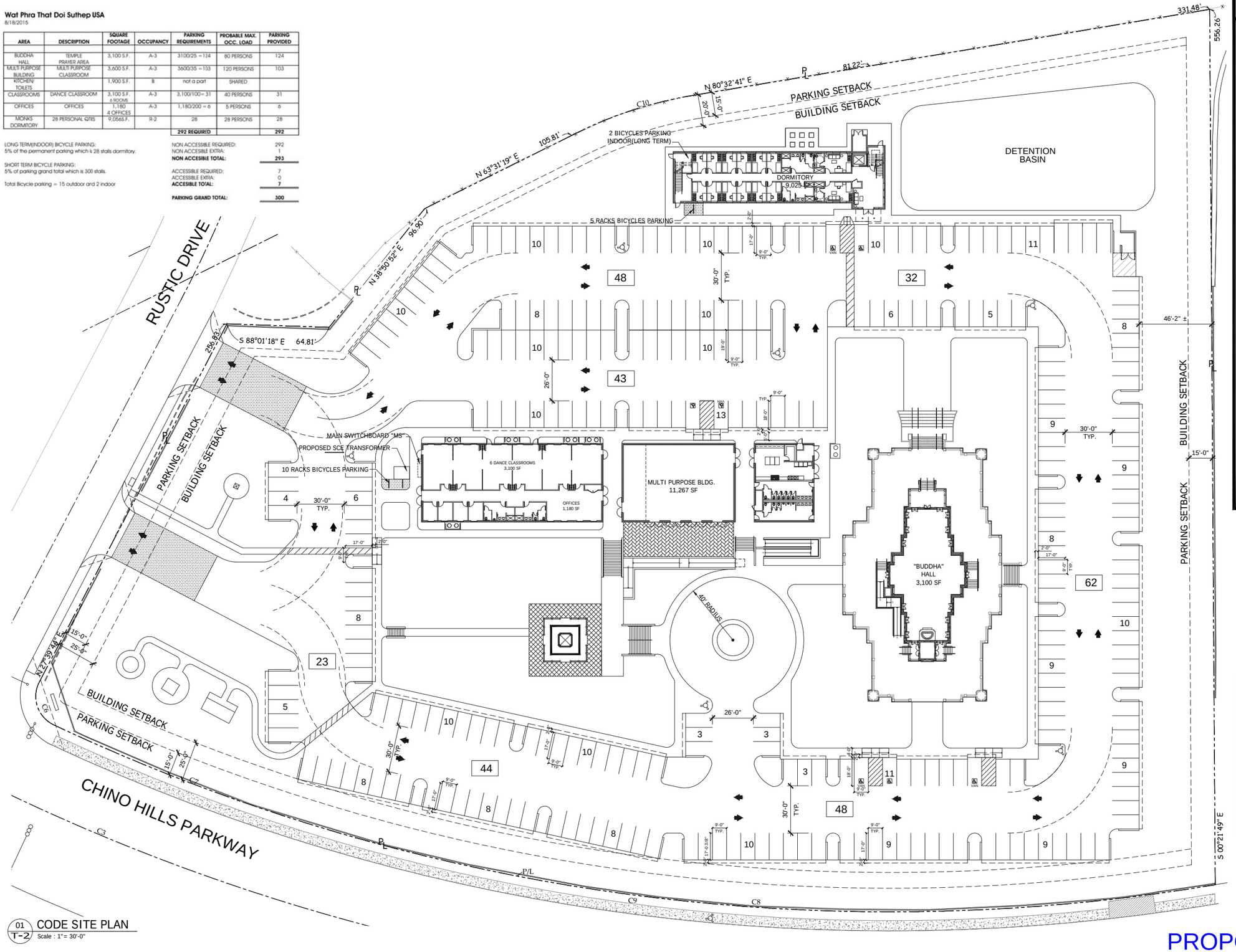
AREA	DESCRIPTION	SQUARE FOOTAGE	OCCUPANCY	PARKING REQUIREMENTS	PROBABLE MAX. OCC. LOAD	PARKING PROVIDED
BUDDHA HALL	TEMPLE PRAYER AREA	3,100 S.F.	A-3	3100/25 =124	80 PERSONS	124
MULTI PURPOSE BUILDING	MULTI PURPOSE CLASSROOM	3,600 S.F.	A-3	3600/35 =103	120 PERSONS	103
	KITCHEN/ TOILETS	1,900 S.F.	B	not a part	SHARED	
CLASSROOMS	DANCE CLASSROOM	3,100 S.F. 6 ROOMS	A-3	3,100/100= 31	40 PERSONS	31
OFFICES	OFFICES	1,180 4 OFFICES	A-3	1,180/200 = 6	5 PERSONS	6
MONKS DORMITORY	28 PERSONAL QTRS	9,0565.F.	R-2	28	28 PERSONS	28
				292 REQUIRED		**292**

LONG TERM(INDOOR) BICYCLE PARKING:
5% of the permanent parking which is 28 stalls dormitory.

SHORT TERM BICYCLE PARKING:
5% of parking grand total which is 300 stalls.

Total Bicycle parking = 15 outdoor and 2 indoor

NON ACCESSIBLE REQUIRED:	292
NON ACCESSIBLE EXTRA:	1
NON ACCESIBLE TOTAL:	**293**
ACCESSIBLE REQUIRED:	7
ACCESSIBLE EXTRA:	0
ACCESIBLE TOTAL:	**7**
PARKING GRAND TOTAL:	**300**



01 T-2 CODE SITE PLAN
Scale : 1"= 30'-0"

SITE ANALYSIS

ADDRESS: 2948 CHINO HILLS PARKWAY
CHINO HILLS, CA 91709

APN: 1032-261-15, 1032-261-16, 1032-261-17

PARCEL SIZE: 7.3 ACRES

EXISTING ZONING: C-N NEIGHBORHOOD COMMERCIAL
PROPOSED ZONING: I-1 INSTITUTIONAL PRIVATE

SETBACKS: FRONT: 25' FRONT, RUSTIC DRIVE
SIDE: 25' CHINO HILLS PARKWAY
SIDE: 15' SIDE YARD SETBACK
REAR: 20' REAR YARD SETBACK

LANDSCAPE REQUIRED: 20% OF THE PROJECT AREA
5% OF THE PARKING AREA

PARKING SETBACK: 15' ALL PROPERTY LINES

MAXIMUM HEIGHT LIMIT: STRUCTURE: 40'
BUILDING SPIRES: 80'

PROPOSING BUILDING HEIGHT

DORMITORY BUILDING: 30'-5"
MULTI-PURPOSE BUILDING: 23'-9"
BUDDHA HALL: 38'-7"
BUDDHA HALL SPIRES: 50'-3"

NUMBER OF PARKING REQURED AND PROVIDED:

PARKING REQUIREMENTS:
SEE MATRIX FOR ADDITIONAL INFORMATION.

RELIGIOUS ASSEMBLY: 1 STALL PER 25 S.F.
GENERAL ASSEMBLY 1 STALL PER 35 S.F.
DANCE CLASSROOM: 1 STALL PER 100 S.F.
OFFICES: 1 STALL PER 200 S.F.
KITCHEN/TOILETS: SHARED

NON-ACCESSIBLE PARKING:
REQUIRED: 292 STALLS
PROVIDED: 293 STALLS

ADA ACCESSIBLE PARKING:
REQUIRED: 7 STALLS (200 - 300 AMOUNT OF STALL)
PROVIDED: 7 STALLS

PARKING STALL SIZE: A. 17' MIN. LONG, 9' MIN WIDE
MAX. 2' VEHICLE OVERHANG
B. 19' MIN. LONG, 9' MIN. WIDE

PROPERTY LINE DIMENSIONS

CHINO HILLS PARKWAY:	788.54'
RUSTIC DRIVE:	256.83'
NORTHERLY PL:	680.22'
EASTERLY PL:	566.56'

SEE SHEET A-1.1 FOR ADDITIONAL INFORMATION

FOR PROPERTY LINES DIMENSION
CURVE DATA TABLE:

NUMBER	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
C1	74°21'57"	986.14'	1300.00'	1687.31'
C2	10°25'10"	118.53'	1300.00'	236.41'
C3	11°51'58"	135.10'	1300.00'	269.23'
C4	24°57'28"	287.70'	1300.00'	566.27'
C5	27°07'19"	313.57'	1300.00'	615.38'
C6	92°27'45"	20.88'	20.00'	32.28'
C7	08°41'57"	94.92'	1248.00'	189.48'
C8	26°01'15"	288.36'	1248.00'	566.78'
C9	34°43'12"	390.14'	1248.00'	756.26'
C10	17°02'42"	40.91'	273.00'	81.22'
C11	11°51'20"	86.49'	833.00'	172.36'
C12	28°01'27"	199.64'	800.00'	391.29'
C13	17°02'42"	44.96'	300.00'	89.25'

FIGURE 2-2
PROPOSED SITE PLAN

RONALD PANICHAPAN No. C-29344 EXP. 11/30/15 REGISTERED ARCHITECT STATE OF CALIFORNIA
architecture planning interior
Gillis + Panichapan Architects, Inc.
2900 BRISTOL STREET COSTA MESA CALIFORNIA 92626
SUITE G-205 TEL (714) 668-4260
FAX (714) 668-4265

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4TH PLANNING SUBMITTAL

DATE: 08/18/15
JOB NO.: 3212
DRAWN BY: STAFF
CHECKED BY: LP
SCALE: 1" = 30'-0"

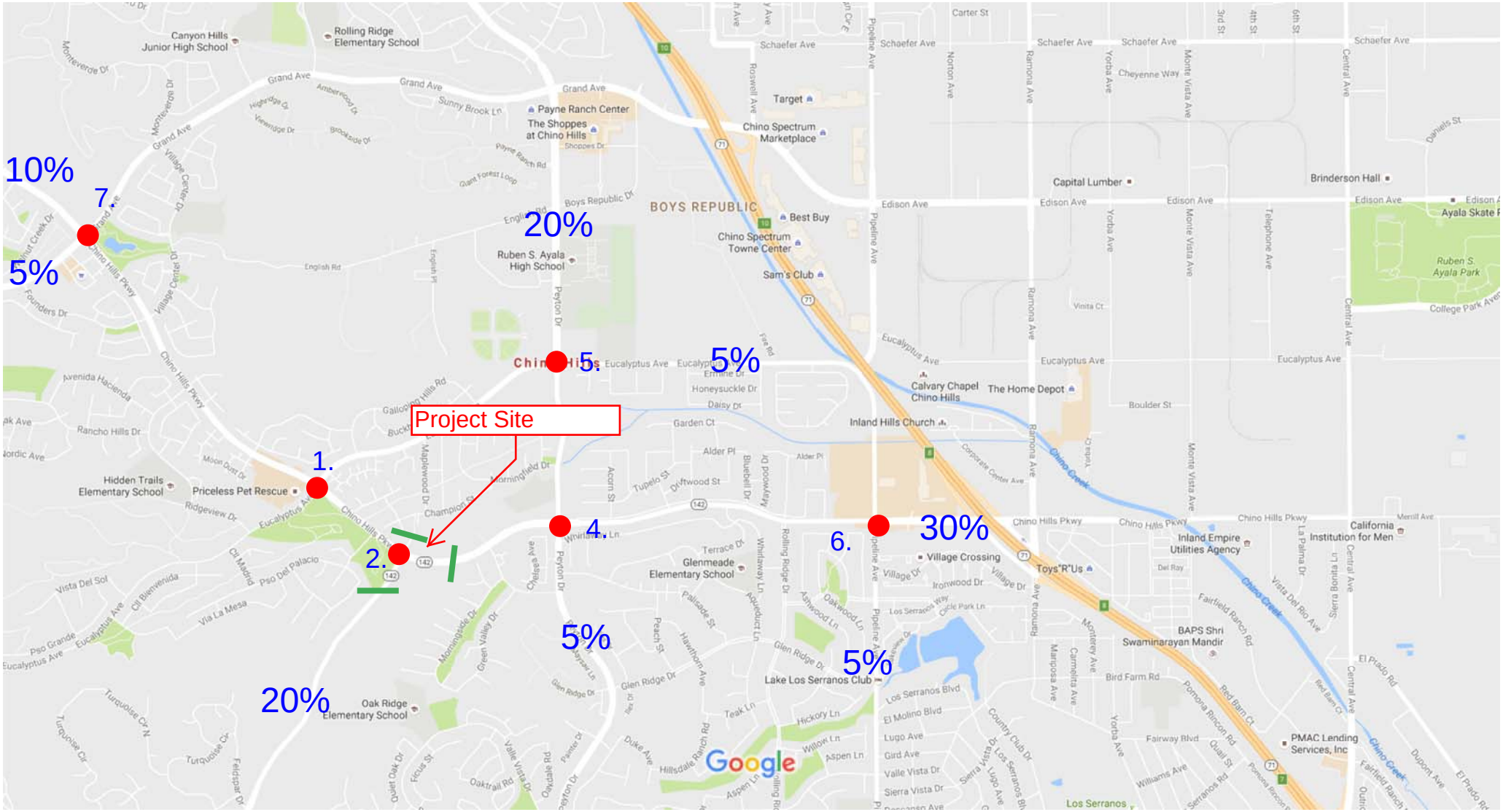
CODE SITE PLAN

WAT PHRA THAT DOI SUTHEP USA
Wat Phra That Doi Suthep USA

T-2

Google Maps Chino Hills

BUDDHIST TEMPLE EXPANSION



Study Intersections

ADT segment

XX% - General Direction Trip Distribution Percentage

3.

Carbon Canyon Road
at Carriage Hills Lane
(roadway to Carriage Hills
residential development)

FIGURE 5-1

PROJECT TRIP DISTRIBUTION

TABLE 2-1

BUDDHIST TEMPLE

PROJECT DEVELOPMENT SUMMARY[1]

Land Use / Project Description	Building Floor Area (SF-GFA)	Use	Occupancy
Building			
❑ Buddha Hall	3,100 SF	Temple Prayer Area	80 persons
❑ Multi-Purpose Building	3,600 SF	Multipurpose Classroom	120 persons
❑ Kitchen/Toilets	1,900 SF	--	--
❑ Classrooms (divisible to 6 rooms)	3,100 SF	Dance Classroom	40 persons
❑ Offices (4 rooms)	1,180 SF	Offices	5 person
❑ Monks Dormitory	9,056 SF	28 personal quarters	28 persons
Total Building Floor Area	**21,936 SF**	**--**	**--**
Vehicular Parking Supply			
❑ Standard	292 spaces	--	--
❑ Van Accessible	1 spaces	--	--
❑ Standard Accessible	7 spaces	--	--
Total Vehicular Parking Supply	**300 spaces**	**--**	**--**

Notes:

- SF-GFA = square feet of gross floor area

[1] Source: City of Chino Hills/Rincon Consultants, Inc. and *Code Site Plan Wat Phra That Doi Suthep USA Sheet T-2 dated 8-18-2015 prepared by Gillis + Panichapan Architects, Inc.*

DRAFT

TABLE 5-1

PROJECT TRAFFIC GENERATION RATES[2]

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour			Sunday Daily 2-Way
		Enter	Exit	Total	Enter	Exit	Total	
Generation Rates:								
▪ 560: Church (TE/1000 SF)	9.11	62	38	0.56	48	52	0.55	36.63
Generation Forecast:								
Proposed Project								
▪ Buddhist Temple (21.936 SF)	200	7	5	12	6	6	12	804

DRAFT

[2] Source*: Trip Generation, 9th Edition,* Institute of Transportation Engineers, (ITE) [Washington, D.C. (2012)].

APPENDIX B

EXISTING TRAFFIC COUNT DATA

APPENDIX B-I

INTERSECTION COUNTS

INTERSECTION TURNING MOVEMENT COUNTS

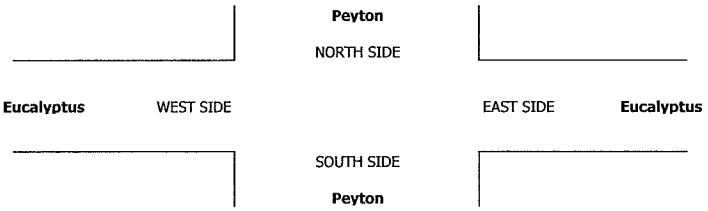
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

	NOTES:								
PCE Adjusted	Class	1	2	3	4	5	6		
	Factor	1	1.5	2	3	1.5	1.5		

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	4	182	8	55	81	114	89	10	0	28	38	82	689					0
	7:15 AM	0	126	10	72	127	135	96	18	1	28	30	66	706					0
	7:30 AM	3	94	25	24	92	52	27	21	3	30	41	26	436					0
	7:45 AM	2	89	25	15	55	36	39	19	2	29	40	31	379					0
	8:00 AM	1	87	27	19	60	35	25	38	1	21	34	23	371					0
	8:15 AM	2	69	42	39	71	34	44	54	3	26	42	38	462					0
	8:30 AM	1	94	54	42	89	37	37	61	3	53	68	67	604					0
	8:45 AM	2	83	12	39	77	24	30	44	1	29	35	22	396					0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	VOLUMES	15	821	202	305	650	465	386	263	14	244	326	353	4,042	0	0	0	0	0
	APPROACH %	1%	79%	19%	21%	46%	33%	58%	40%	2%	26%	35%	38%						
	APP/DEPART	1,038	/	1,560	1,420	/	907	663	/	770	922	/	806	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	9	489	68	166	353	337	251	67	6	115	148	203	2,210					
	APPROACH %	2%	86%	12%	19%	41%	39%	77%	21%	2%	25%	32%	44%						
	PEAK HR FACTOR		0.731			0.641			0.709			0.792		0.783					
	APP/DEPART	566	/	943	856	/	474	324	/	301	466	/	493	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	4:00 PM	8	106	30	53	113	58	49	40	3	31	37	59	585					0
	4:15 PM	10	91	48	44	116	69	42	40	2	19	40	53	573					0
	4:30 PM	4	127	41	51	129	53	51	52	3	24	57	58	648					0
	4:45 PM	5	120	34	49	96	53	38	44	4	24	52	61	578					0
	5:00 PM	1	110	44	35	101	65	44	65	4	33	47	53	601					0
	5:15 PM	12	121	58	50	125	77	49	54	4	34	84	42	708					0
	5:30 PM	26	112	43	57	144	69	54	67	9	29	82	46	737					0
	5:45 PM	22	131	36	59	129	88	73	90	19	46	55	71	817					0
	VOLUMES	88	916	333	397	952	531	399	450	48	240	454	442	5,247	0	0	0	0	0
	APPROACH %	7%	69%	25%	21%	51%	28%	44%	50%	5%	21%	40%	39%						
	APP/DEPART	1,336	/	1,756	1,879	/	1,240	897	/	1,180	1,135	/	1,072	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	61	474	181	201	499	299	220	275	36	142	268	211	2,863					
	APPROACH %	8%	66%	25%	20%	50%	30%	41%	52%	7%	23%	43%	34%						
	PEAK HR FACTOR		0.936			0.905			0.730			0.905		0.876					
	APP/DEPART	715	/	904	998	/	677	530	/	656	621	/	627	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

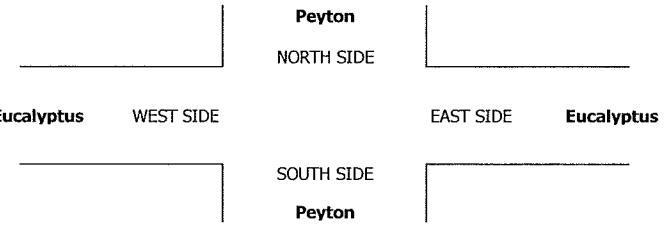
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	4	166	8	55	70	109	89	10	0	28	33	80	652	0	23	0	0	23
	7:15 AM	0	121	8	72	116	133	94	16	1	28	30	64	683	0	26	0	0	26
	7:30 AM	3	86	25	24	81	41	27	21	3	30	36	21	398	0	0	0	0	0
	7:45 AM	2	84	25	15	47	34	35	17	2	29	38	26	354	0	1	0	0	1
	8:00 AM	1	81	24	16	54	30	25	36	1	21	34	23	346	0	0	0	0	0
	8:15 AM	2	67	42	39	61	32	40	52	3	26	40	38	442	0	1	0	0	1
	8:30 AM	1	92	52	40	79	35	37	56	1	53	68	64	578	0	0	0	0	0
	8:45 AM	2	78	12	32	70	24	28	41	1	27	27	20	362	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	15	775	196	293	578	438	375	249	12	242	306	336	3,815	0	51	0	0	51
	APPROACH %	2%	79%	20%	22%	44%	33%	59%	39%	2%	27%	35%	38%						
	APP/DEPART	986	/	1,537	1,309	/	832	636	/	687	884	/	759	0					
	BEGIN PEAK HR	7:00 AM																	
	VOLUMES	9	457	66	116	314	317	245	64	6	115	137	191	2,087					
	APPROACH %	2%	86%	12%	15%	39%	40%	78%	20%	2%	26%	31%	43%						
	PEAK HR FACTOR		0.747			0.621			0.709			0.785		0.764					
	APP/DEPART	532	/	943	797	/	435	315	/	246	443	/	463	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	8	104	28	51	113	56	47	40	3	31	37	59	577	0	1	0	0	1
	4:15 PM	10	89	45	44	113	69	40	37	2	19	37	51	556	0	0	0	0	0
	4:30 PM	4	120	38	51	124	51	47	52	3	24	54	58	626	0	0	0	0	0
	4:45 PM	5	113	32	47	93	53	38	42	4	24	52	59	562	0	0	0	0	0
	5:00 PM	1	105	44	35	101	65	41	63	4	33	44	53	589	0	0	0	0	0
	5:15 PM	12	119	58	50	123	77	47	52	4	34	82	42	700	0	0	0	0	0
	5:30 PM	26	107	43	57	141	67	51	64	9	29	82	44	720	0	0	0	0	0
	5:45 PM	20	126	36	57	126	85	73	85	19	43	55	69	794	0	0	0	0	0
	VOLUMES	86	883	324	392	934	523	384	435	48	237	443	435	5,124	0	1	0	0	1
	APPROACH %	7%	68%	25%	21%	51%	28%	44%	50%	6%	21%	40%	39%						
	APP/DEPART	1,293	/	1,703	1,849	/	1,219	867	/	1,150	1,115	/	1,052	0					
	BEGIN PEAK HR	5:00 PM																	
	VOLUMES	59	457	181	199	491	294	212	264	36	139	263	208	2,803					
	APPROACH %	8%	66%	26%	20%	50%	30%	41%	52%	7%	23%	43%	34%						
	PEAK HR FACTOR		0.922			0.918			0.723			0.913		0.883					
	APP/DEPART	697	/	877	984	/	666	512	/	644	610	/	616	0					



INTERSECTION TURNING MOVEMENT COUNTS

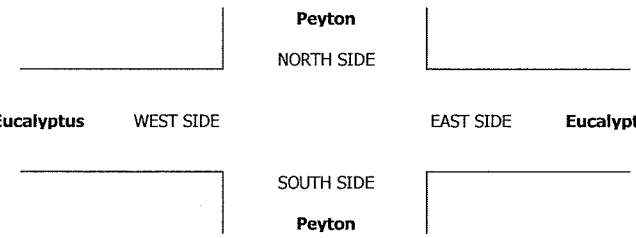
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	3	0	0	3	1	0	0	0	0	1	1	9	0	0	0	0	0
	7:15 AM	0	1	0	0	2	0	0	1	0	0	0	0	4	0	0	0	0	0
	7:30 AM	0	0	0	0	0	2	0	0	0	0	2	1	5	0	0	0	0	0
	7:45 AM	0	3	0	0	4	1	0	1	0	0	1	3	13	0	0	0	0	0
	8:00 AM	0	2	0	1	3	0	0	0	0	0	0	0	6	0	0	0	0	0
	8:15 AM	0	1	0	0	3	1	0	0	0	0	0	0	5	0	0	0	0	0
	8:30 AM	0	0	1	0	2	1	0	1	1	0	0	1	7	0	0	0	0	0
	8:45 AM	0	1	0	2	3	0	1	1	0	1	2	1	12	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	11	1	3	20	6	1	4	1	1	6	7	61	0	0	0	0	0
	APPROACH %	0%	92%	8%	10%	69%	21%	17%	67%	17%	7%	43%	50%						
	APP/DEPART	12	/	19	29	/	22	6	/	8	14	/	12	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	6	1	1	12	3	0	2	1	0	1	4	31					
	APPROACH %	0%	86%	14%	6%	75%	19%	0%	67%	33%	0%	20%	80%						
	PEAK HR FACTOR		0.583			0.800			0.375			0.313		0.596					
	APP/DEPART	7	/	10	16	/	13	3	/	4	5	/	4	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	0
	4:15 PM	0	1	2	0	1	0	0	2	0	0	2	1	9	0	0	0	0	0
	4:30 PM	0	3	2	0	2	0	0	0	0	0	2	0	9	0	0	0	0	0
	4:45 PM	0	0	0	1	2	0	0	1	0	0	0	0	4	0	0	0	0	0
	5:00 PM	0	1	0	0	0	0	2	1	0	0	0	0	4	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0
	5:30 PM	0	2	0	0	2	1	0	0	0	0	0	1	6	0	0	0	0	0
	5:45 PM	1	1	0	1	2	1	0	3	0	2	0	1	12	0	0	0	0	0
	VOLUMES	1	8	4	3	9	3	3	8	0	2	4	3	48	0	0	0	0	0
	APPROACH %	8%	62%	31%	20%	60%	20%	27%	73%	0%	22%	44%	33%						
	APP/DEPART	13	/	14	15	/	11	11	/	15	9	/	8	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	5	4	1	5	0	2	4	0	0	4	1	26					
	APPROACH %	0%	56%	44%	17%	83%	0%	33%	67%	0%	0%	80%	20%						
	PEAK HR FACTOR		0.450			0.500			0.500			0.417		0.722					
	APP/DEPART	9	/	8	6	/	5	6	/	9	5	/	4	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

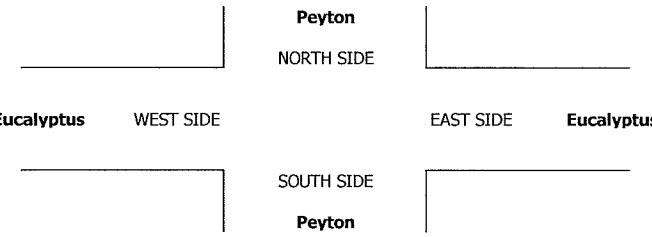
CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	3	1	0	0	0	0	0	0	4	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	2	0	2	0	0	0	0	0	4	0	0	0	0	0
	8:30 AM	0	0	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	0
	8:45 AM	0	1	0	2	1	0	0	0	0	0	1	0	5	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	0	3	8	3	4	1	0	0	1	0	22	0	0	0	0	0
	APPROACH %	0%	100%	0%	21%	57%	21%	80%	20%	0%	0%	100%	0%						
	APP/DEPART	2	/	6	14	/	8	5	/	4	1	/	4	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	1	0	3	5	0	2	1	0	0	1	0	13					
	APPROACH %	0%	100%	0%	38%	63%	0%	67%	33%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.667			0.375			0.250		0.650					
	APP/DEPART	1	/	3	8	/	5	3	/	4	1	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0
	4:45 PM	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	VOLUMES	0	5	0	0	0	0	3	0	0	0	0	1	9	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%						
	APP/DEPART	5	/	9	0	/	0	3	/	0	1	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	2	0	0	0	0	3	0	0	0	0	1	6					
	APPROACH %	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.500			0.000			0.750			0.250		0.750					
	APP/DEPART	2	/	6	0	/	0	3	/	0	1	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

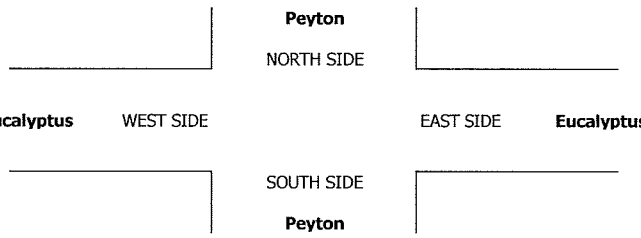
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	2	0	0	1	0	0	0	0	0	1	0	4	0	0	0	0	0
	7:15 AM	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0
	7:30 AM	0	1	0	0	1	2	0	0	0	0	0	1	5	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	4	0	0	5	3	0	0	0	0	2	1	15	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	63%	38%	0%	0%	0%	0%	67%	33%						
	APP/DEPART	4	/	5	8	/	5	0	/	0	3	/	5	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	4	0	0	4	2	0	0	0	0	1	1	12					
	APPROACH %	0%	100%	0%	0%	67%	33%	0%	0%	0%	0%	50%	50%						
	PEAK HR FACTOR		0.500			0.500			0.000			0.500		0.600					
	APP/DEPART	4	/	5	6	/	4	0	/	0	2	/	3	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	0	0	0	0	1	1	0	0	1	0	5	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	0%	0%	50%	50%	0%	0%	100%	0%						
	APP/DEPART	2	/	3	0	/	0	2	/	1	1	/	1	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	2	0	0	0	0	1	1	0	0	1	0	5					
	APPROACH %	0%	100%	0%	0%	0%	0%	50%	50%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.500			0.000			0.250			0.250		0.625					
	APP/DEPART	2	/	3	0	/	0	2	/	1	1	/	1	0					



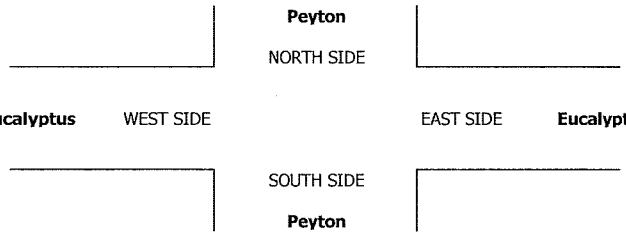
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 5:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
RV			

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	0	0	0	1	0	0	0	0	0	0	1					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250					
	APP/DEPART	0	/	0	1	/	0	0	/	0	0	/	1	0					



INTERSECTION TURNING MOVEMENT COUNTS

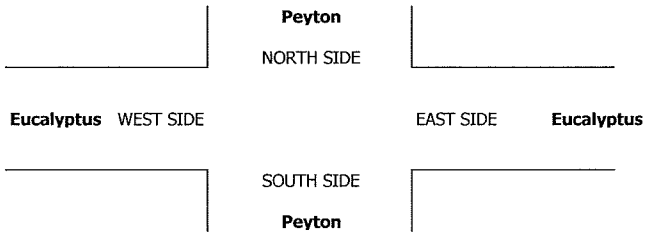
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/15/16	NORTH & SOUTH:	Peyton	LOCATION #:	1
THURSDAY	EAST & WEST:	Eucalyptus	CONTROL:	SIGNAL

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Eucalyptus)			WESTBOUND (Eucalyptus)				U-TURNS				
	LANES:	NL 1	NT 3	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 0.5	WR 1.5	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	2	0	0	2	1	0	0	0	0	0	0	5	0	0	0	0	0
	7:15 AM	0	0	1	0	1	0	1	0	0	0	0	1	4	0	0	0	0	0
	7:30 AM	0	3	0	0	1	0	0	0	0	0	1	0	5	0	0	0	0	0
	7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:00 AM	0	2	2	1	1	1	0	0	0	0	0	0	7	0	0	0	0	0
	8:15 AM	0	0	0	0	1	0	0	1	0	0	1	0	3	0	0	0	0	0
	8:30 AM	0	1	0	0	0	0	0	2	0	0	0	1	4	0	0	0	0	0
	8:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	9	3	1	7	2	1	4	0	0	2	2	31	0	0	0	0	0
	APPROACH %	0%	75%	25%	10%	70%	20%	20%	80%	0%	0%	50%	50%						
	APP/DEPART	12	/	12	10	/	7	5	/	8	4	/	4	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	5	3	1	4	1	1	0	0	0	1	1	17					
	APPROACH %	0%	63%	38%	17%	67%	17%	100%	0%	0%	0%	50%	50%						
	PEAK HR FACTOR		0.500			0.500			0.250			0.500		0.607					
	APP/DEPART	8	/	7	6	/	4	1	/	4	2	/	2	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0
	4:45 PM	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
	VOLUMES	0	3	2	0	3	1	1	0	0	0	1	0	11	0	0	0	0	0
	APPROACH %	0%	60%	40%	0%	75%	25%	100%	0%	0%	0%	100%	0%						
	APP/DEPART	5	/	4	4	/	3	1	/	2	1	/	2	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	2	2	0	2	0	1	0	0	0	0	0	7					
	APPROACH %	0%	50%	50%	0%	100%	0%	100%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.500			0.500			0.250			0.000		0.875					
	APP/DEPART	4	/	3	2	/	2	1	/	2	0	/	0	0					



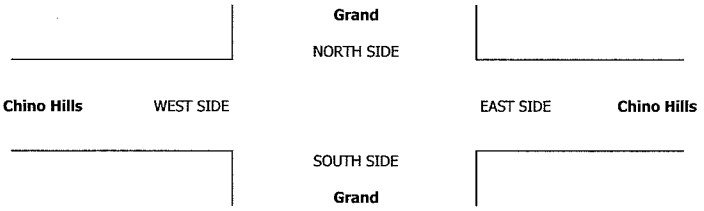
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

	NOTES:									AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / S ▼ / E ►
PCE Adjusted	Class	1	2	3	4	5	6				
	Factor	1	1.5	2	3	1.5	1.5				

	NORTHBOUND (Grand)			SOUTHBOUND (Grand)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
7:00 AM	15	39	5	18	229	18	27	30	31	127	146	13	695					0
7:15 AM	27	59	10	34	208	29	26	42	46	127	168	76	851					0
7:30 AM	40	43	13	48	188	43	21	43	61	135	147	40	821					0
7:45 AM	22	58	15	51	221	26	13	61	77	134	151	20	847					0
8:00 AM	19	75	26	15	158	31	50	74	60	116	144	31	796					0
8:15 AM	32	56	29	33	136	46	21	62	51	85	123	22	694					0
8:30 AM	29	58	25	18	163	36	20	46	37	89	113	27	658					0
8:45 AM	23	68	24	29	157	11	16	52	38	117	104	16	653					0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
VOLUMES	207	454	146	245	1,458	239	193	407	400	928	1,095	243	6,012	0	0	0	0	0
APPROACH %	26%	56%	18%	13%	75%	12%	19%	41%	40%	41%	48%	11%						
APP/DEPART	806	/	890	1,942	/	2,786	1,000	/	798	2,265	/	1,540	0					
BEGIN PEAK HR		7:15 AM																
VOLUMES	108	235	64	148	774	128	110	219	244	511	610	167	3,313					
APPROACH %	27%	58%	16%	14%	74%	12%	19%	38%	43%	40%	47%	13%						
PEAK HR FACTOR		0.848			0.883			0.781			0.868		0.974					
APP/DEPART	406	/	511	1,049	/	1,528	572	/	430	1,287	/	845	0					
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
4:00 PM	30	250	51	30	103	14	26	110	15	26	85	18	758					0
4:15 PM	31	192	54	38	70	28	11	91	10	29	56	22	629					0
4:30 PM	34	207	73	29	81	18	22	96	14	21	56	16	663					0
4:45 PM	31	213	61	38	74	20	26	109	14	37	64	25	710					0
5:00 PM	33	228	81	48	87	22	36	137	21	32	56	17	796					0
5:15 PM	31	233	67	37	92	22	27	110	18	46	83	22	787					0
5:30 PM	45	239	62	37	89	19	27	134	29	33	76	15	804					0
5:45 PM	35	211	78	38	105	20	39	158	22	44	66	26	841					0
VOLUMES	269	1,771	526	294	699	162	214	943	142	267	541	161	5,987	0	0	0	0	0
APPROACH %	10%	69%	20%	25%	61%	14%	16%	73%	11%	28%	56%	17%						
APP/DEPART	2,565	/	2,145	1,155	/	1,108	1,299	/	1,763	968	/	972	0					
BEGIN PEAK HR		5:00 PM																
VOLUMES	144	910	287	160	373	83	129	538	90	155	281	80	3,227					
APPROACH %	11%	68%	21%	26%	61%	13%	17%	71%	12%	30%	54%	16%						
PEAK HR FACTOR		0.971			0.949			0.864			0.855		0.959					
APP/DEPART	1,341	/	1,119	615	/	617	757	/	985	515	/	507	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

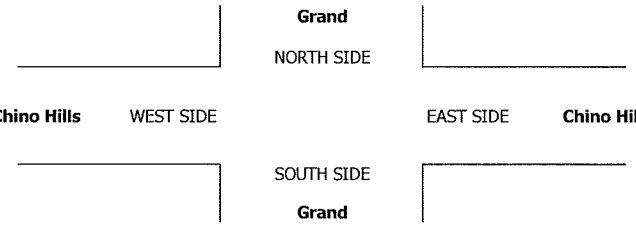
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	15	37	2	18	218	18	25	28	31	125	141	11	669	0	1	0	0	1
	7:15 AM	27	57	10	31	205	29	26	37	46	119	168	76	831	0	2	0	0	2
	7:30 AM	37	43	13	48	171	41	21	43	61	133	144	37	792	1	1	0	0	2
	7:45 AM	20	58	15	43	207	26	13	56	74	131	148	18	809	1	3	0	0	4
	8:00 AM	19	66	21	15	147	29	50	69	51	108	134	25	734	0	0	0	0	0
	8:15 AM	32	56	26	28	131	46	19	57	43	82	123	18	661	0	2	0	0	2
	8:30 AM	26	56	20	18	155	34	18	43	35	86	111	25	627	0	1	0	0	1
	8:45 AM	23	63	22	23	141	11	16	41	35	112	102	13	602	1	1	0	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	199	436	129	224	1,375	234	188	374	376	896	1,071	223	5,725	3	11	0	0	14
	APPROACH %	26%	57%	17%	12%	75%	13%	20%	40%	40%	41%	49%	10%						
	APP/DEPART	764	/	858	1,833	/	2,650	938	/	716	2,190	/	1,501	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	101	224	59	131	730	125	110	205	232	491	594	156	3,166					
	APPROACH %	26%	58%	15%	13%	74%	13%	20%	37%	42%	40%	48%	13%						
	PEAK HR FACTOR		0.910			0.899			0.804			0.855		0.952					
	APP/DEPART	386	/	496	992	/	1,455	547	/	395	1,241	/	820	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	30	244	48	30	100	14	26	104	12	26	82	18	734	2	6	0	0	8
	4:15 PM	29	184	49	36	65	28	11	89	10	29	50	22	602	0	4	0	0	4
	4:30 PM	31	196	65	29	79	16	22	88	12	19	54	14	625	0	2	0	0	2
	4:45 PM	26	201	61	35	69	18	26	109	12	35	56	25	673	0	4	0	0	4
	5:00 PM	31	220	76	48	87	22	36	130	21	32	53	17	773	0	9	0	0	9
	5:15 PM	31	227	67	37	92	22	25	108	18	38	77	19	761	1	6	0	1	8
	5:30 PM	42	222	60	37	86	16	27	131	29	33	68	15	766	2	3	0	0	5
	5:45 PM	30	206	72	36	100	20	39	155	22	44	60	26	810	0	3	0	0	3
	VOLUMES	250	1,700	498	288	678	156	212	914	136	256	500	156	5,744	5	37	0	1	43
	APPROACH %	10%	69%	20%	26%	60%	14%	17%	72%	11%	28%	55%	17%						
	APP/DEPART	2,448	/	2,105	1,122	/	1,074	1,262	/	1,664	912	/	901	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	131	875	275	137	365	80	127	524	90	146	258	77	3,110					
	APPROACH %	10%	68%	21%	23%	61%	13%	17%	71%	12%	30%	54%	16%						
	PEAK HR FACTOR		0.982			0.960			0.858			0.899		0.960					
	APP/DEPART	1,284	/	1,100	603	/	604	741	/	937	482	/	469	0					



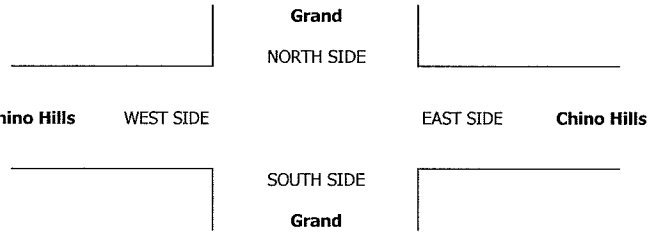
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / (N) / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Grand)			SOUTHBOUND (Grand)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	1	0	0	7	0	0	1	0	1	1	0	11	0	0	0	0	0
	7:15 AM	0	1	0	0	2	0	0	3	0	5	0	0	11	0	0	0	0	0
	7:30 AM	2	0	0	0	9	1	0	0	0	1	2	1	16	0	0	0	0	0
	7:45 AM	1	0	0	3	5	0	0	3	2	2	2	1	19	0	0	0	0	0
	8:00 AM	0	4	3	0	5	1	0	2	3	5	4	1	28	0	0	0	0	0
	8:15 AM	0	0	2	2	2	0	0	3	4	2	0	0	15	0	0	0	0	0
	8:30 AM	2	1	3	0	4	1	1	2	0	2	1	0	17	0	0	0	0	0
	8:45 AM	0	1	1	2	8	0	0	7	2	3	1	2	27	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	5	8	9	7	42	3	1	21	11	21	11	5	144	0	0	0	0	0
	APPROACH %	23%	36%	41%	13%	81%	6%	3%	64%	33%	57%	30%	14%						
	APP/DEPART	22	/	14	52	/	74	33	/	37	37	/	19	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	2	6	9	4	19	2	1	14	9	12	6	3	87					
	APPROACH %	12%	35%	53%	16%	76%	8%	4%	58%	38%	57%	29%	14%						
	PEAK HR FACTOR		0.607			0.625			0.667			0.525		0.777					
	APP/DEPART	17	/	10	25	/	40	24	/	27	21	/	10	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	2	0	2	0	0	4	2	0	2	0	16	0	0	0	0	0
	4:15 PM	1	5	2	1	3	0	0	1	0	0	4	0	17	0	0	0	0	0
	4:30 PM	2	7	4	0	0	1	0	5	1	1	1	1	23	0	0	0	0	0
	4:45 PM	3	8	0	0	3	1	0	0	1	1	3	0	20	0	0	0	0	0
	5:00 PM	1	5	3	0	0	0	0	3	0	0	2	0	14	0	0	0	0	0
	5:15 PM	0	4	0	0	0	0	1	1	0	5	4	2	17	0	0	0	0	0
	5:30 PM	2	11	1	0	2	2	0	2	0	0	5	0	25	0	0	0	0	0
	5:45 PM	2	2	4	1	3	0	0	2	0	0	4	0	18	0	0	0	0	0
	VOLUMES	11	46	16	2	13	4	1	18	4	7	25	3	150	0	0	0	0	0
	APPROACH %	15%	63%	22%	11%	68%	21%	4%	78%	17%	20%	71%	9%						
	APP/DEPART	73	/	50	19	/	24	23	/	36	35	/	40	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	6	28	4	0	5	3	1	6	1	6	14	2	76					
	APPROACH %	16%	74%	11%	0%	63%	38%	13%	75%	13%	27%	64%	9%						
	PEAK HR FACTOR		0.679			0.500			0.333			0.500		0.760					
	APP/DEPART	38	/	31	8	/	12	8	/	10	22	/	23	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grand)			SOUTHBOUND (Grand)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)			
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	2	0	1	0	3
	8:15 AM	0	0	0	0	1	0	0	0	1	0	0	1	3
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	4	0	0	0	3	0	2	1	10
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	67%	33%	
	APP/DEPART	0	/	1	4	/	7	3	/	0	3	/	2	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	0	0	0	0	4	0	0	0	3	0	1	1	9
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	50%	50%	
	PEAK HR FACTOR		0.000			0.500			0.375			0.500		0.750
	APP/DEPART	0	/	1	4	/	7	3	/	0	2	/	1	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	1	1	0	0	0	0	0	0	0	0	0	0	2
	VOLUMES	1	1	1	0	0	0	0	1	0	0	1	0	5
	APPROACH %	33%	33%	33%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	3	/	1	0	/	0	1	/	2	1	/	2	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	1	1	0	0	0	0	0	1	0	0	0	0	3
	APPROACH %	50%	50%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.250			0.000			0.250			0.000		0.375
	APP/DEPART	2	/	1	0	/	0	1	/	1	0	/	1	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
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0	0	0	0	0	
0	0	0	0	0	
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0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

Grand

NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE

Grand

INTERSECTION TURNING MOVEMENT COUNTS

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

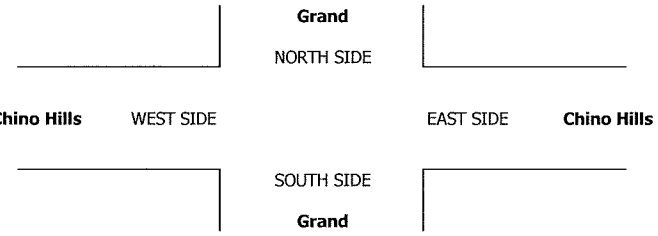
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grand)			SOUTHBOUND (Grand)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0
	8:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	3	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	1	1	4	0	0	0	0	0	0	1	9	0	0	0	0	0
	APPROACH %	0%	67%	33%	20%	80%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	3	/	3	5	/	4	0	/	2	1	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	1	0	0	4	0	0	0	0	0	0	1	6					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.250			0.500			0.000			0.250		0.500					
	APP/DEPART	1	/	2	4	/	4	0	/	0	1	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	1	/	0	0	/	1	0	/	0	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	0	1	0	0	0	0	0	0	0	0	1					
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250					
	APP/DEPART	0	/	0	1	/	0	0	/	1	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

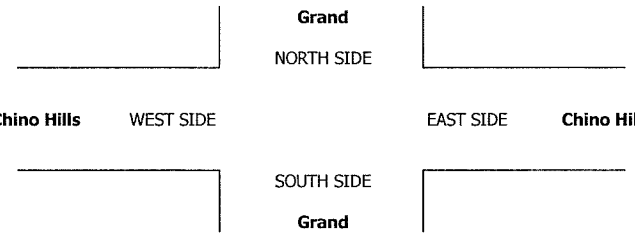
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 5:	NOTES:
RV	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Grand)			SOUTHBOUND (Grand)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

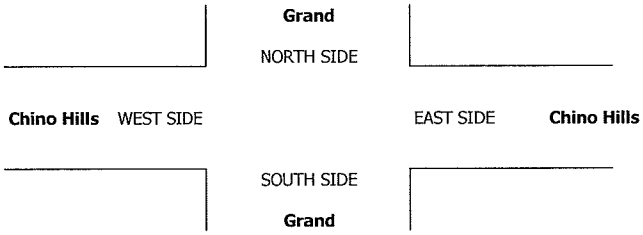
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Grand	LOCATION #:	5
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 6:	NOTES:
BUSES	

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Grand			SOUTHBOUND Grand			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	1	0	0	0	1	1	3	0	0	0	0	0
	7:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	7:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	1	0	0	1	1	3	0	0	0	0	0
	8:15 AM	0	0	0	1	0	0	1	0	0	0	0	1	3	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	5	0	0	2	1	1	0	2	5	16	0	0	0	0	0
	APPROACH %	0%	0%	0%	100%	0%	0%	50%	25%	25%	0%	29%	71%						
	APP/DEPART	0	/	7	5	/	1	4	/	6	7	/	2	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	0	0	3	0	0	1	1	1	0	1	3	10					
	APPROACH %	0%	0%	0%	100%	0%	0%	33%	33%	33%	0%	25%	75%						
	PEAK HR FACTOR		0.000			0.375			0.750			0.500		0.833					
	APP/DEPART	0	/	4	3	/	1	3	/	4	4	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	1	0	0	0	0	0	1	0	3	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%						
	APP/DEPART	1	/	0	1	/	1	0	/	1	1	/	1	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	1	0	1	0	0	0	0	0	1	0	3					
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.250			0.000			0.250		0.750					
	APP/DEPART	1	/	0	1	/	1	0	/	1	1	/	1	0					



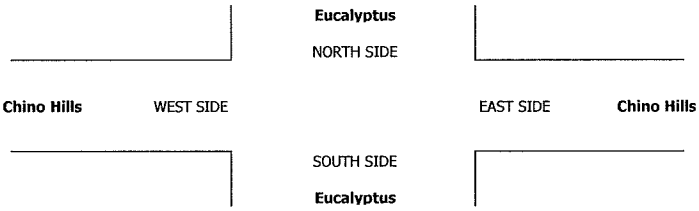
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

	NOTES:									AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
PCE Adjusted	Class	1	2	3	4	5	6				
	Factor	1	1.5	2	3	1.5	1.5				

		NORTHBOUND Eucalyptus			SOUTHBOUND Eucalyptus			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	47	48	49	73	37	86	40	82	2	37	190	14	703					0
	7:15 AM	57	17	49	77	32	80	26	102	12	55	239	20	764					0
	7:30 AM	39	26	35	36	41	56	19	97	16	49	197	4	612					0
	7:45 AM	32	16	25	34	11	43	28	118	9	25	155	12	505					0
	8:00 AM	34	15	27	31	19	40	28	114	10	33	151	8	507					0
	8:15 AM	41	41	39	26	26	37	41	100	12	37	132	18	548					0
	8:30 AM	31	46	39	12	39	44	32	90	12	39	136	12	531					0
	8:45 AM	29	23	15	29	24	25	37	90	16	35	120	6	446					0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	VOLUMES	308	231	275	316	227	409	250	792	88	308	1,318	94	4,614	0	0	0	0	0
	APPROACH %	38%	28%	34%	33%	24%	43%	22%	70%	8%	18%	77%	5%						
	APP/DEPART	814	/	575	951	/	623	1,129	/	1,382	1,720	/	2,034	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	174	107	156	219	120	265	113	398	38	165	780	50	2,583					
	APPROACH %	40%	24%	36%	36%	20%	44%	21%	73%	7%	17%	78%	5%						
	PEAK HR FACTOR		0.763			0.772			0.888			0.794		0.846					
	APP/DEPART	437	/	269	604	/	323	549	/	773	995	/	1,218	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	4:00 PM	13	20	12	12	38	25	49	163	26	43	112	30	540					0
	4:15 PM	9	23	18	8	35	22	49	165	19	35	97	22	502					0
	4:30 PM	13	22	15	15	39	32	48	176	17	37	83	17	511					0
	4:45 PM	10	38	14	14	49	29	45	195	27	35	107	20	581					0
	5:00 PM	15	27	15	11	30	40	60	188	33	44	109	22	592					0
	5:15 PM	14	35	12	15	36	41	70	171	37	40	134	29	633					0
	5:30 PM	11	35	17	2	37	30	67	159	31	44	131	23	586					0
	5:45 PM	9	35	13	13	44	38	78	210	16	49	122	23	649					0
	VOLUMES	93	234	115	89	307	256	465	1,425	205	325	895	185	4,592	0	0	0	0	0
	APPROACH %	21%	53%	26%	14%	47%	39%	22%	68%	10%	23%	64%	13%						
	APP/DEPART	442	/	884	651	/	837	2,095	/	1,628	1,405	/	1,243	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	48	132	57	41	147	149	275	727	117	176	496	96	2,459					
	APPROACH %	20%	56%	24%	12%	44%	44%	25%	65%	10%	23%	65%	13%						
	PEAK HR FACTOR		0.946			0.886			0.921			0.948		0.948					
	APP/DEPART	237	/	503	337	/	440	1,119	/	825	768	/	692	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

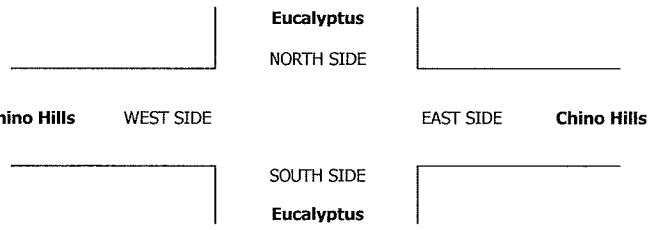
CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ | ◄ W | E ► | S ▼

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	42	42	47	70	34	84	40	79	2	31	181	14	666	0	0	1	3	4
	7:15 AM	57	14	41	72	29	80	26	87	10	47	226	20	709	0	0	0	12	12
	7:30 AM	39	24	30	33	36	56	17	92	14	43	189	4	577	0	0	0	8	8
	7:45 AM	30	13	20	32	9	41	28	110	9	20	152	12	476	0	0	0	0	0
	8:00 AM	32	15	22	26	19	38	25	106	8	27	141	8	467	0	0	0	1	1
	8:15 AM	41	41	36	24	24	35	38	91	9	32	127	18	516	0	0	0	1	1
	8:30 AM	26	40	36	12	37	42	29	81	9	36	133	12	493	0	0	0	0	0
	8:45 AM	26	18	13	24	21	23	35	84	13	33	120	6	416	0	0	1	1	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	293	207	245	293	209	399	238	730	74	269	1,269	94	4,320	0	0	2	26	28
	APPROACH %	39%	28%	33%	33%	23%	44%	23%	70%	7%	16%	78%	6%						
	APP/DEPART	745	/	537	901	/	526	1,042	/	1,294	1,632	/	1,963	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	168	93	138	207	108	261	110	368	35	118	748	50	2,428					
	APPROACH %	42%	23%	35%	36%	19%	45%	21%	72%	7%	13%	80%	5%						
	PEAK HR FACTOR		0.761			0.766			0.874			0.801		0.856					
	APP/DEPART	399	/	253	576	/	261	514	/	736	939	/	1,178	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	10	17	10	10	38	23	47	149	24	41	109	30	508	0	0	2	3	5
	4:15 PM	9	23	15	8	35	22	47	156	19	35	88	22	479	0	0	0	6	6
	4:30 PM	10	22	13	13	37	28	45	166	17	35	77	17	480	0	0	1	4	5
	4:45 PM	10	36	11	12	47	29	45	190	27	35	104	20	566	0	0	0	8	8
	5:00 PM	13	27	15	11	30	40	57	185	31	42	103	20	574	0	0	2	5	7
	5:15 PM	12	35	12	15	36	41	70	165	37	37	123	29	612	0	0	1	3	4
	5:30 PM	8	33	17	2	37	28	67	154	31	39	131	20	567	0	0	0	1	1
	5:45 PM	9	35	13	13	41	38	78	208	16	47	117	21	636	0	0	0	1	1
	VOLUMES	81	228	106	84	301	249	456	1,373	202	311	852	179	4,422	0	0	6	31	37
	APPROACH %	20%	55%	26%	13%	47%	39%	22%	68%	10%	23%	63%	13%						
	APP/DEPART	415	/	857	634	/	783	2,031	/	1,594	1,342	/	1,188	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	42	130	57	41	144	147	269	712	115	155	474	90	2,389					
	APPROACH %	18%	57%	25%	12%	43%	44%	24%	65%	10%	21%	65%	12%						
	PEAK HR FACTOR		0.970			0.902			0.910			0.959		0.939					
	APP/DEPART	229	/	489	332	/	414	1,099	/	820	729	/	666	0					



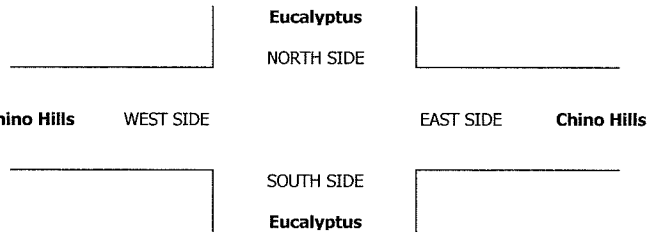
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	2	4	1	2	0	1	0	1	0	3	3	0	17	0	0	0	0	0
	7:15 AM	0	2	4	3	1	0	0	8	1	5	7	0	31	0	0	0	0	0
	7:30 AM	0	0	3	2	2	0	1	3	1	4	3	0	19	0	0	0	0	0
	7:45 AM	1	2	2	1	1	0	0	3	0	3	2	0	15	0	0	0	0	0
	8:00 AM	1	0	3	3	0	0	2	4	1	4	1	0	19	0	0	0	0	0
	8:15 AM	0	0	2	1	1	0	2	6	2	3	1	0	18	0	0	0	0	0
	8:30 AM	3	1	0	0	1	1	2	6	2	2	2	0	20	0	0	0	0	0
	8:45 AM	2	3	1	3	2	1	1	4	2	1	0	0	20	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	9	12	16	15	8	3	8	35	9	25	19	0	159	0	0	0	0	0
	APPROACH %	24%	32%	43%	58%	31%	12%	15%	67%	17%	57%	43%	0%						
	APP/DEPART	37	/	20	26	/	42	52	/	66	44	/	31	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	2	4	12	9	4	0	3	18	3	16	13	0	84					
	APPROACH %	11%	22%	67%	69%	31%	0%	13%	75%	13%	55%	45%	0%						
	PEAK HR FACTOR		0.750			0.813			0.667			0.604		0.677					
	APP/DEPART	18	/	7	13	/	23	24	/	39	29	/	15	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	2	1	1	0	1	1	8	1	1	2	0	20	0	0	0	0	0
	4:15 PM	0	0	2	0	0	0	1	5	0	0	6	0	14	0	0	0	0	0
	4:30 PM	2	0	1	0	1	1	2	5	0	1	3	0	16	0	0	0	0	0
	4:45 PM	0	1	2	1	1	0	0	3	0	0	2	0	10	0	0	0	0	0
	5:00 PM	1	0	0	0	0	0	2	2	1	1	4	1	12	0	0	0	0	0
	5:15 PM	1	0	0	0	0	0	0	4	0	2	7	0	14	0	0	0	0	0
	5:30 PM	2	1	0	0	0	1	0	3	0	2	0	2	11	0	0	0	1	1
	5:45 PM	0	0	0	0	1	0	0	1	0	1	2	1	6	0	0	0	1	1
	VOLUMES	8	4	6	2	3	3	6	31	2	8	26	4	103	0	0	0	2	2
	APPROACH %	44%	22%	33%	25%	38%	38%	15%	79%	5%	21%	68%	11%						
	APP/DEPART	18	/	14	8	/	11	39	/	41	38	/	37	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	4	3	6	2	2	2	4	21	1	2	13	0	60					
	APPROACH %	31%	23%	46%	33%	33%	33%	15%	81%	4%	13%	87%	0%						
	PEAK HR FACTOR		0.650			0.750			0.650			0.625		0.750					
	APP/DEPART	13	/	7	6	/	5	26	/	29	15	/	19	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

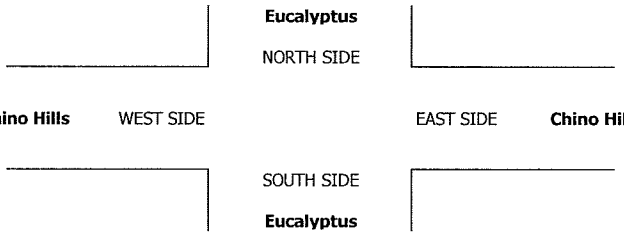
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	0	0	0	0	4	0	5	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	1	/	0	0	/	0	4	/	5	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	0	1	0	0	0	0	3	0	4					
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.375		0.500					
	APP/DEPART	0	/	0	1	/	0	0	/	0	3	/	4	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	VOLUMES	0	0	0	0	0	1	0	1	0	1	1	0	4	0	0	0	1	1
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	50%	50%	0%						
	APP/DEPART	0	/	0	1	/	0	1	/	2	2	/	2	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	2					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.500		0.250					
	APP/DEPART	0	/	0	0	/	0	0	/	1	2	/	1	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	1	0	0	0	0	0	1	0	3	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	100%	0%						
	APP/DEPART	1	/	0	1	/	1	0	/	1	1	/	1	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	1	0	0	0	0	0	1	0	2					
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.250		0.500					
	APP/DEPART	0	/	0	1	/	1	0	/	0	1	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					

Eucalyptus

NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE

Eucalyptus

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 5:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
RV			

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		3:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS					
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Eucalyptus	LOCATION #:	1
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 6:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
BUSES			

		NORTHBOUND (Eucalyptus)			SOUTHBOUND (Eucalyptus)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)			
	LANES:	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL
AM	7:00 AM	1	0	0	0	0	0	0	1	0	1	0	0	3
	7:15 AM	0	0	1	0	1	0	0	2	0	0	0	0	4
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:45 AM	0	0	1	0	0	0	0	2	0	0	0	0	3
	8:00 AM	0	0	0	0	0	1	0	1	0	0	4	0	6
	8:15 AM	0	0	0	0	0	1	0	0	0	0	2	0	3
	8:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	4	2	0	2	2	0	6	0	1	6	0	24
	APPROACH %	14%	57%	29%	0%	50%	50%	0%	100%	0%	14%	86%	0%	
	APP/DEPART	7	/	4	4	/	3	6	/	8	7	/	9	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	3	1	0	0	2	0	3	0	0	6	0	15
	APPROACH %	0%	75%	25%	0%	0%	100%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.333			0.500			0.375			0.375		0.625
	APP/DEPART	4	/	3	2	/	0	3	/	4	6	/	8	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
	VOLUMES	0	0	0	1	1	0	0	2	0	0	1	0	5
	APPROACH %	0%	0%	0%	50%	50%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	0	/	0	2	/	1	2	/	3	1	/	1	0
	BEGIN PEAK HR		3:45 PM											
	VOLUMES	0	0	0	1	0	0	0	2	0	0	1	0	4
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.250			0.500			0.250		0.500
	APP/DEPART	0	/	0	1	/	0	2	/	3	1	/	1	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

Eucalyptus

NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE

Eucalyptus

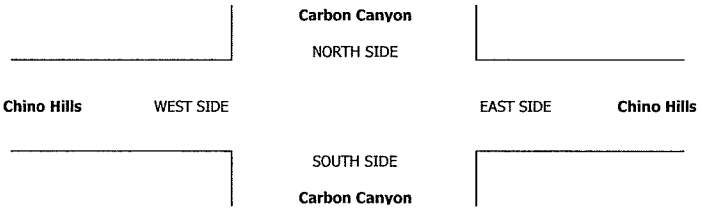
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM	▲ N	
	Factor	1	1.5	2	3	1.5	1.5			MD	◄ W	E ►
										OTHER	S ▼	
										OTHER		

	NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM 7:00 AM	44	0	72	0	4	0	7	47	156	185	203	3	720					0
7:15 AM	40	1	76	1	13	0	17	76	144	214	173	7	760					0
7:30 AM	32	0	56	0	7	0	5	77	139	239	159	4	717					0
7:45 AM	31	0	75	0	2	0	7	88	96	244	169	1	712					0
8:00 AM	32	1	63	0	4	0	3	86	97	228	139	0	652					0
8:15 AM	38	4	107	3	0	4	4	101	67	215	162	2	706					0
8:30 AM	24	0	73	4	0	0	7	81	75	263	190	2	716					0
8:45 AM	28	0	54	0	0	0	3	75	54	222	135	0	569					0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
VOLUMES	267	6	574	8	30	4	53	630	826	1,808	1,329	19	5,550	0	0	0	0	0
APPROACH %	31%	1%	68%	18%	73%	9%	3%	42%	55%	57%	42%	1%						
APP/DEPART	847	/	77	41	/	2,664	1,508	/	1,211	3,155	/	1,599	0					
BEGIN PEAK HR		7:00 AM																
VOLUMES	146	1	278	1	26	0	36	287	534	882	703	15	2,908					
APPROACH %	34%	0%	65%	4%	96%	0%	4%	33%	62%	55%	44%	1%						
PEAK HR FACTOR		0.911			0.482			0.908			0.967		0.957					
APP/DEPART	425	/	52	27	/	1,442	857	/	566	1,600	/	849	0					
PM 03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
4:00 PM	56	0	284	1	0	0	2	178	28	100	92	1	741					0
4:15 PM	64	0	326	1	0	1	3	144	28	64	100	1	730					0
4:30 PM	62	1	270	4	0	3	6	141	31	86	99	4	705					0
4:45 PM	82	0	320	3	0	0	3	172	39	64	92	3	777					0
5:00 PM	60	0	291	0	0	0	6	162	29	92	106	0	745					0
5:15 PM	78	0	295	0	0	1	5	174	38	75	121	1	787					0
5:30 PM	74	0	315	5	0	1	4	170	42	79	105	7	801					0
5:45 PM	75	0	305	2	0	0	7	184	21	76	108	2	779					0
VOLUMES	550	1	2,405	16	0	6	36	1,323	255	635	821	19	6,064	0	0	0	0	0
APPROACH %	19%	0%	81%	74%	0%	26%	2%	82%	16%	43%	56%	1%						
APP/DEPART	2,955	/	56	22	/	889	1,613	/	3,743	1,475	/	1,376	0					
BEGIN PEAK HR		5:00 PM																
VOLUMES	287	0	1,206	7	0	2	22	689	130	321	439	10	3,111					
APPROACH %	19%	0%	81%	78%	0%	22%	3%	82%	15%	42%	57%	1%						
PEAK HR FACTOR		0.959			0.375			0.971			0.974		0.971					
APP/DEPART	1,492	/	32	9	/	451	841	/	1,902	770	/	727	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

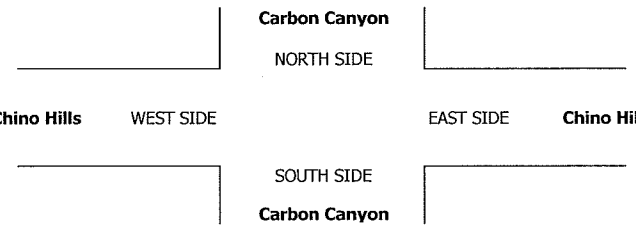
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Carbon Canyon)			SOUTHBOUND (Carbon Canyon)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	44	0	65	0	4	0	7	45	148	168	187	3	671	0	0	6	0	6
	7:15 AM	37	1	71	1	13	0	17	68	133	187	163	7	698	0	0	10	0	10
	7:30 AM	30	0	45	0	7	0	5	71	133	217	156	4	668	0	0	3	0	3
	7:45 AM	26	0	70	0	2	0	4	79	87	223	158	1	650	0	0	4	0	4
	8:00 AM	27	1	60	0	1	0	3	80	91	201	130	0	594	0	0	3	0	3
	8:15 AM	38	1	95	1	0	2	4	92	61	191	151	2	638	0	0	3	0	3
	8:30 AM	22	0	64	1	0	0	5	76	70	228	176	0	642	0	0	4	0	4
	8:45 AM	26	0	49	0	0	0	3	72	49	201	129	0	529	0	0	3	0	3
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	250	3	519	3	27	2	48	583	772	1,616	1,250	17	5,090	0	0	36	0	36
	APPROACH %	32%	0%	67%	9%	84%	6%	3%	42%	55%	56%	43%	1%						
	APP/DEPART	772	/	32	32	/	2,415	1,403	/	1,105	2,883	/	1,538	0					
	BEGIN PEAK HR	7:00 AM																	
	VOLUMES	137	1	251	1	26	0	10	263	501	795	664	15	2,687					
	APPROACH %	35%	0%	65%	4%	96%	0%	1%	33%	63%	54%	45%	1%						
	PEAK HR FACTOR	0.892			0.482			0.914			0.965			0.962					
	APP/DEPART	389	/	26	27	/	1,322	797	/	515	1,474	/	824	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	53	0	265	1	0	0	2	169	26	91	89	1	697	0	0	2	0	2
	4:15 PM	61	0	302	1	0	1	3	133	25	59	95	1	681	0	0	3	0	3
	4:30 PM	57	1	247	4	0	1	4	136	31	80	90	4	655	0	0	4	0	4
	4:45 PM	71	0	308	3	0	0	3	157	37	58	86	3	726	0	0	3	0	3
	5:00 PM	55	0	271	0	0	0	6	154	27	87	101	0	701	0	0	6	0	6
	5:15 PM	72	0	281	0	0	1	5	169	35	73	118	1	755	0	0	4	0	4
	5:30 PM	74	0	297	5	0	1	4	165	39	76	103	7	771	0	0	4	0	4
	5:45 PM	72	0	292	2	0	0	7	178	21	74	104	2	752	0	0	7	0	7
	VOLUMES	515	1	2,263	16	0	4	34	1,261	241	598	786	19	5,738	0	0	33	0	33
	APPROACH %	19%	0%	81%	80%	0%	20%	2%	82%	16%	43%	56%	1%						
	APP/DEPART	2,779	/	21	20	/	839	1,536	/	3,540	1,403	/	1,338	0					
	BEGIN PEAK HR	5:00 PM																	
	VOLUMES	273	0	1,141	7	0	2	1	666	122	310	426	10	2,979					
	APPROACH %	19%	0%	81%	78%	0%	22%	0%	82%	15%	42%	57%	1%						
	PEAK HR FACTOR	0.953			0.375			0.969			0.971			0.966					
	APP/DEPART	1,414	/	11	9	/	432	810	/	1,814	746	/	722	0					



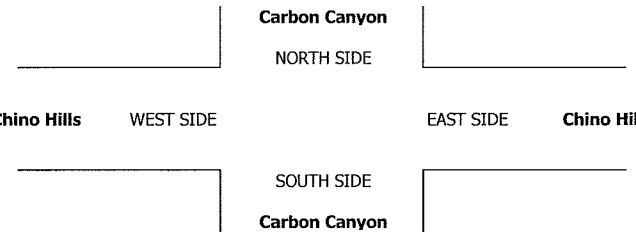
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	2	0	0	0	0	0	5	9	7	0	23	0	0	0	0	0
	7:15 AM	2	0	3	0	0	0	0	3	4	16	4	0	32	0	0	0	0	0
	7:30 AM	1	0	4	0	0	0	0	3	4	12	2	0	26	0	0	0	0	0
	7:45 AM	1	0	3	0	0	0	2	4	5	12	7	0	34	0	0	0	0	0
	8:00 AM	3	0	0	0	2	0	0	4	4	15	3	0	31	0	0	0	0	0
	8:15 AM	0	2	8	1	0	1	0	6	4	13	5	0	40	0	0	0	0	0
	8:30 AM	1	0	6	2	0	0	1	3	3	20	8	1	45	0	0	0	0	0
	8:45 AM	1	0	3	0	0	0	0	2	3	11	4	0	24	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	9	2	29	3	2	1	3	25	32	108	40	1	255	0	0	0	0	0
	APPROACH %	23%	5%	73%	50%	33%	17%	5%	42%	53%	72%	27%	1%						
	APP/DEPART	40	/	6	6	/	142	60	/	57	149	/	50	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	5	2	17	3	2	1	3	17	16	60	23	1	150					
	APPROACH %	21%	8%	71%	50%	33%	17%	8%	47%	44%	71%	27%	1%						
	PEAK HR FACTOR		0.600			0.750			0.818			0.724		0.833					
	APP/DEPART	24	/	6	6	/	78	36	/	37	84	/	29	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	2	0	10	0	0	0	0	4	1	2	2	0	21	0	0	0	0	0
	4:15 PM	2	0	13	0	0	0	0	7	0	3	3	0	28	0	0	0	0	0
	4:30 PM	1	0	14	0	0	1	1	3	0	4	5	0	29	0	0	0	0	0
	4:45 PM	5	0	8	0	0	0	0	5	1	4	4	0	27	0	0	0	0	0
	5:00 PM	3	0	6	0	0	0	0	4	1	2	3	0	19	0	0	0	0	0
	5:15 PM	4	0	8	0	0	0	0	2	2	1	2	0	19	0	0	0	0	0
	5:30 PM	0	0	11	0	0	0	0	3	2	2	1	0	19	0	0	0	0	0
	5:45 PM	2	0	7	0	0	0	0	4	0	1	1	0	15	0	0	0	0	0
	VOLUMES	19	0	77	0	0	1	1	32	7	19	21	0	177	0	0	0	0	0
	APPROACH %	20%	0%	80%	0%	0%	100%	3%	80%	18%	48%	53%	0%						
	APP/DEPART	96	/	1	1	/	26	40	/	109	40	/	41	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	10	0	45	0	0	1	1	19	2	13	14	0	105					
	APPROACH %	18%	0%	82%	0%	0%	100%	5%	86%	9%	48%	52%	0%						
	PEAK HR FACTOR		0.917			0.250			0.786			0.750		0.905					
	APP/DEPART	55	/	1	1	/	15	22	/	64	27	/	25	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

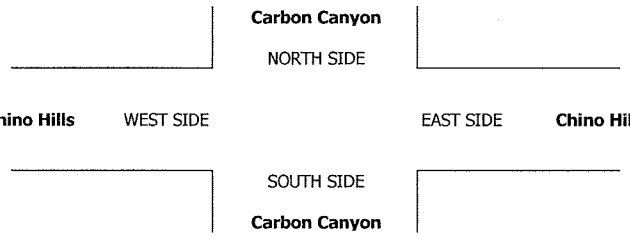
CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	2	0	0	0	0	0	0	1	2	0	5	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	0	0	0	0	0	0	8	4	0	14	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	67%	33%	0%						
	APP/DEPART	2	/	0	0	/	8	0	/	2	12	/	4	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	6	1	0	7					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	14%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.583		0.350					
	APP/DEPART	0	/	0	0	/	6	0	/	0	7	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
	5:00 PM	0	0	4	0	0	0	0	1	0	1	0	0	6	0	0	0	0	0
	5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0
	VOLUMES	0	0	10	0	0	0	0	3	0	1	1	0	15	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	50%	50%	0%						
	APP/DEPART	10	/	0	0	/	1	3	/	13	2	/	1	0					
	BEGIN PEAK HR		4:15 PM																
	VOLUMES	0	0	7	0	0	0	0	3	0	1	0	0	11					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	0%	0%						
	PEAK HR FACTOR		0.438			0.000			0.375			0.250		0.458					
	APP/DEPART	7	/	0	0	/	1	3	/	10	1	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills			
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	2
	7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	7:45 AM	1	0	0	0	0	0	0	0	0	1	0	0	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	1	0	0	0	0	0	1	3	0	0	6
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	0%	100%	100%	0%	0%	
	APP/DEPART	2	/	0	0	/	4	1	/	1	3	/	1	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	1	0	1	0	0	0	0	0	1	2	0	0	5
	APPROACH %	50%	0%	50%	0%	0%	0%	0%	0%	100%	100%	0%	0%	
	PEAK HR FACTOR		0.500			0.000			0.250			0.500		0.625
	APP/DEPART	2	/	0	0	/	3	1	/	1	2	/	1	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
	4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
	4:45 PM	1	0	0	0	0	0	0	1	0	0	0	0	2
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	0	1	0	0	0	0	1	1	2	0	0	7
	APPROACH %	67%	0%	33%	0%	0%	0%	0%	50%	50%	100%	0%	0%	
	APP/DEPART	3	/	0	0	/	3	2	/	2	2	/	2	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	0	0	0	0	0	0	1	1	2	0	0	6
	APPROACH %	100%	0%	0%	0%	0%	0%	0%	50%	50%	100%	0%	0%	
	PEAK HR FACTOR		0.500			0.000			0.500			0.250		0.750
	APP/DEPART	2	/	0	0	/	3	2	/	1	2	/	2	0

U-TURNS					
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Carbon Canyon
NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE
Carbon Canyon

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 5:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
RV			

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%						
	APP/DEPART	0	/	0	0	/	1	0	/	0	1	/	0	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	1	0	0	1					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250					
	APP/DEPART	0	/	0	0	/	1	0	/	0	1	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	1	/	0	0	/	0	0	/	1	0	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	0	1	0	0	0	0	0	0	0	0	0	1					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.250			0.000			0.000			0.000		0.250					
	APP/DEPART	1	/	0	0	/	0	0	/	1	0	/	0	0					

Carbon Canyon

NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE

Carbon Canyon

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/15/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	2
THURSDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 6: BUSES

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 1	NT 0.5	NR 1.5	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	1	1	0	3	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	2	1	0	1	0	4	0	0	0	0	0
	7:30 AM	0	0	1	0	0	0	0	1	0	1	0	0	3	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	2	1	0	0	0	3	0	0	0	0	0
	8:00 AM	0	0	2	0	0	0	0	0	0	0	3	0	5	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	3	0	0	0	0	6	2	2	7	0	20	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	75%	25%	22%	78%	0%						
	APP/DEPART	3	/	0	0	/	4	8	/	9	9	/	7	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	0	3	0	0	0	0	5	2	1	4	0	15					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	71%	29%	20%	80%	0%						
	PEAK HR FACTOR		0.375			0.000			0.583			0.417		0.750					
	APP/DEPART	3	/	0	0	/	3	7	/	8	5	/	4	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	0	0	0	3	0	0	1	0	5	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%						
	APP/DEPART	1	/	0	0	/	0	3	/	4	1	/	1	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	0	1	0	0	0	0	2	0	0	1	0	4					
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.000			0.250			0.250		0.333					
	APP/DEPART	1	/	0	0	/	0	2	/	3	1	/	1	0					

Carbon Canyon

NORTH SIDE

Chino Hills WEST SIDE EAST SIDE **Chino Hills**

SOUTH SIDE

Carbon Canyon

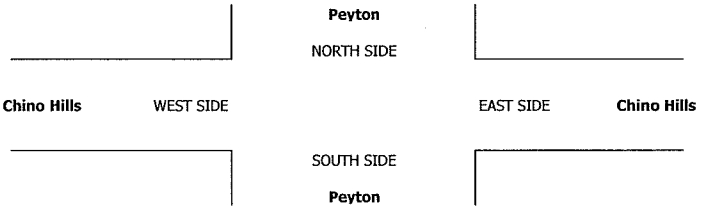
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM	▲ N	
	Factor	1	1.5	2	3	1.5	1.5			PM MD	◄ W	E ►
										OTHER	S ▼	
										OTHER		

		NORTHBOUND Peyton			SOUTHBOUND Peyton			EASTBOUND Chino Hills			WESTBOUND Chino Hills				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	99	74	87	46	32	53	38	75	11	42	235	53	842					0
	7:15 AM	119	63	96	37	36	32	27	108	13	65	210	39	844					0
	7:30 AM	116	83	80	36	49	42	17	107	23	54	219	47	870					0
	7:45 AM	87	93	78	41	40	50	34	111	12	39	210	38	829					0
	8:00 AM	89	53	67	36	42	59	23	105	24	25	180	21	722					0
	8:15 AM	76	48	57	31	28	54	44	112	36	45	243	63	834					0
	8:30 AM	105	94	84	44	37	69	38	103	24	35	255	29	914					0
	8:45 AM	95	42	75	26	27	53	32	104	32	38	203	27	751					0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	VOLUMES	784	549	622	295	290	411	251	824	173	340	1,753	315	6,605	0	0	0	0	0
	APPROACH %	40%	28%	32%	30%	29%	41%	20%	66%	14%	14%	73%	13%						
	APP/DEPART	1,955	/	1,115	995	/	803	1,248	/	1,740	2,408	/	2,948	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	420	313	340	159	156	177	115	401	59	198	873	176	3,385					
	APPROACH %	39%	29%	32%	32%	32%	36%	20%	70%	10%	16%	70%	14%						
	PEAK HR FACTOR		0.962			0.942			0.920			0.949		0.973					
	APP/DEPART	1,072	/	604	492	/	413	574	/	899	1,247	/	1,470	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	4:00 PM	34	52	44	46	66	29	100	292	70	61	114	28	933					0
	4:15 PM	33	51	47	45	75	27	65	289	75	53	123	32	913					0
	4:30 PM	38	59	42	55	93	37	56	280	88	59	100	32	936					0
	4:45 PM	35	47	41	45	84	33	70	296	80	85	115	39	968					0
	5:00 PM	37	54	43	52	75	33	70	285	98	74	121	30	970					0
	5:15 PM	57	67	39	47	90	34	66	302	98	83	105	56	1,043					0
	5:30 PM	44	61	50	55	63	31	80	284	74	79	128	44	992					0
	5:45 PM	34	71	48	49	95	44	67	306	107	61	118	42	1,039					0
	VOLUMES	311	461	353	393	640	267	572	2,332	688	554	922	302	7,792	0	0	0	0	0
	APPROACH %	28%	41%	31%	30%	49%	21%	16%	65%	19%	31%	52%	17%						
	APP/DEPART	1,124	/	1,334	1,300	/	1,882	3,592	/	3,077	1,777	/	1,500	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	172	253	180	203	323	141	283	1,177	376	297	471	171	4,044					
	APPROACH %	28%	42%	30%	30%	48%	21%	15%	64%	20%	32%	50%	18%						
	PEAK HR FACTOR		0.926			0.890			0.957			0.935		0.970					
	APP/DEPART	604	/	706	666	/	996	1,835	/	1,559	939	/	784	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

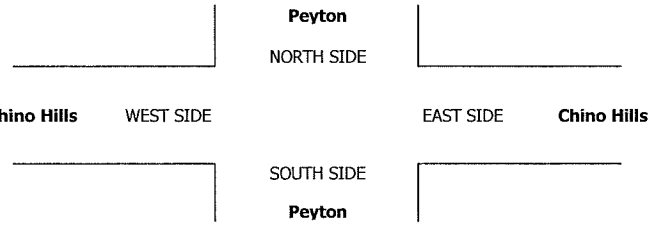
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	97	65	87	37	30	46	34	66	11	31	210	51	765	0	0	0	0	0
	7:15 AM	116	57	91	35	33	30	27	100	10	52	178	36	765	0	0	0	0	0
	7:30 AM	113	77	78	33	39	40	17	98	21	49	192	45	802	0	1	0	0	1
	7:45 AM	85	86	76	39	37	47	32	100	12	28	188	35	765	0	4	0	0	4
	8:00 AM	86	53	63	33	36	59	21	93	22	22	157	21	666	0	0	0	0	0
	8:15 AM	74	45	57	29	24	52	41	103	34	38	212	58	767	0	1	0	0	1
	8:30 AM	105	92	79	40	32	67	33	93	22	35	221	26	845	0	2	0	0	2
	8:45 AM	93	42	73	22	20	48	32	94	29	33	188	25	699	0	3	0	0	3
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	769	517	604	268	251	389	237	747	161	288	1,546	297	6,074	0	11	0	0	11
	APPROACH %	41%	27%	32%	30%	28%	43%	21%	65%	14%	14%	73%	14%						
	APP/DEPART	1,890	/	1,062	908	/	700	1,145	/	1,608	2,131	/	2,704	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	411	285	332	139	139	163	110	364	54	160	768	167	3,097					
	APPROACH %	40%	28%	32%	31%	31%	37%	21%	69%	10%	15%	70%	15%						
	PEAK HR FACTOR		0.959			0.907			0.917			0.938		0.965					
	APP/DEPART	1,028	/	567	446	/	353	528	/	835	1,095	/	1,342	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	34	49	41	42	61	27	93	251	65	53	103	24	843	0	7	0	0	7
	4:15 PM	33	49	41	42	75	27	60	263	72	48	110	30	850	0	9	0	0	9
	4:30 PM	33	57	37	50	93	37	54	256	79	57	100	32	885	0	11	0	0	11
	4:45 PM	33	47	37	45	82	33	68	273	75	79	115	33	920	0	10	0	0	10
	5:00 PM	34	52	38	50	75	33	68	263	96	74	110	27	920	0	11	0	0	11
	5:15 PM	48	67	36	44	87	32	66	280	95	80	102	54	991	0	8	1	0	9
	5:30 PM	42	61	47	52	63	31	78	265	74	79	120	44	956	0	8	0	0	8
	5:45 PM	34	71	46	49	93	42	67	294	102	61	116	40	1,015	0	9	0	0	9
	VOLUMES	291	453	323	374	629	262	554	2,145	658	531	876	284	7,380	0	73	1	0	74
	APPROACH %	27%	42%	30%	30%	50%	21%	17%	64%	20%	31%	52%	17%						
	APP/DEPART	1,067	/	1,363	1,265	/	1,818	3,357	/	2,769	1,691	/	1,430	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	158	251	167	159	318	138	278	1,102	367	294	448	165	3,882					
	APPROACH %	27%	44%	29%	24%	49%	21%	16%	63%	21%	32%	49%	18%						
	PEAK HR FACTOR		0.954			0.885			0.944			0.933		0.956					
	APP/DEPART	576	/	730	651	/	979	1,748	/	1,428	907	/	745	0					



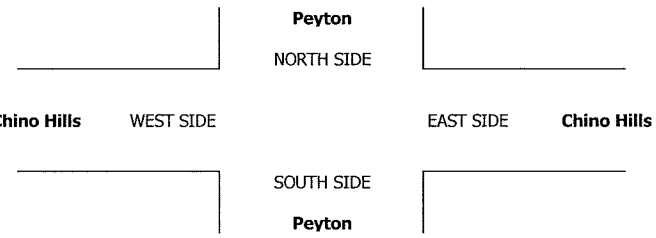
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	1	1	2	0	5	0	0	10	0	19	0	0	0	0	0
	7:15 AM	2	0	1	0	2	0	0	4	1	5	19	2	36	0	0	0	0	0
	7:30 AM	2	0	0	2	0	1	0	5	0	3	16	1	30	0	0	0	0	0
	7:45 AM	0	0	1	1	0	2	1	5	0	6	12	2	30	0	0	0	0	0
	8:00 AM	1	0	1	0	1	0	0	6	1	2	10	0	22	0	0	0	0	0
	8:15 AM	1	0	0	1	0	1	1	6	1	3	16	2	32	0	1	0	0	1
	8:30 AM	0	1	2	1	2	1	3	5	1	0	20	1	37	0	0	0	0	0
	8:45 AM	1	0	0	1	1	2	0	4	2	3	10	0	24	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	7	1	5	7	7	9	5	40	6	22	113	8	230	0	1	0	0	1
	APPROACH %	54%	8%	38%	30%	30%	39%	10%	78%	12%	15%	79%	6%						
	APP/DEPART	13	/	15	23	/	35	51	/	51	143	/	129	0					
	BEGIN PEAK HR	7:45 AM																	
	VOLUMES	2	1	4	2	3	4	5	22	3	11	58	5	121					
	APPROACH %	29%	14%	57%	20%	30%	40%	17%	73%	10%	15%	78%	7%						
	PEAK HR FACTOR	0.583			0.625			0.833			0.881			0.818					
	APP/DEPART	7	/	12	10	/	17	30	/	28	74	/	64	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	2	2	1	1	0	1	24	3	2	3	1	40	0	0	0	0	0
	4:15 PM	0	1	2	1	0	0	3	14	2	3	7	0	33	0	0	0	0	0
	4:30 PM	2	1	3	2	0	0	0	13	6	1	0	0	28	0	0	0	0	0
	4:45 PM	1	0	1	0	0	0	1	13	3	4	0	1	24	0	0	0	0	0
	5:00 PM	2	1	2	1	0	0	0	12	1	0	7	0	26	0	0	0	0	0
	5:15 PM	6	0	2	1	2	1	0	13	2	2	2	1	32	0	0	0	0	0
	5:30 PM	1	0	2	2	0	0	1	10	0	0	4	0	20	0	0	0	0	0
	5:45 PM	0	0	1	0	1	1	0	8	3	0	1	0	15	0	0	0	0	0
	VOLUMES	12	5	15	8	4	2	6	107	20	12	24	3	218	0	0	0	0	0
	APPROACH %	38%	16%	47%	57%	29%	14%	5%	80%	15%	31%	62%	8%						
	APP/DEPART	32	/	14	14	/	36	133	/	130	39	/	38	0					
	BEGIN PEAK HR	4:00 PM																	
	VOLUMES	3	4	8	4	1	0	5	64	14	10	10	2	125					
	APPROACH %	20%	27%	53%	80%	20%	0%	6%	77%	17%	45%	45%	9%						
	PEAK HR FACTOR	0.625			0.625			0.741			0.550			0.781					
	APP/DEPART	15	/	11	5	/	25	83	/	76	22	/	13	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

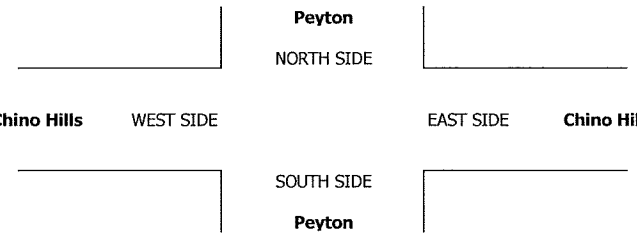
CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	2	0	2	1	0	0	3	4	0	12	0	0	0	0	0
	7:15 AM	0	0	0	1	0	1	0	1	0	1	1	0	5	0	0	0	0	0
	7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:45 AM	0	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0
	8:00 AM	0	0	1	0	0	0	0	0	0	0	3	0	4	0	0	0	0	0
	8:15 AM	0	0	0	0	2	0	0	0	0	1	1	0	4	0	0	0	0	0
	8:30 AM	0	0	1	1	1	0	0	1	0	0	2	0	6	0	0	0	0	0
	8:45 AM	0	0	0	1	1	1	0	2	0	0	0	0	5	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	2	5	5	4	1	4	0	5	12	0	39	0	0	0	0	0
	APPROACH %	0%	33%	67%	36%	36%	29%	20%	80%	0%	29%	71%	0%						
	APP/DEPART	3	/	2	14	/	10	5	/	11	17	/	16	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	1	0	3	1	3	1	1	0	4	6	0	20					
	APPROACH %	0%	100%	0%	43%	14%	43%	50%	50%	0%	40%	60%	0%						
	PEAK HR FACTOR		0.250			0.438			0.500			0.357		0.417					
	APP/DEPART	1	/	2	7	/	5	2	/	4	10	/	9	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	1	2	1	0	0	0	1	6	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
	4:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:00 PM	0	0	1	0	0	0	1	2	0	0	0	0	4	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	2	1	1	1	3	8	0	0	2	2	20	0	0	0	0	0
	APPROACH %	0%	0%	100%	33%	33%	33%	27%	73%	0%	0%	50%	50%						
	APP/DEPART	2	/	5	3	/	1	11	/	11	4	/	3	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	1	1	1	1	2	3	0	0	1	2	12					
	APPROACH %	0%	0%	100%	33%	33%	33%	40%	60%	0%	0%	33%	67%						
	PEAK HR FACTOR		0.250			0.375			0.417			0.375		0.500					
	APP/DEPART	1	/	4	3	/	1	5	/	5	3	/	2	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

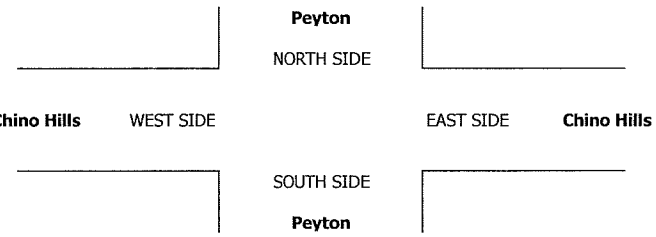
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
	7:15 AM	0	2	0	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0
	7:30 AM	0	1	0	0	2	0	0	0	0	0	1	0	4	0	0	0	0	0
	7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	7	0	0	5	0	0	0	0	1	1	0	14	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	50%	50%	0%						
	APP/DEPART	7	/	7	5	/	6	0	/	0	2	/	1	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	6	0	0	3	0	0	0	0	1	1	0	11					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	50%	50%	0%						
	PEAK HR FACTOR		0.500			0.375			0.000			0.500		0.688					
	APP/DEPART	6	/	6	3	/	4	0	/	0	2	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	1	0	0	0	0	1	2	0	4	0	0	0	0	0
	4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	1	0	0	1	0	1	2	2	8	0	0	0	0	0
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	100%	0%	20%	40%	40%						
	APP/DEPART	1	/	2	1	/	2	1	/	2	5	/	2	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	0	0	1	0	1	0	0	1	0	1	2	1	7					
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	100%	0%	25%	50%	25%						
	PEAK HR FACTOR		0.250			0.250			0.250			0.333		0.438					
	APP/DEPART	1	/	1	1	/	2	1	/	2	4	/	2	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

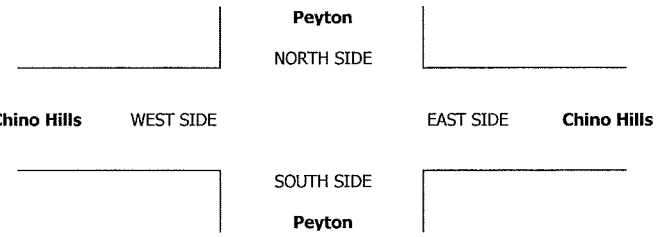
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	1	0	1					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.250		0.250					
	APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					



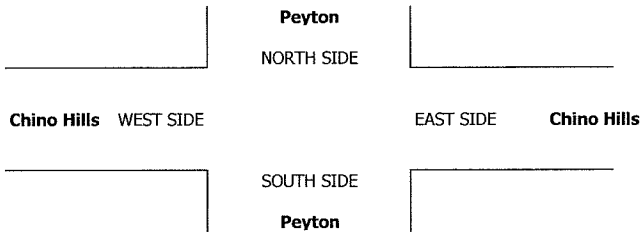
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1070
9/13/16	NORTH & SOUTH:	Peyton	LOCATION #:	3
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 6:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
BUSES			

		NORTHBOUND (Peyton)			SOUTHBOUND (Peyton)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 2	NT 2	NR 0	SL 1	ST 2	SR 1	EL 2	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	1	0	0	2	0	0	1	1	0	3	1	1	10	0	0	0	0	0
	7:15 AM	0	0	2	0	0	0	0	0	1	0	1	0	4	0	0	0	0	0
	7:30 AM	0	2	1	0	1	0	0	1	1	0	0	0	6	0	0	0	0	0
	7:45 AM	1	3	0	0	0	0	0	2	0	1	1	0	8	0	0	0	0	0
	8:00 AM	1	0	0	2	1	0	1	2	0	0	1	0	8	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	1	0	0	0	2	1	4	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	8:45 AM	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	3	5	4	4	2	0	3	6	2	4	6	4	43	0	0	0	0	0
	APPROACH %	25%	42%	33%	67%	33%	0%	27%	55%	18%	29%	43%	29%						
	APP/DEPART	12	/	12	6	/	8	11	/	14	14	/	9	0					
	BEGIN PEAK HR	7:00 AM																	
	VOLUMES	2	5	3	2	1	0	1	4	2	4	3	1	28					
	APPROACH %	20%	50%	30%	67%	33%	0%	14%	57%	29%	50%	38%	13%						
	PEAK HR FACTOR		0.625			0.375			0.875			0.400		0.700					
	APP/DEPART	10	/	7	3	/	7	7	/	9	8	/	5	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	1	2	0	1	0	0	4	0	0	0	0	0
	4:15 PM	0	0	0	1	0	0	0	3	0	0	0	0	4	0	0	0	0	0
	4:30 PM	1	0	0	1	0	0	1	0	0	0	0	0	3	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	VOLUMES	1	0	0	3	0	0	2	5	0	1	0	2	14	0	0	0	0	0
	APPROACH %	100%	0%	0%	100%	0%	0%	29%	71%	0%	33%	0%	67%						
	APP/DEPART	1	/	4	3	/	1	7	/	8	3	/	1	0					
	BEGIN PEAK HR	4:00 PM																	
	VOLUMES	1	0	0	2	0	0	2	5	0	1	0	1	12					
	APPROACH %	100%	0%	0%	100%	0%	0%	29%	71%	0%	50%	0%	50%						
	PEAK HR FACTOR		0.250			0.500			0.583			0.500		0.750					
	APP/DEPART	1	/	3	2	/	1	7	/	7	2	/	1	0					



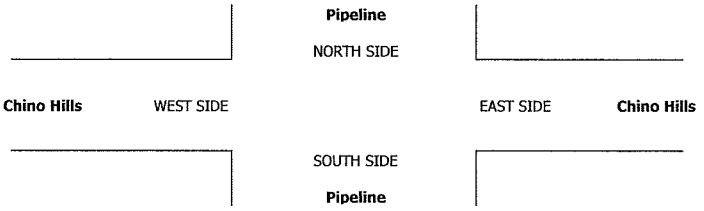
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / S ▼ / E ►	
	Factor	1	1.5	2	3	1.5	1.5					

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	44	62	75	40	24	33	31	194	9	28	192	31	760					0
	7:15 AM	41	61	97	34	35	34	31	253	10	35	243	27	897					0
	7:30 AM	43	62	78	36	24	22	31	235	14	25	244	32	844					0
	7:45 AM	49	58	71	34	23	25	35	205	19	44	218	36	815					0
	8:00 AM	50	46	76	34	32	30	41	190	15	24	175	58	768					0
	8:15 AM	49	67	52	29	33	32	51	214	13	28	231	75	873					0
	8:30 AM	37	56	52	37	30	24	41	191	22	35	248	47	818					0
	8:45 AM	40	67	47	47	35	31	45	184	15	20	172	92	794					0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	VOLUMES	352	478	546	288	235	230	305	1,665	116	237	1,721	397	6,567	0	0	0	0	0
	APPROACH %	26%	35%	40%	38%	31%	31%	15%	80%	6%	10%	73%	17%						
	APP/DEPART	1,376	/	1,179	753	/	587	2,085	/	2,499	2,354	/	2,303	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	183	226	321	137	113	111	138	882	57	127	879	153	3,324					
	APPROACH %	25%	31%	44%	38%	31%	31%	13%	82%	5%	11%	76%	13%						
	PEAK HR FACTOR		0.923			0.884			0.917			0.952		0.926					
	APP/DEPART	729	/	516	361	/	297	1,077	/	1,340	1,158	/	1,172	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	4:00 PM	25	70	41	63	86	30	60	272	25	62	166	57	954					0
	4:15 PM	25	71	47	52	64	41	53	289	47	52	195	58	991					0
	4:30 PM	16	63	36	58	67	36	49	283	31	52	189	67	945					0
	4:45 PM	28	70	45	75	70	44	50	283	38	53	170	66	991					0
	5:00 PM	33	72	38	70	105	43	52	272	36	51	200	80	1,049					0
	5:15 PM	32	88	41	52	82	39	69	287	38	51	218	95	1,090					0
	5:30 PM	29	83	57	71	104	36	52	251	34	58	207	69	1,048					0
	5:45 PM	36	91	36	66	98	34	74	281	42	60	193	81	1,091					0
	VOLUMES	222	606	340	506	675	302	457	2,216	290	436	1,537	572	8,157	0	0	0	0	0
	APPROACH %	19%	52%	29%	34%	45%	20%	15%	75%	10%	17%	60%	22%						
	APP/DEPART	1,168	/	1,635	1,483	/	1,400	2,963	/	3,062	2,544	/	2,060	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	129	333	172	259	388	152	246	1,090	150	219	818	324	4,277					
	APPROACH %	20%	53%	27%	32%	49%	19%	17%	73%	10%	16%	60%	24%						
	PEAK HR FACTOR		0.943			0.917			0.937			0.935		0.980					
	APP/DEPART	634	/	903	798	/	756	1,486	/	1,520	1,360	/	1,098	0					



INTERSECTION TURNING MOVEMENT COUNTS

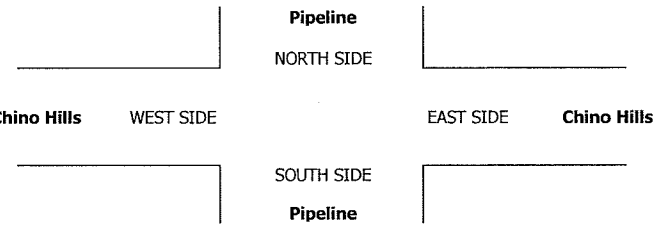
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 1: PASSENGER VEHICLES	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	41	59	72	38	22	28	31	184	6	18	165	29	693
	7:15 AM	36	59	86	32	33	34	29	232	10	29	201	27	808
	7:30 AM	40	60	75	31	24	19	31	221	14	18	211	26	770
	7:45 AM	46	58	63	29	23	22	35	192	14	31	189	36	738
	8:00 AM	44	44	71	31	25	30	41	184	13	18	154	53	708
	8:15 AM	46	64	50	25	33	30	48	205	13	25	208	72	819
	8:30 AM	35	53	45	29	30	24	36	184	22	26	210	45	739
	8:45 AM	37	64	45	44	32	25	42	171	13	18	155	89	735
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	325	461	507	259	222	212	293	1,573	105	183	1,493	377	6,010
	APPROACH %	25%	36%	39%	37%	32%	31%	15%	80%	5%	9%	73%	18%	
	APP/DEPART	1,293	/	1,131	693	/	493	1,971	/	2,356	2,053	/	2,030	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	176	226	259	116	105	101	155	802	54	82	762	187	3,035
	APPROACH %	27%	34%	39%	36%	33%	31%	15%	79%	5%	8%	73%	18%	
	PEAK HR FACTOR		0.944			0.915			0.950			0.853		0.926
	APP/DEPART	661	/	568	322	/	241	1,011	/	1,187	1,041	/	1,039	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	20	68	28	63	84	27	58	237	25	51	152	57	870
	4:15 PM	23	65	38	52	64	39	51	254	45	50	180	55	916
	4:30 PM	14	60	30	47	67	36	49	259	31	47	180	65	885
	4:45 PM	25	65	45	72	70	38	50	262	38	49	165	66	945
	5:00 PM	31	70	36	64	100	43	50	254	33	49	188	78	996
	5:15 PM	32	86	34	50	79	39	69	265	36	48	213	92	1,043
	5:30 PM	27	75	52	71	102	34	50	236	34	50	199	67	997
	5:45 PM	36	88	33	66	98	34	74	273	42	58	190	81	1,073
	VOLUMES	208	577	296	485	664	290	451	2,040	284	402	1,467	561	7,725
	APPROACH %	19%	53%	27%	34%	46%	20%	16%	74%	10%	17%	60%	23%	
	APP/DEPART	1,081	/	1,589	1,439	/	1,329	2,775	/	2,842	2,430	/	1,965	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	126	319	155	251	379	150	243	1,028	145	196	790	318	4,109
	APPROACH %	21%	53%	26%	32%	49%	19%	17%	73%	10%	15%	60%	24%	
	PEAK HR FACTOR		0.955			0.942			0.910			0.930		0.957
	APP/DEPART	600	/	880	780	/	720	1,416	/	1,443	1,313	/	1,066	0

U-TURNS					
NB	SB	EB	WB	TTL
0	0	0	1	1
0	0	0	2	2
0	0	0	3	3
0	0	0	2	2
0	0	0	2	2
0	0	0	3	3
0	0	0	2	2
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	17	17
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	6	6
0	0	0	3	3
0	0	0	2	2
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	2	2
0	0	0	6	6
0	0	0	21	21



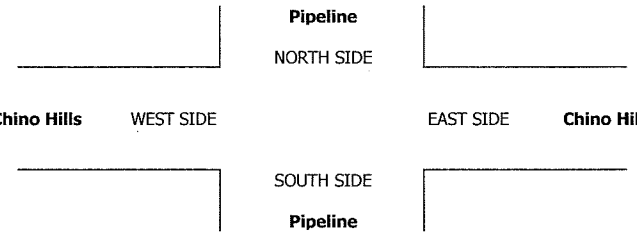
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	1	1	1	1	0	1	0	4	0	5	9	1	24	0	0	0	0	0
	7:15 AM	2	1	5	0	1	0	1	5	0	1	24	0	40	0	0	0	0	0
	7:30 AM	2	1	2	3	0	2	0	6	0	1	16	2	35	0	0	0	1	1
	7:45 AM	1	0	3	3	0	2	0	6	2	5	17	0	39	0	0	0	0	0
	8:00 AM	4	1	3	2	2	0	0	3	0	2	10	3	30	0	0	0	1	1
	8:15 AM	2	1	0	1	0	1	0	4	0	2	11	0	22	0	0	0	0	0
	8:30 AM	0	2	3	1	0	0	3	1	0	6	19	1	36	0	0	0	0	0
	8:45 AM	2	2	1	2	2	4	1	4	1	1	9	2	31	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	14	9	18	13	5	10	5	33	3	23	115	9	257	0	0	0	2	2
	APPROACH %	34%	22%	44%	46%	18%	36%	12%	80%	7%	16%	78%	6%						
	APP/DEPART	41	/	23	28	/	29	41	/	66	147	/	139	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	9	3	13	8	3	4	1	20	2	7	67	5	144					
	APPROACH %	36%	12%	52%	53%	20%	27%	4%	87%	9%	9%	83%	6%						
	PEAK HR FACTOR		0.781			0.750			0.719			0.810		0.900					
	APP/DEPART	25	/	9	15	/	12	23	/	43	81	/	80	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	2	0	1	0	0	18	0	4	7	0	33	0	0	0	0	0
	4:15 PM	1	4	6	0	0	1	1	14	0	1	8	2	38	0	0	0	0	0
	4:30 PM	1	2	4	3	0	0	0	13	0	3	6	1	33	0	0	0	0	0
	4:45 PM	1	3	0	2	0	3	0	10	0	1	3	0	23	0	0	0	0	0
	5:00 PM	1	0	1	2	3	0	1	9	2	1	8	1	29	0	0	0	0	0
	5:15 PM	0	1	2	1	2	0	0	12	0	2	3	2	25	0	0	0	0	0
	5:30 PM	0	5	2	0	1	1	1	10	0	5	4	1	30	0	0	0	0	0
	5:45 PM	0	2	2	0	0	0	0	5	0	1	2	0	12	0	0	0	0	0
	VOLUMES	5	17	19	8	7	5	3	91	2	18	41	7	223	0	0	0	0	0
	APPROACH %	12%	41%	46%	40%	35%	25%	3%	95%	2%	27%	62%	11%						
	APP/DEPART	41	/	27	20	/	27	96	/	118	66	/	51	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	4	9	12	5	1	4	1	55	0	9	24	3	127					
	APPROACH %	16%	36%	48%	50%	10%	40%	2%	98%	0%	25%	67%	8%						
	PEAK HR FACTOR		0.568			0.500			0.778			0.818		0.836					
	APP/DEPART	25	/	13	10	/	10	56	/	72	36	/	32	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)			
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	1	0	1	2	0	4
	7:15 AM	0	0	0	0	0	0	0	3	0	2	2	0	7
	7:30 AM	0	0	0	0	0	0	0	0	0	1	3	0	4
	7:45 AM	0	0	1	0	0	0	0	1	0	1	0	0	3
	8:00 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
	8:15 AM	0	0	1	1	0	0	0	0	0	0	1	0	3
	8:30 AM	0	0	1	0	0	0	0	2	0	0	4	0	7
	8:45 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	3	1	1	0	0	9	0	5	15	0	34
	APPROACH %	0%	0%	100%	50%	50%	0%	0%	100%	0%	25%	75%	0%	
	APP/DEPART	3	/	0	2	/	6	9	/	13	20	/	15	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	1	0	0	0	0	5	0	5	7	0	18
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	42%	58%	0%	
	PEAK HR FACTOR		0.250			0.000			0.417			0.750		0.643
	APP/DEPART	1	/	0	0	/	5	5	/	6	12	/	7	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	0	0	0	1	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
	4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
	4:45 PM	0	0	0	0	0	0	0	3	0	1	0	0	4
	5:00 PM	0	1	0	0	0	0	0	2	0	0	0	0	3
	5:15 PM	0	0	2	0	0	0	0	2	0	0	0	0	4
	5:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	4	0	0	0	0	13	0	1	1	0	20
	APPROACH %	0%	20%	80%	0%	0%	0%	0%	100%	0%	50%	50%	0%	
	APP/DEPART	5	/	1	0	/	1	13	/	17	2	/	1	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	1	3	0	0	0	0	7	0	1	1	0	13
	APPROACH %	0%	25%	75%	0%	0%	0%	0%	100%	0%	50%	50%	0%	
	PEAK HR FACTOR		0.500			0.000			0.583			0.500		0.813
	APP/DEPART	4	/	1	0	/	1	7	/	10	2	/	1	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
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0	0	0	0	0	
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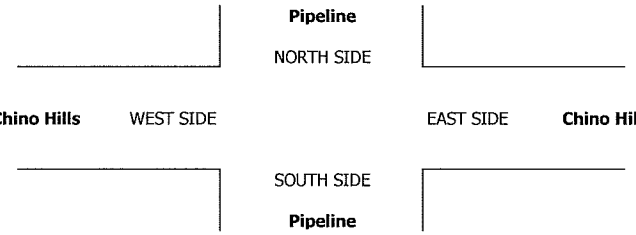
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	



INTERSECTION TURNING MOVEMENT COUNTS

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

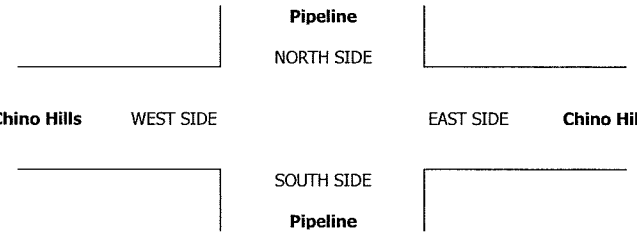
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	1	1	1	3	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0
	8:30 AM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	2	0	1	0	2	0	2	3	2	13	0	0	0	0	0
	APPROACH %	0%	0%	100%	67%	0%	33%	0%	100%	0%	29%	43%	29%						
	APP/DEPART	1	/	2	3	/	2	2	/	5	7	/	4	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	1	0	0	1	0	1	0	1	2	1	7					
	APPROACH %	0%	0%	100%	0%	0%	100%	0%	100%	0%	25%	50%	25%						
	PEAK HR FACTOR		0.250			0.250			0.250			0.333		0.583					
	APP/DEPART	1	/	1	1	/	1	1	/	2	4	/	3	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	1	0	1	0	0	1	0	1	0	1	0	0	5	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	4:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	1	0	1	3	0	1	0	2	0	1	1	0	10	0	0	0	0	0
	APPROACH %	50%	0%	50%	75%	0%	25%	0%	100%	0%	50%	50%	0%						
	APP/DEPART	2	/	0	4	/	1	2	/	6	2	/	3	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	1	0	1	2	0	1	0	2	0	1	1	0	9					
	APPROACH %	50%	0%	50%	67%	0%	33%	0%	100%	0%	50%	50%	0%						
	PEAK HR FACTOR		0.250			0.375			0.500			0.500		0.450					
	APP/DEPART	2	/	0	3	/	1	2	/	5	2	/	3	0					



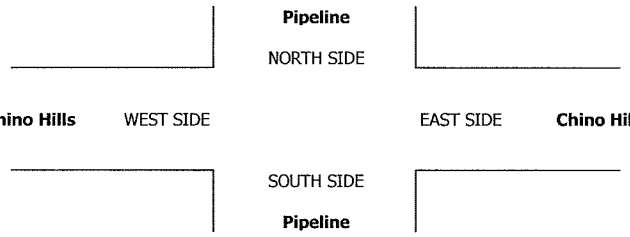
INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 5:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N ◄ W E ► S ▼
RV			

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:00 PM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000					
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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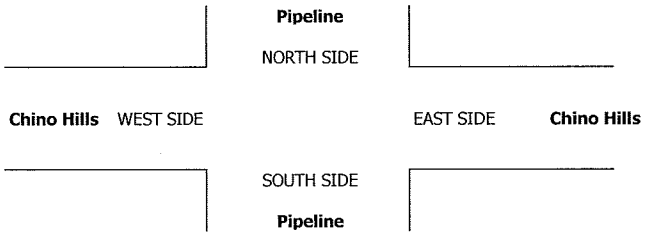
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Pipeline	LOCATION #:	4
TUESDAY	EAST & WEST:	Chino Hills	CONTROL:	SIGNAL

CLASS 6:	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼
BUSES			

		NORTHBOUND (Pipeline)			SOUTHBOUND (Pipeline)			EASTBOUND (Chino Hills)			WESTBOUND (Chino Hills)				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	1	1	1	0	1	0	0	1	2	0	4	0	11	0	0	0	0	0
	7:15 AM	1	0	0	1	0	0	0	3	0	0	1	0	6	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0
	7:45 AM	1	0	1	0	0	0	0	1	1	2	2	0	8	0	0	0	0	0
	8:00 AM	0	0	0	0	1	0	0	1	1	0	1	0	4	0	0	0	0	0
	8:15 AM	0	1	0	0	0	0	2	2	0	0	1	0	6	0	0	0	0	0
	8:30 AM	1	0	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	4	2	2	1	2	0	3	12	4	2	11	0	43	0	0	0	0	0
	APPROACH %	50%	25%	25%	33%	67%	0%	16%	63%	21%	15%	85%	0%						
	APP/DEPART	8	/	5	3	/	8	19	/	15	13	/	15	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	3	1	2	1	1	0	0	8	3	2	7	0	28					
	APPROACH %	50%	17%	33%	50%	50%	0%	0%	73%	27%	22%	78%	0%						
	PEAK HR FACTOR		0.500			0.500			0.917			0.563		0.636					
	APP/DEPART	6	/	1	2	/	6	11	/	11	9	/	10	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	1	3	0	0	0	1	2	0	1	2	0	10	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	3	1	0	0	0	4	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	2	1	3	0	0	1	1	5	2	1	2	0	18	0	0	0	0	0
	APPROACH %	33%	17%	50%	0%	0%	100%	13%	63%	25%	33%	67%	0%						
	APP/DEPART	6	/	2	1	/	3	8	/	8	3	/	5	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	1	1	3	0	0	1	1	5	1	1	2	0	16					
	APPROACH %	20%	20%	60%	0%	0%	100%	14%	71%	14%	33%	67%	0%						
	PEAK HR FACTOR		0.313			0.250			0.438			0.250		0.400					
	APP/DEPART	5	/	2	1	/	2	7	/	8	3	/	4	0					



INTERSECTION TURNING MOVEMENT COUNTS

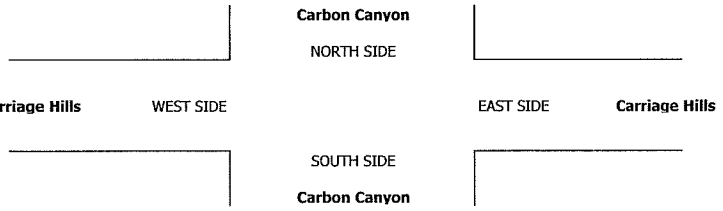
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

	NOTES:								
PCE Adjusted	Class	1	2	3	4	5	6		
	Factor	1	1.5	2	3	1.5	1.5		

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

		NORTHBOUND (Carbon Canyon)			SOUTHBOUND (Carbon Canyon)			EASTBOUND (Carriage Hills)			WESTBOUND (Carriage Hills)				U-TURNS				
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	73	1	0	335	0	0	0	0	5	0	1	414					0
	7:15 AM	0	55	0	0	351	0	0	0	0	8	0	4	417					0
	7:30 AM	0	67	1	0	343	0	0	0	0	4	0	1	416					0
	7:45 AM	0	61	2	0	321	0	0	0	0	2	0	3	388					0
	8:00 AM	0	71	0	0	355	0	0	0	0	8	0	1	434					0
	8:15 AM	0	67	1	0	334	0	0	0	0	4	0	2	407					0
	8:30 AM	0	71	3	1	314	0	0	0	0	2	0	0	391					0
	8:45 AM	0	63	1	1	280	0	0	0	0	2	0	0	347					0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	VOLUMES	0	526	8	2	2,631	0	0	0	0	34	0	12	3,212	0	0	0	0	0
	APPROACH %	0%	99%	1%	0%	100%	0%	0%	0%	0%	75%	0%	25%						
	APP/DEPART	534	/	537	2,633	/	2,665	0	/	10	46	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	253	3	0	1,369	0	0	0	0	21	0	9	1,654					
	APPROACH %	0%	99%	1%	0%	100%	0%	0%	0%	0%	71%	0%	29%						
	PEAK HR FACTOR		0.906			0.964			0.000			0.641		0.953					
	APP/DEPART	256	/	262	1,369	/	1,390	0	/	3	30	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0					0
	4:00 PM	0	352	3	0	70	0	0	0	0	1	0	4	429					0
	4:15 PM	0	335	2	1	72	0	0	0	0	0	0	2	411					0
	4:30 PM	0	330	0	4	89	0	0	0	0	0	0	0	423					0
	4:45 PM	0	321	2	2	59	0	0	0	0	1	0	2	387					0
	5:00 PM	0	363	0	1	73	0	0	0	0	3	0	1	441					0
	5:15 PM	0	359	2	1	91	0	0	0	0	2	0	1	456					0
	5:30 PM	0	365	2	4	67	0	0	0	0	2	0	1	441					0
	5:45 PM	0	369	1	0	87	0	0	0	0	2	0	0	459					0
	VOLUMES	0	2,793	12	13	607	0	0	0	0	11	0	10	3,445	0	0	0	0	0
	APPROACH %	0%	100%	0%	2%	98%	0%	0%	0%	0%	51%	0%	49%						
	APP/DEPART	2,805	/	2,803	620	/	617	0	/	25	21	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,456	5	6	318	0	0	0	0	9	0	3	1,796					
	APPROACH %	0%	100%	0%	2%	98%	0%	0%	0%	0%	74%	0%	26%						
	PEAK HR FACTOR		0.988			0.884			0.000			0.719		0.979					
	APP/DEPART	1,461	/	1,459	324	/	326	0	/	11	12	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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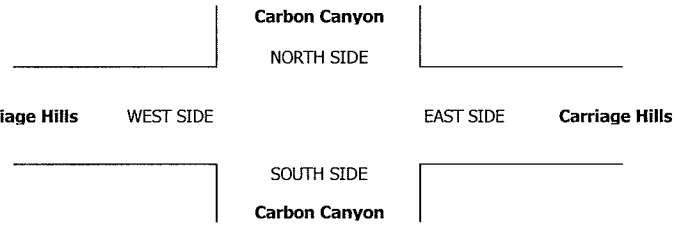
DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

CLASS 1: PASSENGER VEHICLES	NOTES:	AM / PM / MD / OTHER / OTHER	▲ N / ◄ W / E ► / S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Carriage Hills			WESTBOUND Carriage Hills				U-TURNS				
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	68	1	0	295	0	0	0	0	5	0	1	370	0	0	0	0	0
	7:15 AM	0	48	0	0	321	0	0	0	0	6	0	4	379	0	0	0	0	0
	7:30 AM	0	55	1	0	300	0	0	0	0	4	0	1	361	0	0	0	0	0
	7:45 AM	0	49	0	0	286	0	0	0	0	2	0	1	338	0	0	0	0	0
	8:00 AM	0	66	0	0	329	0	0	0	0	6	0	1	402	0	0	0	0	0
	8:15 AM	0	59	1	0	302	0	0	0	0	4	0	2	368	0	0	0	0	0
	8:30 AM	0	54	1	1	280	0	0	0	0	2	0	0	338	0	0	0	0	0
	8:45 AM	0	49	1	1	241	0	0	0	0	2	0	0	294	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	448	5	2	2,354	0	0	0	0	31	0	10	2,850	0	0	0	0	0
	APPROACH %	0%	99%	1%	0%	100%	0%	0%	0%	0%	76%	0%	24%						
	APP/DEPART	453	/	458	2,356	/	2,385	0	/	7	41	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	218	1	0	1,236	0	0	0	0	18	0	7	1,480					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	72%	0%	28%						
	PEAK HR FACTOR		0.830			0.939			0.000			0.625		0.920					
	APP/DEPART	219	/	225	1,236	/	1,254	0	/	1	25	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	317	1	0	58	0	0	0	0	1	0	2	379	0	0	0	0	0
	4:15 PM	0	305	2	1	59	0	0	0	0	0	0	0	367	0	0	0	0	0
	4:30 PM	0	295	0	4	87	0	0	0	0	0	0	0	386	0	0	0	0	0
	4:45 PM	0	298	2	2	56	0	0	0	0	1	0	2	361	0	0	0	0	0
	5:00 PM	0	334	0	1	70	0	0	0	0	3	0	1	409	0	0	0	0	0
	5:15 PM	0	345	2	1	86	0	0	0	0	2	0	1	437	0	0	0	0	0
	5:30 PM	0	343	2	4	58	0	0	0	0	0	0	1	408	0	1	0	0	1
	5:45 PM	0	343	1	0	81	0	0	0	0	2	0	0	427	0	0	0	0	0
	VOLUMES	0	2,580	10	13	555	0	0	0	0	9	0	7	3,174	0	1	0	0	1
	APPROACH %	0%	100%	0%	2%	98%	0%	0%	0%	0%	56%	0%	44%						
	APP/DEPART	2,590	/	2,588	568	/	564	0	/	22	16	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	1,365	5	5	295	0	0	0	0	7	0	3	1,681					
	APPROACH %	0%	100%	0%	2%	98%	0%	0%	0%	0%	70%	0%	30%						
	PEAK HR FACTOR		0.987			0.865			0.000			0.625		0.962					
	APP/DEPART	1,370	/	1,369	301	/	302	0	/	10	10	/	0	0					



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DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Carriage Hills			WESTBOUND Carriage Hills			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	3	0	0	21	0	0	0	0	0	0	0	24
	7:15 AM	0	3	0	0	13	0	0	0	0	1	0	0	17
	7:30 AM	0	7	0	0	26	0	0	0	0	0	0	0	33
	7:45 AM	0	8	0	0	21	0	0	0	0	0	0	0	29
	8:00 AM	0	3	0	0	14	0	0	0	0	1	0	0	18
	8:15 AM	0	5	0	0	21	0	0	0	0	0	0	0	26
	8:30 AM	0	10	1	0	18	0	0	0	0	0	0	0	29
	8:45 AM	0	7	0	0	24	0	0	0	0	0	0	0	31
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	46	1	0	158	0	0	0	0	2	0	0	207
	APPROACH %	0%	98%	2%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	47	/	46	158	/	160	0	/	1	2	/	0	0
	BEGIN PEAK HR		7:30 AM											
	VOLUMES	0	23	0	0	82	0	0	0	0	1	0	0	106
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	PEAK HR FACTOR		0.719			0.788			0.000			0.250		0.803
	APP/DEPART	23	/	23	82	/	83	0	/	0	1	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	18	0	0	5	0	0	0	0	0	0	0	23
	4:15 PM	0	20	0	0	7	0	0	0	0	0	0	0	27
	4:30 PM	0	22	0	0	1	0	0	0	0	0	0	0	23
	4:45 PM	0	15	0	0	2	0	0	0	0	0	0	0	17
	5:00 PM	0	18	0	0	2	0	0	0	0	0	0	0	20
	5:15 PM	0	8	0	0	3	0	0	0	0	0	0	0	11
	5:30 PM	0	12	0	0	4	0	0	0	0	1	0	0	17
	5:45 PM	0	17	0	0	4	0	0	0	0	0	0	0	21
	VOLUMES	0	130	0	0	28	0	0	0	0	1	0	0	159
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	
	APP/DEPART	130	/	130	28	/	29	0	/	0	1	/	0	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	0	75	0	0	15	0	0	0	0	0	0	0	90
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.852			0.536			0.000			0.000		0.833
	APP/DEPART	75	/	75	15	/	15	0	/	0	0	/	0	0

U-TURNS					
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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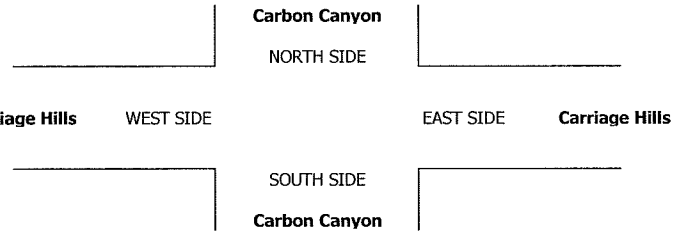
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

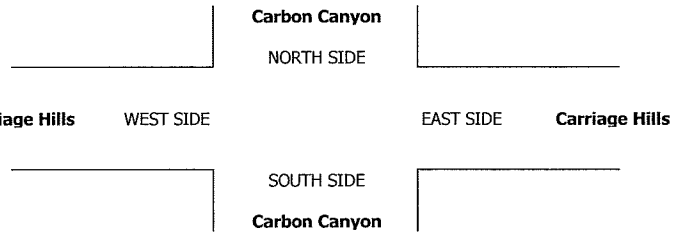
CLASS 3: 3-AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND (Carbon Canyon)			SOUTHBOUND (Carbon Canyon)			EASTBOUND (Carriage Hills)			WESTBOUND (Carriage Hills)				U-TURNS				
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0
	7:15 AM	0	1	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0
	7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	2	0	0	11	0	0	0	0	0	0	0	13	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	2	/	2	11	/	11	0	/	0	0	/	0	0					
	BEGIN PEAK HR		7:00 AM																
	VOLUMES	0	1	0	0	8	0	0	0	0	0	0	0	9					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.250			0.500			0.000			0.000		0.563					
	APP/DEPART	1	/	1	8	/	8	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
	4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	9	0	0	1	0	0	0	0	0	0	0	10	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	9	/	9	1	/	1	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:45 PM																
	VOLUMES	0	5	0	0	1	0	0	0	0	0	0	0	6					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.313			0.250			0.000			0.000		0.375					
	APP/DEPART	5	/	5	1	/	1	0	/	0	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

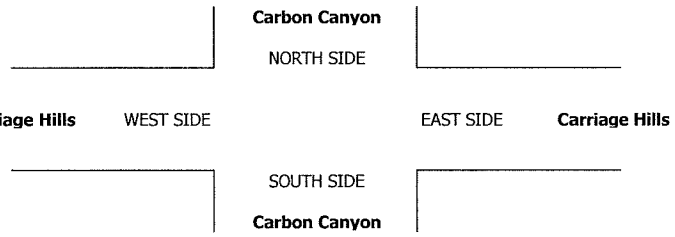
CLASS 4: 4 OR MORE AXLE TRUCKS

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Carriage Hills			WESTBOUND Carriage Hills				U-TURNS				
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	0	0	4	0	0	0	0	0	0	0	5	0	0	0	0	0
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	1	/	1	4	/	4	0	/	0	0	/	0	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	0	1	0	0	2	0	0	0	0	0	0	0	3					
	APPROACH %	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.250			0.500			0.000			0.000		0.375					
	APP/DEPART	1	/	1	2	/	2	0	/	0	0	/	0	0					
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	APP/DEPART	0	/	0	2	/	2	0	/	0	0	/	0	0					
	BEGIN PEAK HR		3:15 PM																
	VOLUMES	0	0	0	0	1	0	0	0	0	0	0	0	1					
	APPROACH %	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%						
	PEAK HR FACTOR		0.000			0.250			0.000			0.000		0.250					
	APP/DEPART	0	/	0	1	/	1	0	/	0	0	/	0	0					



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

CLASS 5: RV

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Carriage Hills			WESTBOUND Carriage Hills			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		7:00 AM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		3:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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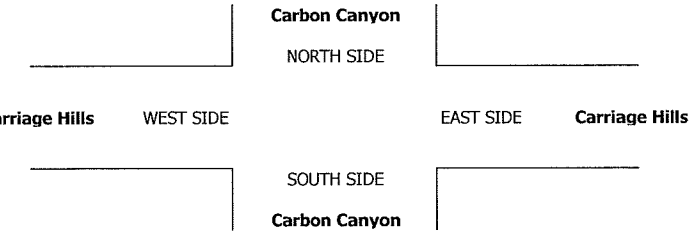
0	0	0	0	0
0	0	0	0	0



INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Chino Hills	PROJECT #:	SC1071
9/13/16	NORTH & SOUTH:	Carbon Canyon	LOCATION #:	3
TUESDAY	EAST & WEST:	Carriage Hills	CONTROL:	STOP W

CLASS 6:	NOTES:	AM	▲ N	
BUSES		PM	◄ W	E ►
		MD		
		OTHER	S ▼	
		OTHER		

		NORTHBOUND Carbon Canyon			SOUTHBOUND Carbon Canyon			EASTBOUND Carriage Hills			WESTBOUND Carriage Hills			
	LANES:	NL X	NT 1	NR 1	SL 1	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
	7:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	7:45 AM	0	0	1	0	0	0	0	0	0	0	0	1	2
	8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	1	1	0	4	0	0	0	0	0	0	1	7
	APPROACH %	0%	50%	50%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	2	/	2	4	/	4	0	/	1	1	/	0	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	1	1	0	4	0	0	0	0	0	0	1	7
	APPROACH %	0%	50%	50%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.500			0.500			0.000			0.250		0.875
	APP/DEPART	2	/	2	4	/	4	0	/	1	1	/	0	0
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	1	0	1	0	0	0	0	0	0	1	3
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	1	0	1	0	0	0	0	0	0	2	4
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	APP/DEPART	1	/	2	1	/	1	0	/	1	2	/	0	0
	BEGIN PEAK HR		3:30 PM											
	VOLUMES	0	0	1	0	1	0	0	0	0	0	0	2	4
	APPROACH %	0%	0%	100%	0%	100%	0%	0%	0%	0%	0%	0%	100%	
	PEAK HR FACTOR		0.250			0.250			0.000			0.500		0.333
	APP/DEPART	1	/	2	1	/	1	0	/	1	2	/	0	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	

Carbon Canyon

NORTH SIDE

Carriage Hills WEST SIDE

EAST SIDE **Carriage Hills**

SOUTH SIDE

Carbon Canyon

APPENDIX B-II

ROADWAY SEGMENT COUNTS

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016 **CITY:** Chino Hills

JOB #: SC1071 **LOCATION:** Rustic north of Chino Hills 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	3	0	0	0	0	0	3
0:15	0	0	0	0	0	0	0	12:15	1	0	0	0	0	0	1
0:30	1	0	0	0	0	0	1	12:30	2	1	0	0	0	0	3
0:45	0	0	0	0	0	0	0	12:45	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	13:00	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	13:15	3	1	1	0	0	0	5
1:30	0	0	0	0	0	0	0	13:30	2	0	0	0	0	0	2
1:45	0	0	0	0	0	0	0	13:45	3	1	0	0	0	0	4
2:00	0	0	0	0	0	0	0	14:00	3	0	0	0	0	0	3
2:15	0	0	0	0	0	0	0	14:15	1	0	0	0	0	0	1
2:30	0	0	0	0	0	0	0	14:30	3	0	0	0	0	0	3
2:45	0	0	0	0	0	0	0	14:45	2	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	15:00	3	0	0	0	0	0	3
3:15	0	0	0	0	0	0	0	15:15	1	0	0	0	0	0	1
3:30	0	0	0	0	0	0	0	15:30	4	0	0	0	0	0	4
3:45	0	0	0	0	0	0	0	15:45	2	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	16:00	1	0	0	0	0	0	1
4:15	1	0	0	0	0	0	1	16:15	1	0	0	0	0	0	1
4:30	0	0	0	0	0	0	0	16:30	5	1	0	0	0	0	6
4:45	0	0	0	0	0	0	0	16:45	3	0	0	0	0	0	3
5:00	1	0	0	0	0	0	1	17:00	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	17:15	2	0	0	0	0	0	2
5:30	0	0	0	0	0	0	0	17:30	7	0	0	0	0	0	7
5:45	0	0	0	0	0	0	0	17:45	2	0	0	0	0	0	2
6:00	0	0	0	0	0	0	0	18:00	1	0	0	0	0	0	1
6:15	0	0	0	0	0	0	0	18:15	6	0	0	0	0	0	6
6:30	0	0	0	0	0	0	0	18:30	4	0	0	0	0	0	4
6:45	0	0	0	0	0	0	0	18:45	6	1	0	0	0	0	7
7:00	4	0	0	0	0	0	4	19:00	1	0	0	0	0	0	1
7:15	15	0	0	0	0	0	15	19:15	2	0	0	0	0	0	2
7:30	6	0	0	0	0	0	6	19:30	5	0	0	0	0	0	5
7:45	1	2	0	0	0	0	3	19:45	3	0	0	0	0	0	3
8:00	1	0	0	0	0	0	1	20:00	2	0	0	0	0	0	2
8:15	4	2	0	0	0	0	6	20:15	3	0	0	0	0	0	3
8:30	1	2	0	0	0	0	3	20:30	1	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	20:45	2	0	0	0	0	0	2
9:00	1	1	0	0	0	0	2	21:00	1	0	0	0	0	0	1
9:15	0	0	0	0	0	0	0	21:15	1	0	0	0	0	0	1
9:30	3	0	0	0	0	0	3	21:30	2	0	0	0	0	0	2
9:45	2	0	0	0	0	0	2	21:45	1	0	0	0	0	0	1
10:00	5	0	0	0	0	0	5	22:00	2	0	0	0	0	0	2
10:15	1	0	0	0	0	0	1	22:15	0	0	0	0	0	0	0
10:30	2	2	0	1	0	0	5	22:30	1	0	0	0	0	0	1
10:45	1	2	0	0	0	0	3	22:45	3	0	0	0	0	0	3
11:00	2	0	0	0	0	0	2	23:00	2	0	0	0	0	0	2
11:15	3	0	0	0	0	0	3	23:15	3	0	0	0	0	0	3
11:30	3	0	0	0	0	0	3	23:30	4	0	0	0	0	0	4
11:45	4	0	0	0	0	0	4	23:45	1	0	0	0	0	0	1
TOTAL	62	11	0	1	0	0	74	TOTAL	111	5	1	0	0	0	117

AM PEAK HOUR	7:00 AM
AM PEAK VOLUME	28

AM PEAK HOUR	6:15 PM
AM PEAK VOLUME	18

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	173	16	1	1	0	0	191
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	90.6%	8.4%	0.5%	0.5%	0.0%	0.0%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	346	32	2	3	0	0	383
CLASS 6	Buses	% OF TOTAL	90.3%	8.4%	0.5%	0.8%	0.0%	0.0%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016
JOB #: SC1071
CITY: Chino Hills
LOCATION: Rustic north of Chino Hills 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	0	0	0	0	0	0	0	12:00	3	0	0	0	0	0	3
0:15	0	0	0	0	0	0	0	12:15	2	0	0	0	0	0	2
0:30	1	0	0	0	0	0	1	12:30	2	1	0	0	0	0	3
0:45	0	0	0	0	0	0	0	12:45	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	13:00	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	13:15	2	1	0	1	0	0	4
1:30	0	0	0	0	0	0	0	13:30	2	0	1	0	0	0	3
1:45	0	0	0	0	0	0	0	13:45	3	1	0	0	0	0	4
2:00	0	0	0	0	0	0	0	14:00	2	0	0	0	0	0	2
2:15	0	0	0	0	0	0	0	14:15	2	0	0	0	0	0	2
2:30	0	0	0	0	0	0	0	14:30	4	0	0	0	0	0	4
2:45	0	0	0	0	0	0	0	14:45	2	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	15:00	2	0	0	0	0	0	2
3:15	0	0	0	0	0	0	0	15:15	2	0	0	0	0	0	2
3:30	0	0	0	0	0	0	0	15:30	4	0	0	0	0	0	4
3:45	0	0	0	0	0	0	0	15:45	2	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	16:00	1	0	0	0	0	0	1
4:15	0	0	0	0	0	0	0	16:15	2	0	0	0	0	0	2
4:30	1	0	0	0	0	0	1	16:30	5	1	0	0	0	0	6
4:45	0	0	0	0	0	0	0	16:45	3	0	0	0	0	0	3
5:00	1	0	0	0	0	0	1	17:00	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	17:15	1	0	0	0	0	0	1
5:30	0	0	0	0	0	0	0	17:30	6	0	0	0	0	0	6
5:45	0	0	0	0	0	0	0	17:45	2	0	0	0	0	0	2
6:00	0	0	0	0	0	0	0	18:00	1	0	0	0	0	0	1
6:15	0	0	0	0	0	0	0	18:15	5	0	0	0	0	0	5
6:30	0	0	0	0	0	0	0	18:30	5	0	0	0	0	0	5
6:45	0	0	0	0	0	0	0	18:45	9	0	0	0	0	0	9
7:00	4	0	0	0	0	0	4	19:00	2	0	0	0	0	0	2
7:15	14	0	0	0	0	0	14	19:15	2	0	0	0	0	0	2
7:30	7	0	0	0	0	0	7	19:30	4	0	0	0	0	0	4
7:45	2	0	0	0	0	0	2	19:45	4	0	0	0	0	0	4
8:00	1	2	0	0	0	0	3	20:00	1	0	0	0	0	0	1
8:15	3	2	0	0	0	0	5	20:15	3	0	0	0	0	0	3
8:30	1	2	0	0	0	0	3	20:30	1	0	0	0	0	0	1
8:45	0	0	0	0	0	0	0	20:45	3	0	0	0	0	0	3
9:00	1	1	0	0	0	0	2	21:00	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	21:15	2	0	0	0	0	0	2
9:30	2	0	0	0	0	0	2	21:30	0	0	0	0	0	0	0
9:45	1	0	0	0	0	0	1	21:45	1	0	0	0	0	0	1
10:00	4	0	0	0	0	0	4	22:00	3	0	0	0	0	0	3
10:15	3	0	0	0	0	0	3	22:15	0	0	0	0	0	0	0
10:30	4	1	0	1	0	0	6	22:30	1	0	0	0	0	0	1
10:45	1	2	0	0	0	0	3	22:45	2	0	0	0	0	0	2
11:00	2	1	0	0	0	0	3	23:00	1	0	0	0	0	0	1
11:15	2	0	0	0	0	0	2	23:15	3	0	0	0	0	0	3
11:30	2	0	0	0	0	0	2	23:30	4	1	0	0	0	0	5
11:45	4	0	0	0	0	0	4	23:45	1	0	0	0	0	0	1
TOTAL	61	11	0	1	0	0	73	TOTAL	112	5	1	1	0	0	119

AM PEAK HOUR	7:00 AM
AM PEAK VOLUME	27

AM PEAK HOUR	6:15 PM
AM PEAK VOLUME	21

TOTAL: AM+PM		173	16	1	2	0	0	192
% OF TOTAL		90.1%	8.3%	0.5%	1.0%	0.0%	0.0%	100.0%
CLASS 1	PASSENGER VEHICLES							
CLASS 2	2-AXLE TRUCKS							
CLASS 3	3-AXLE TRUCKS							
CLASS 4	4 OR MORE AXLE TRUCKS							
CLASS 5	RV							
CLASS 6	BUS							

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016 **CITY:** Chino Hills

JOB #: SC1071 **LOCATION:** Carbon Canyon south of Chino Hills 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	45	1	0	0	0	0	46	12:00	83	7	1	0	0	0	91
0:15	54	0	0	0	0	0	54	12:15	94	11	2	0	0	1	108
0:30	24	0	0	0	0	0	24	12:30	76	6	0	0	0	0	82
0:45	21	1	0	0	0	0	22	12:45	87	5	0	0	0	0	92
1:00	28	0	0	0	0	0	28	13:00	114	9	0	0	0	0	123
1:15	12	1	0	0	0	0	13	13:15	110	8	1	0	0	0	119
1:30	13	0	0	0	0	0	13	13:30	112	16	1	2	0	0	131
1:45	7	0	0	0	0	0	7	13:45	184	11	0	0	0	0	195
2:00	10	0	0	0	0	0	10	14:00	158	11	1	1	0	0	171
2:15	9	0	0	0	0	0	9	14:15	184	11	2	2	0	0	199
2:30	14	0	0	0	0	0	14	14:30	266	19	2	1	0	2	290
2:45	11	0	0	0	0	0	11	14:45	325	14	3	1	0	2	345
3:00	8	0	0	0	0	0	8	15:00	307	20	2	2	0	3	334
3:15	5	0	0	0	0	0	5	15:15	323	25	0	2	0	1	351
3:30	7	0	0	0	0	0	7	15:30	329	27	1	1	0	0	358
3:45	6	0	0	0	0	0	6	15:45	316	23	1	0	0	1	341
4:00	11	0	0	0	0	0	11	16:00	318	12	1	0	0	1	332
4:15	10	0	0	0	0	0	10	16:15	363	15	2	0	0	0	380
4:30	10	0	0	0	0	0	10	16:30	305	15	1	1	0	0	322
4:45	10	0	0	0	0	0	10	16:45	379	13	0	1	0	0	393
5:00	12	1	0	0	0	0	13	17:00	326	9	4	1	0	0	340
5:15	10	0	0	0	0	0	10	17:15	353	12	1	0	0	0	366
5:30	18	0	0	0	0	0	18	17:30	371	11	0	0	1	0	383
5:45	14	0	0	0	0	0	14	17:45	364	9	1	0	0	0	374
6:00	14	0	0	0	0	0	14	18:00	309	9	1	1	0	0	320
6:15	25	0	0	0	0	0	25	18:15	378	9	1	0	0	0	388
6:30	18	0	0	0	0	0	18	18:30	354	8	1	0	0	0	363
6:45	55	2	0	0	0	0	57	18:45	318	5	0	0	0	0	323
7:00	109	2	2	0	0	0	113	19:00	329	12	2	0	1	0	344
7:15	109	5	0	0	0	0	114	19:15	324	5	0	0	0	0	329
7:30	75	5	0	1	0	1	82	19:30	260	3	0	0	0	0	263
7:45	96	4	0	1	0	0	101	19:45	178	3	0	0	0	0	181
8:00	88	3	0	0	0	2	93	20:00	159	2	0	0	0	0	161
8:15	134	10	0	0	0	0	144	20:15	141	1	0	0	0	0	142
8:30	86	7	0	0	0	0	93	20:30	115	2	0	0	0	0	117
8:45	75	4	0	0	0	0	79	20:45	86	1	0	0	0	0	87
9:00	65	8	0	0	0	0	73	21:00	82	1	0	0	0	0	83
9:15	76	5	1	0	0	0	82	21:15	66	0	0	0	0	0	66
9:30	67	5	1	0	1	1	75	21:30	96	0	0	0	0	0	96
9:45	62	4	1	1	0	0	68	21:45	86	0	0	0	0	0	86
10:00	79	11	1	1	0	0	92	22:00	89	0	0	0	0	0	89
10:15	85	0	1	0	0	0	86	22:15	76	0	0	0	1	0	77
10:30	64	7	1	1	0	0	73	22:30	84	0	0	0	0	0	84
10:45	71	9	0	0	0	0	80	22:45	91	0	0	0	0	0	91
11:00	69	12	1	1	0	0	83	23:00	66	1	0	0	0	0	67
11:15	89	11	0	0	1	0	101	23:15	74	0	0	0	0	1	75
11:30	88	2	0	0	0	0	90	23:30	45	0	0	0	0	1	46
11:45	104	2	1	1	0	0	108	23:45	50	0	0	1	0	0	51
TOTAL	2,172	122	10	7	2	4	2,317	TOTAL	9,703	381	32	17	3	13	10,149

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	431

AM PEAK HOUR	4:45 PM
AM PEAK VOLUME	1,482

CLASS 1	PASSENGER VEHICLES	TOTAL: AM+PM	11,875	503	42	24	5	17	12,466
CLASS 2	2-AXLE TRUCKS	% OF TOTAL	95.3%	4.0%	0.3%	0.2%	0.0%	0.1%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	TOTAL: ALL	19,901	857	75	42	12	33	20,920
CLASS 6	Buses	% OF TOTAL	95.1%	4.1%	0.4%	0.2%	0.1%	0.2%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016
JOB #: SC1071
CITY: Chino Hills
LOCATION: Carbon Canyon south of Chino Hills 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	21	0	0	0	0	0	21	12:00	73	6	0	0	0	1	80
0:15	10	0	0	0	0	0	10	12:15	87	3	0	1	0	0	91
0:30	20	0	0	0	0	0	20	12:30	68	6	0	0	0	0	74
0:45	14	0	0	0	0	0	14	12:45	73	9	0	0	0	0	82
1:00	7	0	0	0	0	0	7	13:00	68	5	0	0	0	0	73
1:15	5	0	0	0	0	0	5	13:15	81	4	0	1	0	1	87
1:30	13	0	0	0	0	0	13	13:30	88	5	0	1	1	0	95
1:45	8	0	0	0	0	0	8	13:45	78	3	0	0	0	0	81
2:00	5	0	0	0	0	0	5	14:00	88	5	2	0	0	1	96
2:15	2	0	0	0	0	0	2	14:15	90	3	0	0	1	1	95
2:30	9	0	0	0	0	0	9	14:30	92	7	1	0	0	2	102
2:45	5	0	0	0	0	0	5	14:45	85	4	1	0	1	3	94
3:00	3	0	0	0	0	0	3	15:00	95	6	1	0	0	0	102
3:15	5	0	0	0	0	0	5	15:15	89	1	1	1	0	0	92
3:30	7	0	0	0	0	0	7	15:30	106	4	0	0	0	2	112
3:45	11	0	0	0	0	0	11	15:45	89	2	0	0	0	0	91
4:00	6	0	0	0	0	0	6	16:00	117	3	0	2	0	0	122
4:15	13	0	0	0	0	0	13	16:15	84	3	0	1	0	0	88
4:30	16	0	0	0	0	0	16	16:30	111	4	0	0	0	0	115
4:45	18	0	0	0	0	0	18	16:45	95	5	0	0	0	0	100
5:00	14	1	0	0	0	0	15	17:00	114	3	1	0	0	0	118
5:15	32	1	0	0	0	0	33	17:15	108	3	0	0	0	0	111
5:30	34	0	0	0	0	0	34	17:30	115	4	0	0	0	0	119
5:45	21	1	0	0	0	0	22	17:45	95	1	0	0	0	0	96
6:00	41	2	1	1	0	0	45	18:00	82	3	0	0	0	0	85
6:15	39	1	1	0	0	0	41	18:15	115	1	0	0	0	0	116
6:30	50	0	0	0	0	0	50	18:30	92	0	0	0	1	0	93
6:45	41	1	0	0	0	0	42	18:45	81	0	1	0	0	0	82
7:00	320	14	1	0	0	1	336	19:00	79	0	0	0	0	0	79
7:15	333	20	0	2	0	1	356	19:15	75	1	0	0	0	0	76
7:30	357	16	1	0	0	1	375	19:30	91	1	0	0	0	0	92
7:45	312	17	0	1	0	1	331	19:45	63	1	0	1	0	0	65
8:00	293	21	2	0	0	0	316	20:00	58	0	0	0	0	0	58
8:15	252	17	2	0	0	0	271	20:15	72	0	0	1	0	0	73
8:30	298	23	0	1	1	0	323	20:30	50	2	0	0	0	0	52
8:45	250	14	2	0	0	0	266	20:45	43	1	0	0	0	0	44
9:00	248	15	0	0	0	0	263	21:00	57	0	0	0	0	0	57
9:15	205	6	2	1	0	0	214	21:15	51	2	0	0	0	0	53
9:30	200	13	2	1	0	0	216	21:30	50	0	0	0	0	0	50
9:45	141	9	0	1	0	0	151	21:45	50	0	0	0	0	0	50
10:00	119	5	0	0	0	0	124	22:00	55	0	0	0	0	0	55
10:15	111	6	2	0	0	0	119	22:15	45	0	0	0	0	0	45
10:30	99	5	2	0	0	0	106	22:30	47	0	0	0	0	0	47
10:45	95	10	2	0	1	0	108	22:45	38	0	0	0	1	0	39
11:00	87	7	3	0	0	0	97	23:00	41	1	0	0	0	0	42
11:15	82	5	2	0	0	0	89	23:15	36	0	0	0	0	1	37
11:30	76	3	0	0	0	0	79	23:30	24	0	0	0	0	0	24
11:45	78	9	0	1	0	0	88	23:45	16	0	0	0	0	0	16
TOTAL	4,426	242	25	9	2	4	4,708	TOTAL	3,600	112	8	9	5	12	3,746
				AM PEAK HOUR			7:00 AM						AM PEAK HOUR		4:45 PM
				AM PEAK VOLUME			1,398						AM PEAK VOLUME		448

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	8,026	354	33	18	7	16	8,454
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	94.9%	4.2%	0.4%	0.2%	0.1%	0.2%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV								
CLASS 6	BUS								

A816

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016 **CITY:** Chino Hills

JOB #: SC1071 **LOCATION:** Chino Hills east of Carbon Canyon 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	55	1	0	0	0	0	56	**12:00**	165	12	2	0	0	0	179
0:15	68	0	0	0	0	0	68	**12:15**	159	12	3	0	0	2	176
0:30	36	0	0	0	0	0	36	**12:30**	142	13	0	0	0	0	155
0:45	37	1	0	0	0	0	38	**12:45**	154	12	1	0	0	0	167
1:00	28	0	0	0	0	0	28	**13:00**	151	9	1	1	0	0	162
1:15	24	1	0	0	0	0	25	**13:15**	162	7	1	1	0	0	171
1:30	24	0	0	0	0	0	24	**13:30**	175	23	1	2	0	0	201
1:45	17	0	0	0	0	0	17	**13:45**	233	12	2	0	0	0	247
2:00	15	0	0	0	0	0	15	**14:00**	210	17	4	1	0	0	232
2:15	11	0	0	0	0	0	11	**14:15**	229	15	2	3	0	0	249
2:30	13	0	0	0	0	0	13	**14:30**	296	19	3	3	0	2	323
2:45	12	0	0	0	0	0	12	**14:45**	359	15	3	1	0	2	380
3:00	11	0	0	0	0	0	11	**15:00**	367	24	1	2	0	2	396
3:15	8	0	0	0	0	0	8	**15:15**	410	25	1	2	0	2	440
3:30	10	0	0	0	0	0	10	**15:30**	401	28	1	1	0	4	435
3:45	14	0	0	0	0	0	14	**15:45**	400	21	3	0	0	3	427
4:00	13	0	0	0	0	0	13	**16:00**	435	14	1	0	0	3	453
4:15	10	0	0	0	0	0	10	**16:15**	436	20	2	0	0	0	458
4:30	12	0	0	0	0	0	12	**16:30**	387	17	1	0	0	0	405
4:45	13	0	0	0	0	0	13	**16:45**	468	13	2	1	0	0	484
5:00	10	1	0	0	0	0	11	**17:00**	425	10	5	1	0	0	441
5:15	14	0	0	0	0	0	14	**17:15**	450	10	1	0	0	1	462
5:30	25	0	0	0	0	0	25	**17:30**	467	14	0	0	1	0	482
5:45	19	0	0	0	0	0	19	**17:45**	472	11	1	0	0	0	484
6:00	20	0	0	0	0	0	20	**18:00**	412	11	1	1	0	0	425
6:15	37	0	0	0	0	0	37	**18:15**	446	8	2	1	0	0	457
6:30	34	3	0	0	0	0	37	**18:30**	445	8	2	0	0	0	455
6:45	63	0	1	0	0	0	64	**18:45**	401	10	1	1	0	0	413
7:00	110	2	2	0	0	1	115	**19:00**	428	10	2	0	1	0	441
7:15	140	6	0	0	0	2	148	**19:15**	389	5	0	1	0	0	395
7:30	116	7	0	1	0	2	126	**19:30**	297	3	0	0	0	0	300
7:45	149	7	0	0	0	2	158	**19:45**	249	3	0	0	0	0	252
8:00	140	4	0	0	0	2	146	**20:00**	211	2	0	0	0	0	213
8:15	188	15	0	0	0	0	203	**20:15**	193	1	0	0	0	1	195
8:30	141	11	0	0	0	0	152	**20:30**	159	2	0	0	0	0	161
8:45	121	5	0	0	0	0	126	**20:45**	140	1	0	0	0	0	141
9:00	122	6	0	1	0	0	129	**21:00**	137	2	0	0	0	0	139
9:15	124	4	2	1	0	0	131	**21:15**	122	1	0	0	0	0	123
9:30	114	9	2	1	1	1	128	**21:30**	127	0	0	0	0	0	127
9:45	103	6	1	2	0	0	112	**21:45**	127	0	0	0	0	0	127
10:00	126	19	5	1	0	0	151	**22:00**	123	0	0	0	0	0	123
10:15	124	5	2	0	0	0	131	**22:15**	108	0	0	0	1	0	109
10:30	116	8	1	0	0	0	125	**22:30**	137	1	0	0	0	0	138
10:45	119	11	2	0	0	0	132	**22:45**	119	0	0	0	0	0	119
11:00	121	16	4	2	0	0	143	**23:00**	104	1	0	0	0	0	105
11:15	164	11	2	0	1	1	179	**23:15**	125	0	0	0	0	1	126
11:30	141	5	1	0	0	0	147	**23:30**	74	1	0	0	0	1	76
11:45	168	3	3	1	0	0	175	**23:45**	70	0	0	0	0	0	70
TOTAL	3,300	167	28	10	2	11	3,518	**TOTAL**	12,696	443	50	23	3	24	13,239

AM PEAK HOUR	7:45 AM	**AM PEAK HOUR**	5:00 PM
AM PEAK VOLUME	659	**AM PEAK VOLUME**	1,869

CLASS 1	PASSENGER VEHICLES	**TOTAL: AM+PM**	15,996	610	78	33	5	35	16,757
CLASS 2	2-AXLE TRUCKS	**% OF TOTAL**	95.5%	3.6%	0.5%	0.2%	0.0%	0.2%	100.0%
CLASS 3	3-AXLE TRUCKS								
CLASS 4	4 OR MORE AXLE TRUCKS								
CLASS 5	RV	**TOTAL: ALL**	27,923	1,065	138	53	11	63	29,253
CLASS 6	Buses	**% OF TOTAL**	95.5%	3.6%	0.5%	0.2%	0.0%	0.2%	100.0%

24-HOUR ROADWAY SEGMENT COUNTS (WITH CLASSIFICATION)

Prepared by AimTD LLC tel. 714 253 7888 cs@aimtd.com

DATE: Thursday, September 15, 2016
JOB #: SC1071
CITY: Chino Hills
LOCATION: Chino Hills east of Carbon Canyon 15

AM TIME	1	2	3	4	5	6	TOTAL	PM Time	1	2	3	4	5	6	TOTAL
0:00	24	0	0	0	0	0	24	**12:00**	142	8	0	0	0	2	152
0:15	18	0	0	0	0	0	18	**12:15**	137	10	0	1	0	0	148
0:30	29	0	0	0	0	0	29	**12:30**	158	9	2	1	1	0	171
0:45	19	0	0	0	0	0	19	**12:45**	128	16	0	1	0	0	145
1:00	16	0	0	0	0	0	16	**13:00**	118	7	2	0	0	0	127
1:15	12	0	0	0	0	0	12	**13:15**	143	5	3	1	0	1	153
1:30	15	0	0	0	0	0	15	**13:30**	163	8	0	0	0	1	172
1:45	16	0	0	0	0	0	16	**13:45**	131	10	1	0	0	0	142
2:00	13	0	0	0	0	0	13	**14:00**	143	9	2	1	0	0	155
2:15	9	0	0	0	0	0	9	**14:15**	153	8	0	0	1	1	163
2:30	12	0	0	0	0	0	12	**14:30**	173	6	2	0	0	3	184
2:45	10	0	0	0	0	0	10	**14:45**	186	8	2	1	0	4	201
3:00	6	0	0	0	0	0	6	**15:00**	188	6	1	0	0	0	195
3:15	8	0	0	0	0	0	8	**15:15**	139	3	1	1	0	0	144
3:30	7	0	0	0	0	0	7	**15:30**	162	10	4	0	0	2	178
3:45	14	0	0	0	0	0	14	**15:45**	145	4	1	0	0	1	151
4:00	9	0	0	0	0	0	9	**16:00**	181	4	0	2	0	0	187
4:15	18	0	0	0	0	0	18	**16:15**	155	6	0	0	0	0	161
4:30	18	0	0	0	0	0	18	**16:30**	174	9	0	0	0	1	184
4:45	23	1	0	0	0	0	24	**16:45**	147	8	0	0	0	0	155
5:00	21	2	0	0	0	0	23	**17:00**	188	5	1	0	0	0	194
5:15	32	1	0	0	0	0	33	**17:15**	192	3	0	0	0	0	195
5:30	39	0	0	0	0	0	39	**17:30**	186	3	0	0	0	0	189
5:45	35	2	0	0	0	0	37	**17:45**	180	2	1	0	0	0	183
6:00	54	2	1	1	0	0	58	**18:00**	143	4	1	0	0	0	148
6:15	54	1	1	0	0	0	56	**18:15**	184	2	0	0	0	0	186
6:30	64	0	0	0	0	0	64	**18:30**	160	0	0	0	1	0	161
6:45	51	0	0	0	0	0	51	**18:45**	166	1	1	0	0	0	168
7:00	358	16	3	0	0	2	379	**19:00**	140	2	0	0	0	0	142
7:15	357	20	1	1	0	1	380	**19:15**	149	1	0	0	0	0	150
7:30	377	14	1	0	0	1	393	**19:30**	132	2	0	0	0	0	134
7:45	382	19	0	1	0	0	402	**19:45**	113	1	0	1	0	1	116
8:00	331	18	2	0	0	3	354	**20:00**	122	0	0	0	0	0	122
8:15	344	18	3	0	0	1	366	**20:15**	121	1	0	0	0	0	122
8:30	404	29	0	1	1	1	436	**20:30**	79	2	0	0	0	0	81
8:45	330	15	2	0	0	0	347	**20:45**	98	1	0	0	0	0	99
9:00	323	17	1	0	0	0	341	**21:00**	106	0	0	0	0	0	106
9:15	238	6	2	1	0	0	247	**21:15**	82	1	0	0	0	0	83
9:30	226	13	3	2	0	0	244	**21:30**	80	0	0	0	0	0	80
9:45	193	10	0	1	0	0	204	**21:45**	86	0	0	0	0	0	86
10:00	148	8	0	0	0	0	156	**22:00**	87	0	0	0	0	0	87
10:15	141	9	3	0	0	0	153	**22:15**	85	0	0	0	0	0	85
10:30	129	9	3	0	0	0	141	**22:30**	77	1	0	0	0	0	78
10:45	144	11	3	0	1	0	159	**22:45**	62	0	0	0	1	0	63
11:00	129	9	4	1	0	1	144	**23:00**	75	2	0	0	0	0	77
11:15	136	6	1	0	0	0	143	**23:15**	54	0	1	0	0	1	56
11:30	146	3	0	0	0	0	149	**23:30**	50	0	0	0	0	0	50
11:45	152	8	0	1	0	0	161	**23:45**	30	0	0	0	0	0	30
TOTAL	5,634	267	34	10	2	10	5,957	**TOTAL**	6,293	188	26	10	4	18	6,539

AM PEAK HOUR	7:45 AM
AM PEAK VOLUME	1,558

AM PEAK HOUR	5:00 PM
AM PEAK VOLUME	761

TOTAL: AM+PM	11,927	455	60	20	6	28	12,496
% OF TOTAL	95.4%	3.6%	0.5%	0.2%	0.0%	0.2%	100.0%

CLASS 1	PASSENGER VEHICLES
CLASS 2	2-AXLE TRUCKS
CLASS 3	3-AXLE TRUCKS
CLASS 4	4 OR MORE AXLE TRUCKS
CLASS 5	RV
CLASS 6	BUS

APPENDIX C

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

List of Intersections
Buddhist Temple, Chino Hills

Vistro Model Number	Report Number	Key Study Intersections
3	1	Peyton Drive at Eucalyptus Avenue
15	2	Chino Hills Parkway at Grand Avenue
4	3	Chino Hills Parkway at Eucalyptus Avenue
5	4	Rustic Drive/Carbon Canyon Road at Chino Hills Parkway
6	5	Peyton Drive at Chino Hills Parkway
14	6	Pipeline Avenue at Chino Hills Parkway
13	7	Carbon Canyon Road at Carriage Hills Lane

APPENDIX C-I

EXISTING TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.453

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	9	489	68	166	353	337	251	67	6	115	148	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	489	68	166	353	337	251	67	6	115	148	203
Peak Hour Factor	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	156	22	53	113	108	80	21	2	37	47	65
Total Analysis Volume [veh/h]	11	625	87	212	451	430	321	86	8	147	189	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	15	34	0	0	46	0	0	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	67	57	57	67	62	62	15	15	15	15	15	15
g / C, Green / Cycle	0.75	0.64	0.64	0.75	0.69	0.69	0.16	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.13	0.13	0.12	0.13	0.24	0.09	0.09	0.05	0.09	0.13	0.12
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1298	2284	1142	1280	2464	1232	111	360	297	248	297	297
d1, Uniform Delay [s]	2.92	6.93	6.93	3.31	5.12	5.89	33.61	34.68	33.13	34.38	36.18	35.56
k, delay calibration	0.50	0.50	0.50	0.39	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.21	0.41	0.22	0.16	0.78	209.02	0.86	0.61	2.25	4.99	3.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.21	0.21	0.17	0.18	0.35	1.44	0.45	0.32	0.59	0.80	0.71
d, Delay for Lane Group [s/veh]	2.93	7.14	7.35	3.53	5.28	6.67	242.62	35.54	33.74	36.63	41.16	38.68
Lane Group LOS	A	A	A	A	A	A	F	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.04	1.77	1.84	0.91	1.34	3.08	8.62	3.28	1.84	3.05	5.34	4.55
50th-Percentile Queue Length [ft]	1.06	44.25	46.00	22.87	33.52	77.06	215.41	81.94	45.89	76.31	133.47	113.69
95th-Percentile Queue Length [veh]	0.08	3.19	3.31	1.65	2.41	5.55	15.31	5.90	3.30	5.49	9.13	8.05
95th-Percentile Queue Length [ft]	1.91	79.64	82.80	41.17	60.33	138.72	382.75	147.49	82.61	137.37	228.21	201.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.93	7.19	7.35	3.53	5.28	6.67	139.08	33.74	33.74	36.63	41.16	39.05
Movement LOS	A	A	A	A	A	A	F	C	C	D	D	D
d_A, Approach Delay [s/veh]	7.14			5.49			115.22			39.17		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	29.12											
Intersection LOS	C											
Intersection V/C	0.453											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	44.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.885

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	165	780	50	113	398	38	174	107	156	219	120	265
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	780	50	113	398	38	174	107	156	219	120	265
Peak Hour Factor	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	230	15	33	118	11	51	32	46	65	35	78
Total Analysis Volume [veh/h]	195	922	59	134	470	45	206	126	184	259	142	313
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	29	0	12	22	0	16	29	0	20	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	29	29	8	25	25	12	21	15	25
g / C, Green / Cycle	0.14	0.32	0.32	0.09	0.28	0.28	0.13	0.24	0.17	0.28
(v / s)_i Volume / Saturation Flow Rate	0.11	0.28	0.27	0.08	0.13	0.03	0.12	0.17	0.15	0.25
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	231	582	582	152	998	499	228	426	293	496
d1, Uniform Delay [s]	38.03	28.46	28.25	40.56	27.08	24.15	38.49	31.73	36.42	31.68
k, delay calibration	0.19	0.50	0.50	0.27	0.50	0.50	0.33	0.16	0.31	0.30
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.62	14.48	13.16	30.18	1.59	0.36	29.37	3.54	20.86	16.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

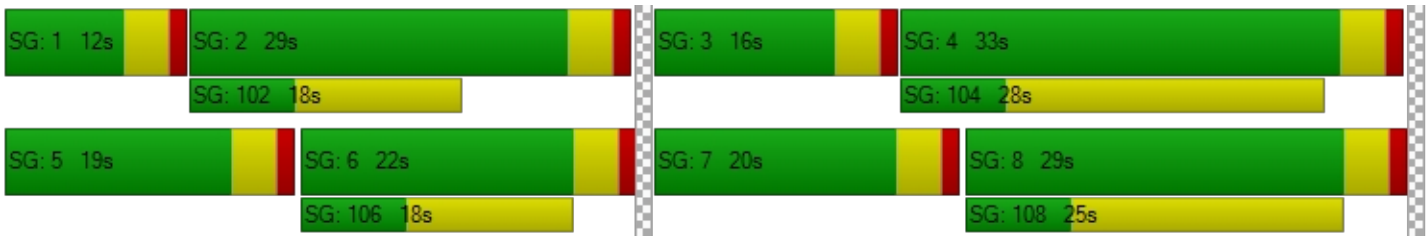
X, volume / capacity	0.84	0.85	0.83	0.88	0.47	0.09	0.91	0.73	0.88	0.92
d, Delay for Lane Group [s/veh]	51.65	42.94	41.41	70.75	28.67	24.51	67.86	35.27	57.28	48.20
Lane Group LOS	D	D	D	E	C	C	E	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	5.01	11.93	11.45	4.17	4.32	0.75	6.26	6.49	7.15	11.56
50th-Percentile Queue Length [ft]	125.14	298.25	286.32	104.35	108.06	18.75	156.57	162.30	178.74	289.11
95th-Percentile Queue Length [veh]	8.67	17.59	17.00	7.51	7.73	1.35	10.37	10.67	11.53	17.14
95th-Percentile Queue Length [ft]	216.87	439.86	425.07	187.82	193.31	33.74	259.17	266.77	288.37	428.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.65	42.23	41.41	70.75	28.67	24.51	67.86	35.27	35.27	57.28	48.20	48.20
Movement LOS	D	D	D	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	43.75			37.07			48.28			51.49		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.91											
Intersection LOS	D											
Intersection V/C	0.885											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	24.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.794

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	146	1	278	1	26	0	36	287	534	882	703	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1	278	1	26	0	36	287	534	882	703	15
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	0	73	0	7	0	9	75	139	230	184	4
Total Analysis Volume [veh/h]	153	1	290	1	27	0	38	300	558	922	735	16
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	10	29	0	29	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	4	38	38	29	63	63
g / C, Green / Cycle	0.12	0.12	0.12	0.12	0.12	0.04	0.42	0.42	0.33	0.70	0.70
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.08	0.00	0.02	0.02	0.08	0.31	0.29	0.21	0.21
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	229	217	217	121	217	72	1512	756	1044	1267	1267
d1, Uniform Delay [s]	38.27	37.89	37.89	34.85	35.36	42.26	16.52	21.95	28.71	4.98	4.98
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.35	3.57	3.56	0.03	0.25	5.98	0.29	6.37	2.68	0.60	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

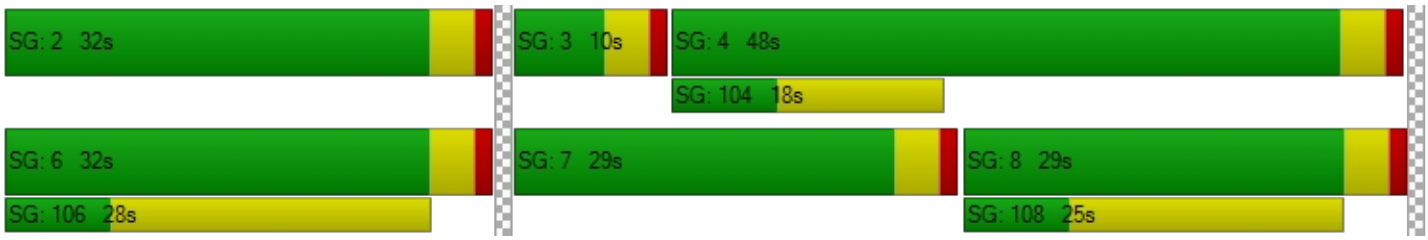
X, volume / capacity	0.67	0.67	0.67	0.01	0.12	0.53	0.20	0.74	0.88	0.30	0.30
d, Delay for Lane Group [s/veh]	41.62	41.46	41.45	34.87	35.61	48.24	16.82	28.32	31.39	5.58	5.57
Lane Group LOS	D	D	D	C	D	D	B	C	C	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.43	3.24	3.24	0.02	0.54	0.94	1.96	10.73	9.43	2.35	2.34
50th-Percentile Queue Length [ft]	85.68	81.07	80.97	0.50	13.48	23.46	49.05	268.17	235.83	58.68	58.41
95th-Percentile Queue Length [veh]	6.17	5.84	5.83	0.04	0.97	1.69	3.53	16.10	14.47	4.23	4.21
95th-Percentile Queue Length [ft]	154.22	145.93	145.75	0.90	24.27	42.23	88.28	402.45	361.75	105.63	105.14

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.62	41.46	41.46	34.87	35.61	35.61	48.24	16.82	28.32	31.39	5.58	5.57
Movement LOS	D	D	D	C	D	D	D	B	C	C	A	A
d_A, Approach Delay [s/veh]	41.51			35.58			25.31			19.80		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	24.74											
Intersection LOS	C											
Intersection V/C	0.794											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	38.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	420	313	340	159	156	177	115	401	59	198	873	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	420	313	340	159	156	177	115	401	59	198	873	176
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	80	87	41	40	45	30	103	15	51	224	45
Total Analysis Volume [veh/h]	432	322	349	163	160	182	118	412	61	203	897	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	35	0	19	32	32	10	32	0	24	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	44	44	12	40	50	6	28	28	9	31	31
g / C, Green / Cycle	0.15	0.40	0.40	0.11	0.36	0.46	0.06	0.25	0.25	0.08	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.19	0.10	0.04	0.10	0.04	0.13	0.13	0.06	0.25	0.10
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	492	725	725	193	1306	819	180	456	456	272	1016	508
d1, Uniform Delay [s]	45.62	23.93	24.37	47.88	23.41	18.19	50.97	35.49	35.28	49.25	37.82	31.57
k, delay calibration	0.11	0.50	0.50	0.20	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.21	1.97	2.28	16.55	0.19	0.63	4.04	0.95	0.88	4.04	2.75	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.44	0.48	0.84	0.12	0.22	0.66	0.53	0.51	0.75	0.88	0.36
d, Delay for Lane Group [s/veh]	50.83	25.89	26.65	64.43	23.60	18.82	55.00	36.44	36.16	53.28	40.57	31.99
Lane Group LOS	D	C	C	E	C	B	E	D	D	D	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	6.10	6.41	7.10	5.26	1.42	2.93	1.69	5.68	5.43	2.87	11.78	3.90
50th-Percentile Queue Length [ft]	152.57	160.29	177.52	131.47	35.55	73.23	42.35	141.89	135.63	71.87	294.46	97.43
95th-Percentile Queue Length [veh]	10.15	10.56	11.47	9.02	2.56	5.27	3.05	9.58	9.25	5.17	17.41	7.01
95th-Percentile Queue Length [ft]	253.86	264.11	286.77	225.49	63.99	131.82	76.22	239.56	231.13	129.37	435.17	175.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.83	25.89	26.65	64.43	23.60	18.82	55.00	36.32	36.16	53.28	40.57	31.99
Movement LOS	D	C	C	E	C	B	E	D	D	D	D	C
d_A, Approach Delay [s/veh]	35.90			35.05			40.04			41.37		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	38.49											
Intersection LOS	D											
Intersection V/C	0.674											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	48.6
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.218

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	253	3	0	1369	21	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	253	3	0	1369	21	9
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	1	0	359	6	2
Total Analysis Volume [veh/h]	265	3	0	1437	22	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.22	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.78	0.00	48.55	17.47
Movement LOS	A	A	A	A	E	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.84	0.84
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	21.05	21.05
d_A, Approach Delay [s/veh]	0.00		0.00		39.53	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	42.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	183	226	321	137	113	111	138	882	57	127	879	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	226	321	137	113	111	138	882	57	127	879	153
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	61	87	37	31	30	37	238	15	34	237	41
Total Analysis Volume [veh/h]	198	244	347	148	122	120	149	952	62	137	949	165
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	35	0	16	32	0	16	43	0	21	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	41	41	12	38	38	12	35	35	11	34	34
g / C, Green / Cycle	0.13	0.36	0.36	0.10	0.33	0.33	0.10	0.30	0.30	0.10	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.14	0.19	0.09	0.07	0.07	0.09	0.19	0.19	0.08	0.26	0.09
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	222	647	647	175	596	596	176	1086	543	165	1064	532
d1, Uniform Delay [s]	49.20	27.32	29.25	50.74	27.60	27.57	50.71	34.49	34.64	51.02	38.78	31.44
k, delay calibration	0.33	0.50	0.50	0.28	0.50	0.50	0.28	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.98	1.68	3.17	23.59	0.77	0.76	23.84	0.58	1.21	10.17	2.85	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.38	0.54	0.85	0.20	0.20	0.85	0.62	0.63	0.83	0.89	0.31
d, Delay for Lane Group [s/veh]	77.17	28.99	32.43	74.33	28.38	28.33	74.55	35.06	35.85	61.20	41.63	31.77
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	7.31	5.26	8.12	5.33	2.55	2.50	5.37	8.11	8.40	4.34	13.07	3.61
50th-Percentile Queue Length [ft]	182.70	131.49	203.04	133.17	63.63	62.51	134.34	202.74	209.88	108.43	326.76	90.36
95th-Percentile Queue Length [veh]	11.74	9.02	12.80	9.11	4.58	4.50	9.18	12.78	13.15	7.75	19.00	6.51
95th-Percentile Queue Length [ft]	293.54	225.52	319.89	227.79	114.54	112.51	229.38	319.50	328.68	193.82	474.99	162.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	77.17	28.99	32.43	74.33	28.38	28.33	74.55	35.30	35.85	61.20	41.63	31.77
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	42.59			45.80			40.35			42.47		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.18											
Intersection LOS	D											
Intersection V/C	0.733											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	42.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	511	610	167	110	219	244	108	235	64	148	774	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	511	610	167	110	219	244	108	235	64	148	774	128
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	157	43	28	56	63	28	60	16	38	199	33
Total Analysis Volume [veh/h]	525	626	171	113	225	251	111	241	66	152	795	131
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	24	35	0	21	32	0	12	32	32	22	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	45	45	9	34	34	8	28	52	12	32	32
g / C, Green / Cycle	0.18	0.41	0.41	0.08	0.31	0.31	0.07	0.25	0.47	0.11	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.21	0.07	0.13	0.14	0.07	0.07	0.04	0.09	0.26	0.25
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	577	739	739	141	563	563	125	916	848	182	518	518
d1, Uniform Delay [s]	44.24	24.80	24.34	49.62	29.70	30.20	50.56	32.80	15.99	48.21	37.90	37.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.28	0.11	0.11	0.11	0.29	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	3.02	2.62	10.16	2.11	2.54	37.08	0.15	0.04	9.61	15.36	10.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

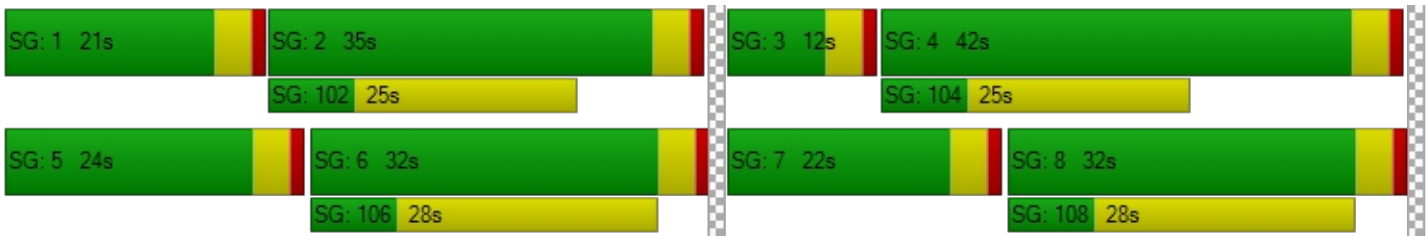
X, volume / capacity	0.91	0.56	0.52	0.80	0.40	0.45	0.89	0.26	0.08	0.84	0.92	0.87
d, Delay for Lane Group [s/veh]	50.17	27.81	26.96	59.78	31.81	32.74	87.64	32.95	16.03	57.82	53.26	47.61
Lane Group LOS	D	C	C	E	C	C	F	C	B	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	7.44	8.69	7.96	3.44	4.99	5.68	4.31	2.59	0.92	4.56	14.37	12.87
50th-Percentile Queue Length [ft]	186.00	217.32	198.89	86.08	124.71	142.05	107.71	64.72	22.97	114.07	359.20	321.63
95th-Percentile Queue Length [veh]	11.91	13.53	12.58	6.20	8.65	9.59	7.71	4.66	1.65	8.07	20.58	18.75
95th-Percentile Queue Length [ft]	297.83	338.20	314.53	154.95	216.29	239.78	192.81	116.49	41.35	201.65	514.61	468.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.17	27.52	26.96	59.78	31.81	32.74	87.64	32.95	16.03	57.82	50.98	47.61
Movement LOS	D	C	C	E	C	C	F	C	B	E	D	D
d_A, Approach Delay [s/veh]	36.44			37.57			44.80			51.54		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.44											
Intersection LOS	D											
Intersection V/C	0.740											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	61	474	181	201	499	299	220	275	36	142	268	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	474	181	201	499	299	220	275	36	142	268	211
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	135	52	57	142	85	63	78	10	41	76	60
Total Analysis Volume [veh/h]	70	541	207	229	570	341	251	314	41	162	306	241
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	17	37	0	0	43	0	0	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	62	51	51	62	53	53	20	20	20	20	20	20
g / C, Green / Cycle	0.69	0.57	0.57	0.69	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.13	0.13	0.16	0.19	0.07	0.07	0.20	0.10	0.17	0.13
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1141	2035	1017	1151	2104	1052	159	464	407	107	407	407
d1, Uniform Delay [s]	4.66	9.91	9.81	5.16	9.24	9.59	29.12	29.12	33.59	28.78	32.49	31.14
k, delay calibration	0.50	0.50	0.50	0.35	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.30	0.54	0.27	0.32	0.82	8.33	0.31	5.93	242.13	2.83	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

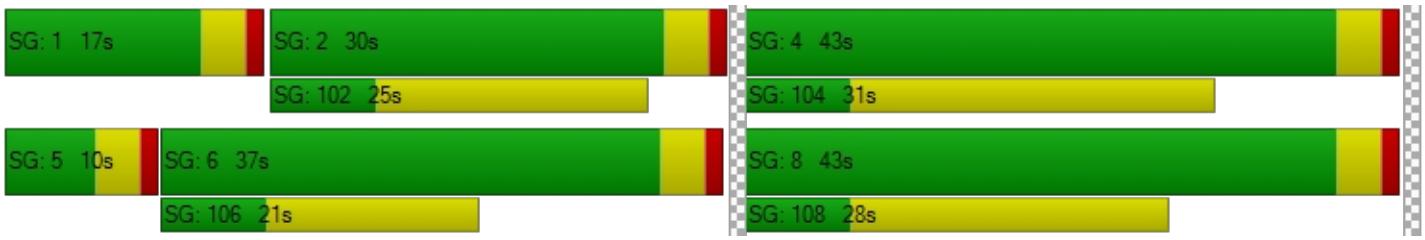
X, volume / capacity	0.06	0.25	0.23	0.20	0.27	0.32	0.79	0.27	0.87	1.52	0.75	0.59
d, Delay for Lane Group [s/veh]	4.76	10.21	10.35	5.43	9.55	10.41	37.45	29.43	39.52	270.91	35.32	32.52
Lane Group LOS	A	B	B	A	A	B	D	C	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	0.40	2.45	2.34	1.41	2.63	3.39	2.60	2.27	7.95	9.07	6.39	4.74
50th-Percentile Queue Length [ft]	9.92	61.24	58.53	35.17	65.73	84.75	65.02	56.80	198.86	226.75	159.82	118.49
95th-Percentile Queue Length [veh]	0.71	4.41	4.21	2.53	4.73	6.10	4.68	4.09	12.58	16.33	10.54	8.31
95th-Percentile Queue Length [ft]	17.85	110.24	105.35	63.30	118.31	152.56	117.04	102.25	314.50	408.14	263.48	207.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.76	10.22	10.35	5.43	9.55	10.41	35.88	39.52	39.52	270.91	35.32	32.52
Movement LOS	A	B	B	A	A	B	D	D	D	F	D	C
d_A, Approach Delay [s/veh]	9.78			8.98			37.00			88.20		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	31.53											
Intersection LOS	C											
Intersection V/C	0.490											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	176	496	96	275	727	117	48	132	57	41	147	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	496	96	275	727	117	48	132	57	41	147	149
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	131	25	73	192	31	13	35	15	11	39	39
Total Analysis Volume [veh/h]	186	523	101	290	767	123	51	139	60	43	155	157
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	31	22	0	31	22	0	10	31	0	11	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	38	38	18	43	43	5	19	4	19
g / C, Green / Cycle	0.13	0.40	0.40	0.19	0.46	0.46	0.05	0.20	0.04	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.17	0.17	0.21	0.07	0.03	0.11	0.03	0.17
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	224	709	709	329	1640	820	81	361	75	354
d1, Uniform Delay [s]	40.29	21.26	21.02	37.34	17.91	15.13	44.46	34.19	44.60	37.14
k, delay calibration	0.11	0.50	0.50	0.15	0.50	0.50	0.11	0.11	0.11	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.79	2.08	1.88	10.63	0.96	0.39	7.64	1.32	6.74	8.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

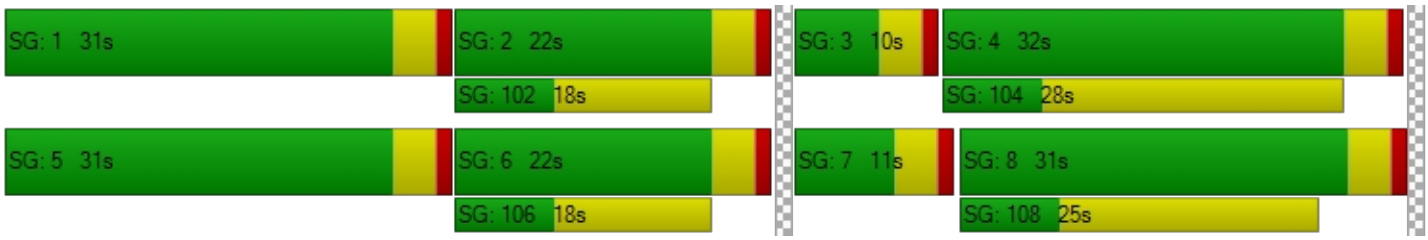
X, volume / capacity	0.83	0.45	0.43	0.88	0.47	0.15	0.63	0.55	0.57	0.88
d, Delay for Lane Group [s/veh]	48.09	23.34	22.90	47.97	18.87	15.52	52.10	35.51	51.34	45.54
Lane Group LOS	D	C	C	D	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	4.68	5.52	5.15	7.42	5.80	1.60	1.34	4.21	1.13	7.75
50th-Percentile Queue Length [ft]	116.88	137.90	128.65	185.42	145.08	40.03	33.60	105.30	28.19	193.69
95th-Percentile Queue Length [veh]	8.22	9.37	8.87	11.88	9.75	2.88	2.42	7.58	2.03	12.31
95th-Percentile Queue Length [ft]	205.52	234.20	221.66	297.08	243.85	72.05	60.48	189.45	50.74	307.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.09	23.17	22.90	47.97	18.87	15.52	52.10	35.51	35.51	51.34	45.54	45.54
Movement LOS	D	C	C	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	28.86			25.68			38.89			46.24		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.76											
Intersection LOS	C											
Intersection V/C	0.664											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.745

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	287	0	1206	7	0	2	22	689	130	321	439	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	0	1206	7	0	2	22	689	130	321	439	10
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	0	311	2	0	1	6	177	33	83	113	3
Total Analysis Volume [veh/h]	296	0	1242	7	0	2	23	710	134	331	452	10
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	51	0	0	51	0	10	29	0	10	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	35	35	35	3	31	31	12	40	40
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.17	0.35	0.35	0.00	0.00	0.01	0.20	0.07	0.10	0.13	0.13
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	708	707	707	165	707	52	1242	621	414	799	799
d1, Uniform Delay [s]	20.12	25.37	25.37	16.68	16.63	42.91	24.07	20.87	38.07	15.99	15.97
k, delay calibration	0.11	0.21	0.21	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	6.99	6.99	0.10	0.00	5.89	1.92	0.80	3.62	0.92	0.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.88	0.88	0.04	0.00	0.44	0.57	0.22	0.80	0.29	0.29
d, Delay for Lane Group [s/veh]	20.51	32.35	32.35	16.79	16.64	48.80	25.98	21.67	41.69	16.91	16.88
Lane Group LOS	C	C	C	B	B	D	C	C	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	4.49	13.04	13.04	0.09	0.02	0.58	6.29	2.09	3.70	3.13	3.11
50th-Percentile Queue Length [ft]	112.24	326.07	326.07	2.28	0.62	14.58	157.37	52.25	92.40	78.32	77.65
95th-Percentile Queue Length [veh]	7.96	18.97	18.97	0.16	0.04	1.05	10.41	3.76	6.65	5.64	5.59
95th-Percentile Queue Length [ft]	199.11	474.14	474.14	4.11	1.12	26.24	260.24	94.05	166.31	140.98	139.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.51	32.35	32.35	16.79	16.64	16.64	48.80	25.98	21.67	41.69	16.89	16.88
Movement LOS	C	C	C	B	B	B	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	30.07			16.75			25.92			27.24		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	28.21											
Intersection LOS	C											
Intersection V/C	0.745											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	72.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.920

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	172	253	180	203	323	141	283	1177	376	297	471	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	172	253	180	203	323	141	283	1177	376	297	471	171
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	65	46	52	83	36	73	303	97	77	121	44
Total Analysis Volume [veh/h]	177	261	186	209	333	145	292	1213	388	306	486	176
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	35	0	18	32	32	33	52	0	15	34	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	31	31	14	36	54	14	48	48	11	45	45
g / C, Green / Cycle	0.07	0.26	0.26	0.12	0.30	0.45	0.11	0.40	0.40	0.09	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.12	0.12	0.09	0.08	0.09	0.45	0.44	0.10	0.14	0.10
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	234	467	467	198	1091	813	368	718	718	293	1352	676
d1, Uniform Delay [s]	54.57	37.90	37.22	53.00	32.11	19.64	51.72	36.08	36.08	54.50	27.06	25.94
k, delay calibration	0.11	0.50	0.50	0.44	0.50	0.11	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.94	3.92	3.09	74.66	0.72	0.10	3.91	71.80	68.05	36.36	0.16	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.51	0.45	1.05	0.31	0.18	0.79	1.12	1.11	1.04	0.36	0.26
d, Delay for Lane Group [s/veh]	59.51	41.83	40.31	127.66	32.83	19.74	55.62	107.87	104.13	90.85	27.22	26.14
Lane Group LOS	E	D	D	F	C	B	E	F	F	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	2.78	6.49	5.56	10.08	3.85	2.46	4.48	34.77	34.02	5.91	5.06	3.53
50th-Percentile Queue Length [ft]	69.62	162.18	139.12	251.99	96.15	61.39	111.90	869.25	850.59	147.67	126.56	88.31
95th-Percentile Queue Length [veh]	5.01	10.66	9.43	15.63	6.92	4.42	7.95	48.15	46.95	10.04	8.75	6.36
95th-Percentile Queue Length [ft]	125.32	266.61	235.84	390.66	173.06	110.50	198.64	1203.86	1173.79	251.03	218.82	158.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.51	41.69	40.31	127.66	32.83	19.74	55.62	106.61	104.13	90.85	27.22	26.14
Movement LOS	E	D	D	F	C	B	E	F	F	F	C	C
d_A, Approach Delay [s/veh]	46.33			58.92			98.24			47.14		
Approach LOS	D			E			F			D		
d_I, Intersection Delay [s/veh]	72.14											
Intersection LOS	E											
Intersection V/C	0.920											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	53.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.108

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	1456	5	6	318	9	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1456	5	6	318	9	3
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	372	1	2	81	2	1
Total Analysis Volume [veh/h]	1487	5	6	325	9	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.11	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	13.11	0.00	53.71	34.19
Movement LOS	A	A	B	A	F	D
95th-Percentile Queue Length [veh]	0.00	0.00	0.04	0.00	0.42	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	1.01	0.00	10.54	10.54
d_A, Approach Delay [s/veh]	0.00		0.24		48.83	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.36					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	49.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.791

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	129	333	172	259	388	152	246	1090	150	219	818	324
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	129	333	172	259	388	152	246	1090	150	219	818	324
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	85	44	66	99	39	63	278	38	56	209	83
Total Analysis Volume [veh/h]	132	340	176	264	396	155	251	1112	153	223	835	331
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	35	0	25	32	0	24	35	0	25	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	34	34	20	43	43	20	32	32	18	30	30
g / C, Green / Cycle	0.09	0.28	0.28	0.17	0.36	0.36	0.16	0.27	0.27	0.15	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.08	0.15	0.14	0.16	0.16	0.15	0.15	0.24	0.23	0.13	0.23	0.18
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	161	506	506	290	642	642	277	964	482	251	909	455
d1, Uniform Delay [s]	53.39	36.57	35.93	48.93	29.59	29.08	49.38	42.11	41.94	50.23	43.69	41.12
k, delay calibration	0.11	0.50	0.50	0.35	0.50	0.50	0.35	0.11	0.32	0.25	0.11	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.91	4.06	3.28	26.84	2.27	1.92	26.83	2.78	12.86	20.56	4.31	4.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.54	0.48	0.91	0.45	0.41	0.91	0.88	0.87	0.89	0.92	0.73
d, Delay for Lane Group [s/veh]	63.30	40.63	39.20	75.77	31.86	30.99	76.21	44.89	54.80	70.78	48.00	45.63
Lane Group LOS	E	D	D	E	C	C	E	D	D	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	4.35	7.32	6.42	9.91	6.79	6.04	9.44	12.29	13.43	7.99	12.52	9.50
50th-Percentile Queue Length [ft]	108.85	183.07	160.50	247.73	169.71	150.93	235.97	307.21	335.82	199.81	312.91	237.55
95th-Percentile Queue Length [veh]	7.78	11.76	10.58	15.07	11.06	10.07	14.48	18.04	19.44	12.63	18.32	14.56
95th-Percentile Queue Length [ft]	194.40	294.01	264.39	376.79	276.54	251.67	361.94	450.94	486.09	315.72	457.96	363.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.30	40.34	39.20	75.77	31.62	30.99	76.21	47.25	54.80	70.78	48.00	45.63
Movement LOS	E	D	D	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	44.71			45.80			52.81			51.09		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	49.75											
Intersection LOS	D											
Intersection V/C	0.791											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	36.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	155	281	80	129	538	90	144	910	287	160	373	83
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	155	281	80	129	538	90	144	910	287	160	373	83
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	73	21	34	140	23	38	237	75	42	97	22
Total Analysis Volume [veh/h]	162	293	83	135	561	94	150	949	299	167	389	87
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	11	29	0	14	32	0	33	46	46	16	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	10	38	38	11	32	43	12	32	32
g / C, Green / Cycle	0.07	0.34	0.34	0.10	0.36	0.36	0.11	0.30	0.41	0.11	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.10	0.08	0.19	0.18	0.09	0.26	0.17	0.10	0.14	0.13
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	216	603	603	163	654	654	183	1087	733	195	556	556
d1, Uniform Delay [s]	48.15	26.03	25.85	46.67	26.16	25.88	45.91	34.78	22.13	45.67	29.03	28.78
k, delay calibration	0.11	0.50	0.50	0.26	0.50	0.50	0.11	0.11	0.50	0.29	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.18	1.41	1.28	21.74	2.86	2.59	8.75	2.36	1.68	23.59	0.55	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

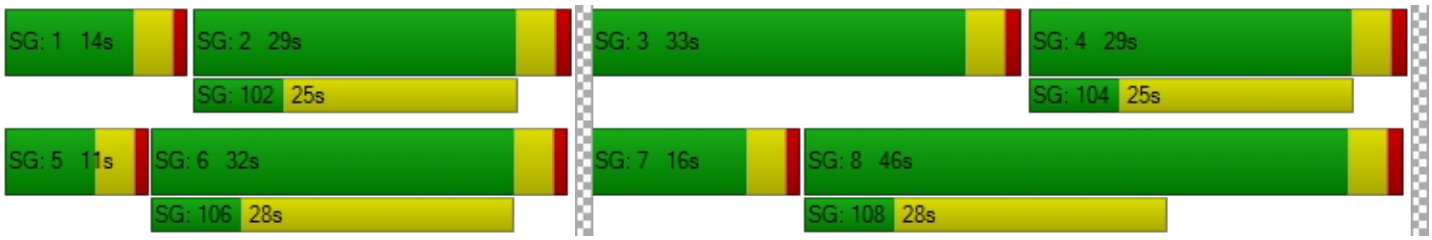
X, volume / capacity	0.75	0.32	0.30	0.83	0.51	0.49	0.82	0.87	0.41	0.86	0.44	0.42
d, Delay for Lane Group [s/veh]	53.33	27.44	27.13	68.41	29.02	28.47	54.66	37.15	23.81	69.26	29.58	29.28
Lane Group LOS	D	C	C	E	C	C	D	D	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	2.23	3.82	3.56	4.43	6.98	6.56	4.26	11.63	5.51	5.53	4.98	4.66
50th-Percentile Queue Length [ft]	55.81	95.49	88.96	110.80	174.47	163.92	106.42	290.74	137.87	138.26	124.51	116.51
95th-Percentile Queue Length [veh]	4.02	6.88	6.41	7.88	11.31	10.76	7.64	17.22	9.37	9.39	8.64	8.20
95th-Percentile Queue Length [ft]	100.45	171.89	160.13	197.11	282.78	268.90	191.01	430.56	234.15	234.67	216.01	205.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.33	27.34	27.13	68.41	28.80	28.47	54.66	37.15	23.81	69.26	29.47	29.28
Movement LOS	D	C	C	E	C	C	D	D	C	E	C	C
d_A, Approach Delay [s/veh]	35.13			35.53			36.17			39.78		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	36.54											
Intersection LOS	D											
Intersection V/C	0.706											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX C-II

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	29.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.453

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	9	490	68	166	354	337	251	67	6	115	148	203
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	490	68	166	354	337	251	67	6	115	148	203
Peak Hour Factor	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830	0.7830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	156	22	53	113	108	80	21	2	37	47	65
Total Analysis Volume [veh/h]	11	626	87	212	452	430	321	86	8	147	189	259
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	15	34	0	0	46	0	0	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	67	57	57	67	62	62	15	15	15	15	15	15
g / C, Green / Cycle	0.75	0.64	0.64	0.75	0.69	0.69	0.16	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.13	0.13	0.12	0.13	0.24	0.09	0.09	0.05	0.09	0.13	0.12
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1298	2284	1142	1280	2464	1232	111	360	297	248	297	297
d1, Uniform Delay [s]	2.92	6.93	6.94	3.31	5.12	5.89	33.61	34.68	33.13	34.38	36.18	35.56
k, delay calibration	0.50	0.50	0.50	0.39	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.01	0.21	0.41	0.22	0.16	0.78	209.02	0.86	0.61	2.25	4.99	3.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.21	0.21	0.17	0.18	0.35	1.44	0.45	0.32	0.59	0.80	0.71
d, Delay for Lane Group [s/veh]	2.93	7.14	7.35	3.53	5.29	6.67	242.62	35.54	33.74	36.63	41.16	38.68
Lane Group LOS	A	A	A	A	A	A	F	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.04	1.77	1.84	0.91	1.34	3.08	8.62	3.28	1.84	3.05	5.34	4.55
50th-Percentile Queue Length [ft]	1.06	44.32	46.07	22.87	33.60	77.06	215.41	81.94	45.89	76.31	133.47	113.69
95th-Percentile Queue Length [veh]	0.08	3.19	3.32	1.65	2.42	5.55	15.31	5.90	3.30	5.49	9.13	8.05
95th-Percentile Queue Length [ft]	1.91	79.77	82.93	41.17	60.48	138.72	382.75	147.49	82.61	137.37	228.21	201.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.93	7.19	7.35	3.53	5.29	6.67	139.08	33.74	33.74	36.63	41.16	39.05
Movement LOS	A	A	A	A	A	A	F	C	C	D	D	D
d_A, Approach Delay [s/veh]	7.15			5.49			115.22			39.17		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	29.10											
Intersection LOS	C											
Intersection V/C	0.453											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	44.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.886

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	165	781	50	113	399	38	174	107	156	219	120	265
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	165	781	50	113	399	38	174	107	156	219	120	265
Peak Hour Factor	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460	0.8460
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	231	15	33	118	11	51	32	46	65	35	78
Total Analysis Volume [veh/h]	195	923	59	134	472	45	206	126	184	259	142	313
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	29	0	12	22	0	16	29	0	20	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	29	29	8	25	25	12	21	15	25
g / C, Green / Cycle	0.14	0.32	0.32	0.09	0.28	0.28	0.13	0.24	0.17	0.28
(v / s)_i Volume / Saturation Flow Rate	0.11	0.28	0.27	0.08	0.13	0.03	0.12	0.17	0.15	0.25
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	231	582	582	152	998	499	228	426	293	496
d1, Uniform Delay [s]	38.03	28.47	28.26	40.56	27.10	24.15	38.49	31.73	36.42	31.68
k, delay calibration	0.19	0.50	0.50	0.27	0.50	0.50	0.33	0.16	0.31	0.30
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.62	14.55	13.22	30.18	1.61	0.36	29.37	3.54	20.86	16.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

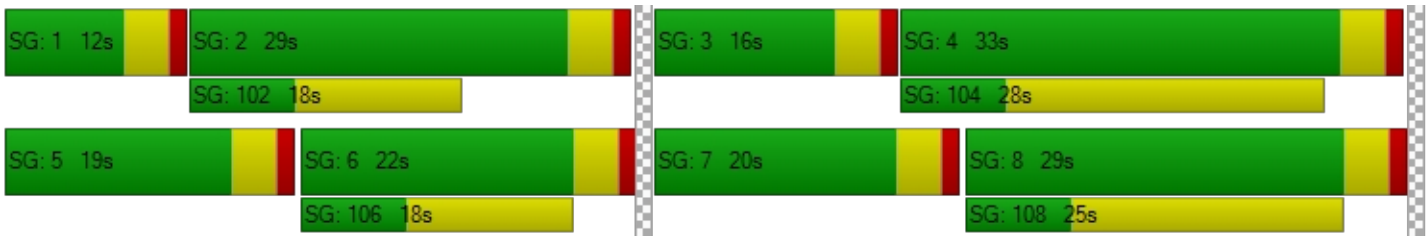
X, volume / capacity	0.84	0.85	0.83	0.88	0.47	0.09	0.91	0.73	0.88	0.92
d, Delay for Lane Group [s/veh]	51.65	43.02	41.48	70.75	28.70	24.51	67.86	35.27	57.28	48.20
Lane Group LOS	D	D	D	E	C	C	E	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	5.01	11.95	11.48	4.17	4.34	0.75	6.26	6.49	7.15	11.56
50th-Percentile Queue Length [ft]	125.14	298.86	286.90	104.35	108.61	18.75	156.57	162.30	178.74	289.11
95th-Percentile Queue Length [veh]	8.67	17.62	17.03	7.51	7.76	1.35	10.37	10.67	11.53	17.14
95th-Percentile Queue Length [ft]	216.87	440.62	425.80	187.82	194.07	33.74	259.17	266.77	288.37	428.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.65	42.31	41.48	70.75	28.70	24.51	67.86	35.27	35.27	57.28	48.20	48.20
Movement LOS	D	D	D	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	43.82			37.07			48.28			51.49		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.93											
Intersection LOS	D											
Intersection V/C	0.886											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	24.7
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.794

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	146	1	278	3	25	1	33	287	534	882	703	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1	278	3	25	1	33	287	534	882	703	20
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	0	73	1	7	0	9	75	139	230	184	5
Total Analysis Volume [veh/h]	153	1	290	3	26	1	34	300	558	922	735	21
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	10	29	0	29	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	11	3	38	38	29	64	64
g / C, Green / Cycle	0.12	0.12	0.12	0.12	0.12	0.04	0.42	0.42	0.33	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.09	0.08	0.08	0.00	0.02	0.02	0.08	0.31	0.29	0.21	0.21
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	229	217	217	121	217	67	1512	756	1044	1272	1272
d1, Uniform Delay [s]	38.27	37.89	37.89	34.89	35.36	42.39	16.52	21.95	28.71	4.90	4.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.35	3.57	3.56	0.08	0.25	5.84	0.29	6.37	2.68	0.60	0.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

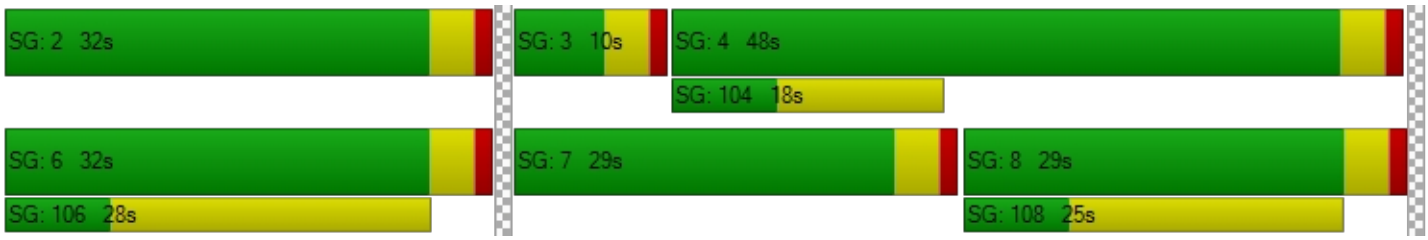
X, volume / capacity	0.67	0.67	0.67	0.02	0.12	0.51	0.20	0.74	0.88	0.30	0.30
d, Delay for Lane Group [s/veh]	41.62	41.46	41.45	34.97	35.61	48.23	16.82	28.32	31.39	5.50	5.49
Lane Group LOS	D	D	D	C	D	D	B	C	C	A	A
Critical Lane Group	Yes	No	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	3.43	3.24	3.24	0.06	0.54	0.84	1.96	10.73	9.43	2.34	2.32
50th-Percentile Queue Length [ft]	85.68	81.07	80.97	1.51	13.48	21.06	49.05	268.17	235.83	58.38	58.04
95th-Percentile Queue Length [veh]	6.17	5.84	5.83	0.11	0.97	1.52	3.53	16.10	14.47	4.20	4.18
95th-Percentile Queue Length [ft]	154.22	145.93	145.75	2.71	24.27	37.91	88.28	402.45	361.75	105.09	104.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.62	41.46	41.46	34.97	35.61	35.61	48.23	16.82	28.32	31.39	5.50	5.49
Movement LOS	D	D	D	C	D	D	D	B	C	C	A	A
d_A, Approach Delay [s/veh]	41.51			35.55			25.21			19.72		
Approach LOS	D			D			C			B		
d_I, Intersection Delay [s/veh]	24.67											
Intersection LOS	C											
Intersection V/C	0.794											

Sequence

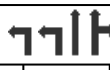
Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	38.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.675

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	420	313	340	159	156	179	116	403	59	198	875	176
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	420	313	340	159	156	179	116	403	59	198	875	176
Peak Hour Factor	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730	0.9730
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	108	80	87	41	40	46	30	104	15	51	225	45
Total Analysis Volume [veh/h]	432	322	349	163	160	184	119	414	61	203	899	181
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	35	0	19	32	32	10	32	0	24	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	44	44	12	40	50	6	28	28	9	31	31
g / C, Green / Cycle	0.15	0.40	0.40	0.11	0.36	0.46	0.06	0.25	0.25	0.08	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.14	0.18	0.19	0.10	0.04	0.10	0.04	0.13	0.13	0.06	0.25	0.10
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	492	724	724	193	1304	819	180	457	457	272	1018	509
d1, Uniform Delay [s]	45.62	23.97	24.42	47.88	23.45	18.25	50.98	35.46	35.25	49.25	37.79	31.52
k, delay calibration	0.11	0.50	0.50	0.20	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.21	1.97	2.29	16.55	0.19	0.64	4.13	0.96	0.88	4.04	2.75	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.88	0.44	0.48	0.84	0.12	0.22	0.66	0.53	0.51	0.75	0.88	0.36
d, Delay for Lane Group [s/veh]	50.83	25.94	26.70	64.43	23.64	18.88	55.12	36.41	36.13	53.28	40.54	31.94
Lane Group LOS	D	C	C	E	C	B	E	D	D	D	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	6.10	6.42	7.11	5.26	1.42	2.97	1.71	5.70	5.45	2.87	11.80	3.89
50th-Percentile Queue Length [ft]	152.57	160.48	177.73	131.47	35.59	74.23	42.76	142.45	136.18	71.87	295.08	97.34
95th-Percentile Queue Length [veh]	10.15	10.57	11.48	9.02	2.56	5.34	3.08	9.61	9.27	5.17	17.44	7.01
95th-Percentile Queue Length [ft]	253.86	264.36	287.05	225.49	64.06	133.62	76.96	240.32	231.87	129.37	435.93	175.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.83	25.94	26.70	64.43	23.64	18.88	55.12	36.30	36.13	53.28	40.54	31.94
Movement LOS	D	C	C	E	C	B	E	D	D	D	D	C
d_A, Approach Delay [s/veh]	35.93			35.03			40.05			41.35		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	38.49											
Intersection LOS	D											
Intersection V/C	0.675											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	48.8
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.219

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	254	3	0	1370	21	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	254	3	0	1370	21	9
Peak Hour Factor	0.9530	0.9530	0.9530	0.9530	0.9530	0.9530
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	1	0	359	6	2
Total Analysis Volume [veh/h]	267	3	0	1438	22	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.22	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.78	0.00	48.78	17.56
Movement LOS	A	A	A	A	E	C
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.85	0.85
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	21.15	21.15
d_A, Approach Delay [s/veh]	0.00		0.00		39.71	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	183	226	321	137	113	111	138	884	57	127	881	153
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	226	321	137	113	111	138	884	57	127	881	153
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	61	87	37	31	30	37	239	15	34	238	41
Total Analysis Volume [veh/h]	198	244	347	148	122	120	149	955	62	137	951	165
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	35	0	16	32	0	16	43	0	21	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	41	41	12	38	38	12	35	35	11	34	34
g / C, Green / Cycle	0.13	0.36	0.36	0.10	0.33	0.33	0.10	0.30	0.30	0.10	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.12	0.14	0.19	0.09	0.07	0.07	0.09	0.19	0.19	0.08	0.26	0.09
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	223	644	644	176	594	594	177	1089	544	166	1066	533
d1, Uniform Delay [s]	49.19	27.48	29.43	50.71	27.75	27.71	50.68	34.48	34.63	50.99	38.77	31.41
k, delay calibration	0.33	0.50	0.50	0.28	0.50	0.50	0.28	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	27.54	1.70	3.22	22.96	0.78	0.77	23.22	0.58	1.21	9.82	2.85	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.38	0.54	0.84	0.21	0.20	0.84	0.62	0.63	0.83	0.89	0.31
d, Delay for Lane Group [s/veh]	76.72	29.18	32.65	73.67	28.53	28.48	73.89	35.05	35.84	60.82	41.62	31.74
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	7.29	5.27	8.15	5.30	2.55	2.51	5.35	8.13	8.42	4.32	13.10	3.61
50th-Percentile Queue Length [ft]	182.18	131.87	203.67	132.57	63.79	62.66	133.74	203.35	210.53	108.11	327.49	90.30
95th-Percentile Queue Length [veh]	11.71	9.04	12.83	9.08	4.59	4.51	9.14	12.81	13.18	7.73	19.04	6.50
95th-Percentile Queue Length [ft]	292.86	226.03	320.69	226.99	114.82	112.79	228.57	320.28	329.51	193.37	475.88	162.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	76.72	29.18	32.65	73.67	28.53	28.48	73.89	35.29	35.84	60.82	41.62	31.74
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	C
d_A, Approach Delay [s/veh]	42.64			45.65			40.25			42.42		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.11											
Intersection LOS	D											
Intersection V/C	0.734											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	42.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.740

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	511	611	167	110	220	244	108	235	64	148	774	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	511	611	167	110	220	244	108	235	64	148	774	128
Peak Hour Factor	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740	0.9740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	157	43	28	56	63	28	60	16	38	199	33
Total Analysis Volume [veh/h]	525	627	171	113	226	251	111	241	66	152	795	131
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	24	35	0	21	32	0	12	32	32	22	42	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	20	45	45	9	34	34	8	28	52	12	32	32
g / C, Green / Cycle	0.18	0.41	0.41	0.08	0.31	0.31	0.07	0.25	0.47	0.11	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.21	0.07	0.13	0.14	0.07	0.07	0.04	0.09	0.26	0.25
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	577	739	739	141	563	563	125	916	848	182	518	518
d1, Uniform Delay [s]	44.24	24.81	24.35	49.62	29.72	30.20	50.56	32.80	15.99	48.21	37.90	37.26
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.28	0.11	0.11	0.11	0.29	0.26
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.93	3.02	2.63	10.16	2.12	2.54	37.08	0.15	0.04	9.61	15.36	10.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

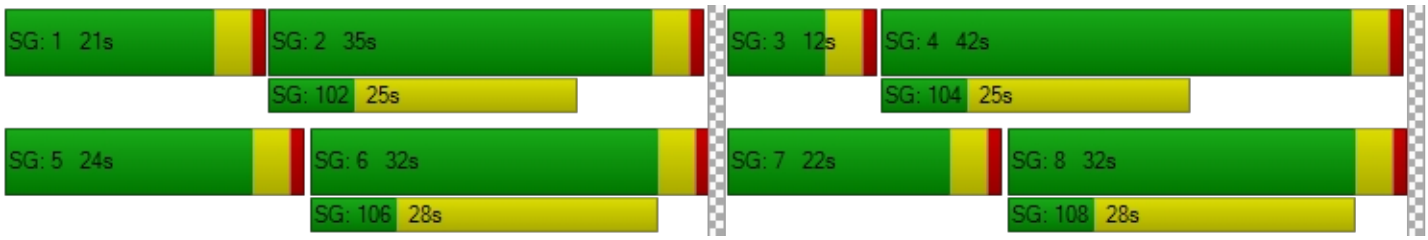
X, volume / capacity	0.91	0.56	0.52	0.80	0.40	0.45	0.89	0.26	0.08	0.84	0.92	0.87
d, Delay for Lane Group [s/veh]	50.17	27.83	26.97	59.78	31.84	32.74	87.64	32.95	16.03	57.82	53.26	47.61
Lane Group LOS	D	C	C	E	C	C	F	C	B	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	7.44	8.71	7.97	3.44	5.01	5.68	4.31	2.59	0.92	4.56	14.37	12.87
50th-Percentile Queue Length [ft]	186.00	217.67	199.24	86.08	125.37	142.05	107.71	64.72	22.97	114.07	359.20	321.63
95th-Percentile Queue Length [veh]	11.91	13.55	12.60	6.20	8.69	9.59	7.71	4.66	1.65	8.07	20.58	18.75
95th-Percentile Queue Length [ft]	297.83	338.65	314.98	154.95	217.18	239.78	192.81	116.49	41.35	201.65	514.61	468.68

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.17	27.54	26.97	59.78	31.84	32.74	87.64	32.95	16.03	57.82	50.98	47.61
Movement LOS	D	C	C	E	C	C	F	C	B	E	D	D
d_A, Approach Delay [s/veh]	36.45			37.58			44.80			51.54		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	42.44											
Intersection LOS	D											
Intersection V/C	0.740											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	31.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	61	475	181	201	500	299	220	275	36	142	268	211
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	475	181	201	500	299	220	275	36	142	268	211
Peak Hour Factor	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760	0.8760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	136	52	57	143	85	63	78	10	41	76	60
Total Analysis Volume [veh/h]	70	542	207	229	571	341	251	314	41	162	306	241
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	17	37	0	0	43	0	0	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	62	51	51	62	53	53	20	20	20	20	20	20
g / C, Green / Cycle	0.69	0.57	0.57	0.69	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.04	0.14	0.13	0.13	0.16	0.19	0.07	0.07	0.20	0.10	0.17	0.13
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1141	2035	1017	1151	2104	1052	159	464	407	107	407	407
d1, Uniform Delay [s]	4.66	9.92	9.81	5.16	9.24	9.59	29.12	29.12	33.59	28.78	32.49	31.14
k, delay calibration	0.50	0.50	0.50	0.35	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.30	0.54	0.27	0.32	0.82	8.33	0.31	5.93	242.13	2.83	1.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

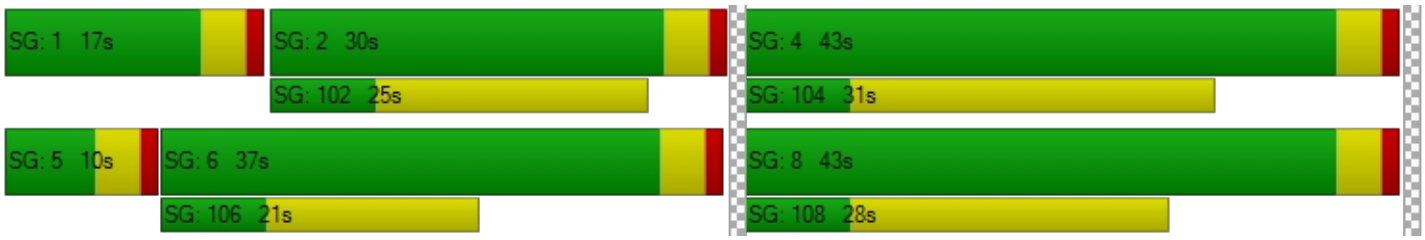
X, volume / capacity	0.06	0.25	0.23	0.20	0.27	0.32	0.79	0.27	0.87	1.52	0.75	0.59
d, Delay for Lane Group [s/veh]	4.76	10.21	10.35	5.43	9.56	10.41	37.45	29.43	39.52	270.91	35.32	32.52
Lane Group LOS	A	B	B	A	A	B	D	C	D	F	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	0.40	2.45	2.34	1.41	2.63	3.39	2.60	2.27	7.95	9.07	6.39	4.74
50th-Percentile Queue Length [ft]	9.92	61.34	58.62	35.17	65.86	84.75	65.02	56.80	198.86	226.75	159.82	118.49
95th-Percentile Queue Length [veh]	0.71	4.42	4.22	2.53	4.74	6.10	4.68	4.09	12.58	16.33	10.54	8.31
95th-Percentile Queue Length [ft]	17.86	110.41	105.52	63.30	118.55	152.56	117.04	102.25	314.50	408.14	263.48	207.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.76	10.22	10.35	5.43	9.56	10.41	35.88	39.52	39.52	270.91	35.32	32.52
Movement LOS	A	B	B	A	A	B	D	D	D	F	D	C
d_A, Approach Delay [s/veh]	9.79			8.98			37.00			88.20		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	31.52											
Intersection LOS	C											
Intersection V/C	0.490											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	30.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.664

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	176	497	96	275	728	117	48	132	57	41	147	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	497	96	275	728	117	48	132	57	41	147	149
Peak Hour Factor	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480	0.9480
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	131	25	73	192	31	13	35	15	11	39	39
Total Analysis Volume [veh/h]	186	524	101	290	768	123	51	139	60	43	155	157
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	22	0	31	27	0	10	32	0	10	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	38	38	18	43	43	5	19	4	19
g / C, Green / Cycle	0.13	0.40	0.40	0.19	0.46	0.46	0.05	0.20	0.04	0.20
(v / s)_i Volume / Saturation Flow Rate	0.11	0.18	0.17	0.17	0.21	0.07	0.03	0.11	0.03	0.17
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	223	709	709	329	1643	821	81	361	75	354
d1, Uniform Delay [s]	40.35	21.27	21.02	37.34	17.88	15.10	44.46	34.19	44.60	37.14
k, delay calibration	0.11	0.50	0.50	0.15	0.50	0.50	0.11	0.11	0.11	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.00	2.08	1.89	10.63	0.96	0.39	7.64	1.32	6.74	8.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

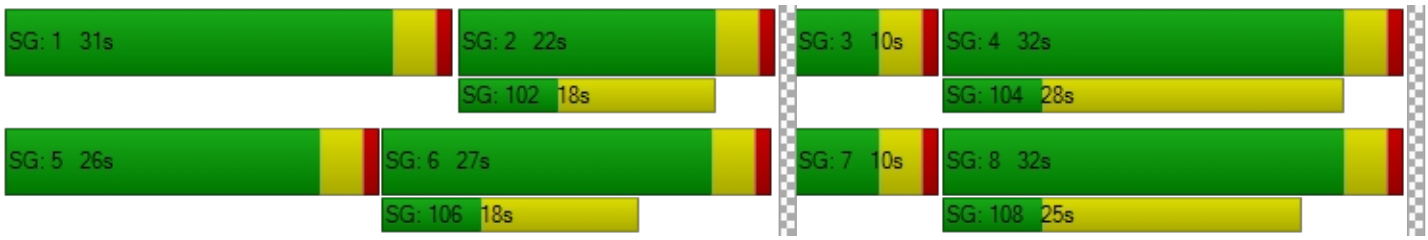
X, volume / capacity	0.84	0.45	0.43	0.88	0.47	0.15	0.63	0.55	0.57	0.88
d, Delay for Lane Group [s/veh]	48.35	23.35	22.91	47.97	18.84	15.48	52.10	35.51	51.34	45.54
Lane Group LOS	D	C	C	D	B	B	D	D	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	4.69	5.53	5.16	7.42	5.80	1.60	1.34	4.21	1.13	7.75
50th-Percentile Queue Length [ft]	117.23	138.18	128.91	185.42	145.12	39.97	33.60	105.30	28.19	193.69
95th-Percentile Queue Length [veh]	8.24	9.38	8.88	11.88	9.76	2.88	2.42	7.58	2.03	12.31
95th-Percentile Queue Length [ft]	206.01	234.57	222.02	297.08	243.90	71.95	60.48	189.45	50.74	307.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.35	23.18	22.91	47.97	18.84	15.48	52.10	35.51	35.51	51.34	45.54	45.54
Movement LOS	D	C	C	D	B	B	D	D	D	D	D	D
d_A, Approach Delay [s/veh]	28.92			25.64			38.89			46.24		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	30.76											
Intersection LOS	C											
Intersection V/C	0.664											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	28.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.745

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	287	1	1206	11	1	3	23	689	130	321	439	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	287	1	1206	11	1	3	23	689	130	321	439	12
Peak Hour Factor	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710	0.9710
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	0	311	3	0	1	6	177	33	83	113	3
Total Analysis Volume [veh/h]	296	1	1242	11	1	3	24	710	134	331	452	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	51	0	0	51	0	10	29	0	10	29	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	35	35	35	35	35	3	31	31	12	40	40
g / C, Green / Cycle	0.39	0.39	0.39	0.39	0.39	0.03	0.35	0.35	0.13	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.17	0.35	0.35	0.01	0.00	0.01	0.20	0.07	0.10	0.13	0.13
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	708	707	707	165	707	53	1241	620	414	797	797
d1, Uniform Delay [s]	20.10	25.36	25.36	16.71	16.64	42.85	24.09	20.89	38.07	16.07	16.05
k, delay calibration	0.11	0.21	0.21	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	7.00	7.00	0.17	0.00	5.85	1.92	0.80	3.62	0.93	0.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.88	0.88	0.07	0.01	0.45	0.57	0.22	0.80	0.29	0.29
d, Delay for Lane Group [s/veh]	20.49	32.36	32.36	16.88	16.64	48.70	26.01	21.69	41.69	17.00	16.97
Lane Group LOS	C	C	C	B	B	D	C	C	D	B	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	4.49	13.05	13.05	0.14	0.05	0.61	6.30	2.09	3.70	3.16	3.13
50th-Percentile Queue Length [ft]	112.18	326.35	326.35	3.60	1.25	15.16	157.46	52.28	92.40	79.00	78.19
95th-Percentile Queue Length [veh]	7.96	18.98	18.98	0.26	0.09	1.09	10.41	3.76	6.65	5.69	5.63
95th-Percentile Queue Length [ft]	199.03	474.49	474.49	6.48	2.25	27.29	260.35	94.10	166.32	142.20	140.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	20.49	32.36	32.36	16.88	16.64	16.64	48.70	26.01	21.69	41.69	16.98	16.97
Movement LOS	C	C	C	B	B	B	D	C	C	D	B	B
d_A, Approach Delay [s/veh]	30.07			16.81			25.97			27.27		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	28.21											
Intersection LOS	C											
Intersection V/C	0.745											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	72.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.921

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	172	253	180	203	323	143	285	1179	376	297	473	171
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	172	253	180	203	323	143	285	1179	376	297	473	171
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	65	46	52	83	37	73	304	97	77	122	44
Total Analysis Volume [veh/h]	177	261	186	209	333	147	294	1215	388	306	488	176
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	35	0	18	32	32	35	52	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	31	31	14	36	54	14	48	48	11	45	45
g / C, Green / Cycle	0.07	0.26	0.26	0.12	0.30	0.45	0.12	0.40	0.40	0.09	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.06	0.13	0.12	0.12	0.09	0.08	0.09	0.45	0.44	0.10	0.14	0.10
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	234	467	467	198	1091	814	371	718	718	293	1348	674
d1, Uniform Delay [s]	54.57	37.91	37.22	53.00	32.11	19.60	51.65	36.08	36.08	54.50	27.15	26.02
k, delay calibration	0.11	0.50	0.50	0.44	0.50	0.11	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.94	3.92	3.09	74.66	0.72	0.11	3.85	72.17	68.70	36.36	0.16	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.76	0.51	0.45	1.05	0.31	0.18	0.79	1.12	1.11	1.04	0.36	0.26
d, Delay for Lane Group [s/veh]	59.51	41.83	40.31	127.66	32.83	19.70	55.50	108.25	104.77	90.85	27.32	26.22
Lane Group LOS	E	D	D	F	C	B	E	F	F	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	2.78	6.49	5.56	10.08	3.85	2.49	4.50	34.85	34.15	5.91	5.10	3.54
50th-Percentile Queue Length [ft]	69.62	162.18	139.12	251.99	96.15	62.19	112.55	871.15	853.82	147.67	127.39	88.47
95th-Percentile Queue Length [veh]	5.01	10.66	9.43	15.63	6.92	4.48	7.98	48.28	47.16	10.04	8.80	6.37
95th-Percentile Queue Length [ft]	125.32	266.61	235.84	390.66	173.06	111.94	199.55	1206.91	1178.98	251.03	219.94	159.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.51	41.69	40.31	127.66	32.83	19.70	55.50	107.08	104.77	90.85	27.32	26.22
Movement LOS	E	D	D	F	C	B	E	F	F	F	C	C
d_A, Approach Delay [s/veh]	46.34			58.80			98.61			47.16		
Approach LOS	D			E			F			D		
d_I, Intersection Delay [s/veh]	72.31											
Intersection LOS	E											
Intersection V/C	0.921											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	53.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.108

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	1457	5	6	319	9	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1457	5	6	319	9	3
Peak Hour Factor	0.9790	0.9790	0.9790	0.9790	0.9790	0.9790
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	372	1	2	81	2	1
Total Analysis Volume [veh/h]	1488	5	6	326	9	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.11	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	13.12	0.00	53.87	34.25
Movement LOS	A	A	B	A	F	D
95th-Percentile Queue Length [veh]	0.00	0.00	0.04	0.00	0.42	0.42
95th-Percentile Queue Length [ft]	0.00	0.00	1.01	0.00	10.57	10.57
d_A, Approach Delay [s/veh]	0.00		0.24		48.97	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.36					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	49.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.792

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	129	333	172	259	388	152	246	1092	150	219	820	324
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	129	333	172	259	388	152	246	1092	150	219	820	324
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	85	44	66	99	39	63	279	38	56	209	83
Total Analysis Volume [veh/h]	132	340	176	264	396	155	251	1114	153	223	837	331
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	28	35	0	25	32	0	24	35	0	25	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	34	34	20	43	43	20	32	32	18	30	30
g / C, Green / Cycle	0.09	0.28	0.28	0.17	0.36	0.36	0.16	0.27	0.27	0.15	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.08	0.15	0.14	0.16	0.16	0.15	0.15	0.24	0.23	0.13	0.23	0.18
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	161	505	505	290	642	642	277	965	483	251	911	455
d1, Uniform Delay [s]	53.39	36.61	35.96	48.93	29.62	29.11	49.38	42.09	41.92	50.23	43.68	41.08
k, delay calibration	0.11	0.50	0.50	0.35	0.50	0.50	0.35	0.11	0.32	0.25	0.11	0.22
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.91	4.07	3.29	26.84	2.27	1.92	26.83	2.78	12.89	20.56	4.34	4.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.54	0.48	0.91	0.45	0.41	0.91	0.88	0.87	0.89	0.92	0.73
d, Delay for Lane Group [s/veh]	63.30	40.69	39.25	75.77	31.90	31.04	76.21	44.87	54.81	70.78	48.02	45.56
Lane Group LOS	E	D	D	E	C	C	E	D	D	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	4.35	7.33	6.43	9.91	6.79	6.04	9.44	12.31	13.46	7.99	12.55	9.49
50th-Percentile Queue Length [ft]	108.85	183.22	160.63	247.73	169.85	151.05	235.97	307.64	336.44	199.81	313.78	237.34
95th-Percentile Queue Length [veh]	7.78	11.77	10.58	15.07	11.07	10.07	14.48	18.06	19.47	12.63	18.36	14.55
95th-Percentile Queue Length [ft]	194.40	294.21	264.55	376.79	276.72	251.83	361.94	451.46	486.84	315.72	459.03	363.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.30	40.40	39.25	75.77	31.67	31.04	76.21	47.24	54.81	70.78	48.02	45.56
Movement LOS	E	D	D	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	44.75			45.83			52.79			51.08		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	49.76											
Intersection LOS	D											
Intersection V/C	0.792											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	36.5
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	155	282	80	129	539	90	144	910	287	160	373	83
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	155	282	80	129	539	90	144	910	287	160	373	83
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	74	21	34	141	23	38	237	75	42	97	22
Total Analysis Volume [veh/h]	162	294	83	135	562	94	150	949	299	167	389	87
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	11	29	0	14	32	0	33	46	46	16	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	35	35	10	38	38	11	32	43	12	32	32
g / C, Green / Cycle	0.07	0.34	0.34	0.10	0.36	0.36	0.11	0.30	0.41	0.11	0.31	0.31
(v / s)_i Volume / Saturation Flow Rate	0.05	0.11	0.10	0.08	0.19	0.18	0.09	0.26	0.17	0.10	0.14	0.13
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	216	603	603	163	654	654	183	1087	733	195	556	556
d1, Uniform Delay [s]	48.15	26.04	25.85	46.67	26.17	25.89	45.91	34.78	22.13	45.67	29.03	28.78
k, delay calibration	0.11	0.50	0.50	0.26	0.50	0.50	0.11	0.11	0.50	0.29	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.18	1.41	1.29	21.74	2.86	2.60	8.75	2.36	1.68	23.59	0.55	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

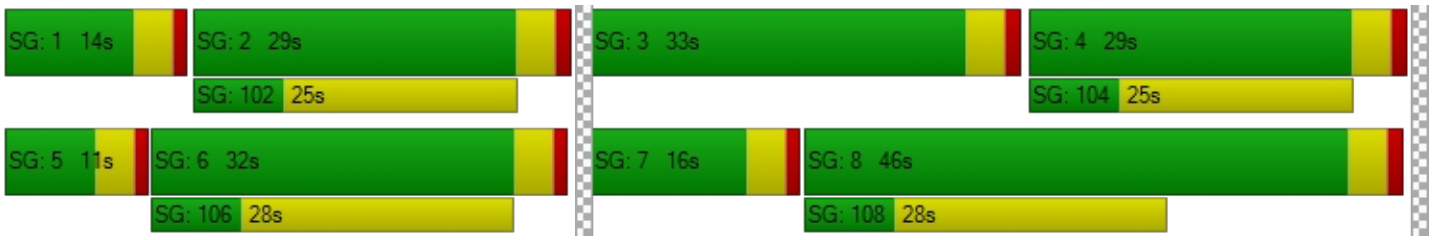
X, volume / capacity	0.75	0.32	0.30	0.83	0.51	0.49	0.82	0.87	0.41	0.86	0.44	0.42
d, Delay for Lane Group [s/veh]	53.33	27.45	27.14	68.41	29.04	28.49	54.66	37.15	23.81	69.26	29.58	29.28
Lane Group LOS	D	C	C	E	C	C	D	D	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	2.23	3.83	3.57	4.43	6.99	6.57	4.26	11.63	5.51	5.53	4.98	4.66
50th-Percentile Queue Length [ft]	55.81	95.78	89.23	110.80	174.81	164.24	106.42	290.74	137.87	138.26	124.51	116.51
95th-Percentile Queue Length [veh]	4.02	6.90	6.42	7.88	11.33	10.77	7.64	17.22	9.37	9.39	8.64	8.20
95th-Percentile Queue Length [ft]	100.45	172.40	160.62	197.11	283.23	269.33	191.01	430.56	234.15	234.67	216.01	205.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.33	27.35	27.14	68.41	28.82	28.49	54.66	37.15	23.81	69.26	29.47	29.28
Movement LOS	D	C	C	E	C	C	D	D	C	E	C	C
d_A, Approach Delay [s/veh]	35.13			35.54			36.17			39.78		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	36.54											
Intersection LOS	D											
Intersection V/C	0.707											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX C-III

YEAR 2025 CUMULATIVE TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	16	619	82	196	455	398	297	79	7	141	175	240
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	619	82	196	455	398	297	79	7	141	175	240
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	163	22	52	120	105	78	21	2	37	46	63
Total Analysis Volume [veh/h]	17	652	86	206	479	419	313	83	7	148	184	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	15	34	0	0	46	0	0	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	68	57	57	68	61	61	15	15	15	15	15	15
g / C, Green / Cycle	0.75	0.64	0.64	0.75	0.68	0.68	0.16	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.14	0.14	0.12	0.13	0.23	0.09	0.09	0.05	0.09	0.13	0.11
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1297	2296	1148	1283	2451	1226	111	355	291	246	291	291
d1, Uniform Delay [s]	2.85	6.84	6.84	3.21	5.29	5.98	33.86	34.86	33.32	34.67	36.33	35.73
k, delay calibration	0.50	0.50	0.50	0.37	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.21	0.43	0.20	0.18	0.76	196.10	0.86	0.60	2.37	4.99	3.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.21	0.21	0.16	0.20	0.34	1.41	0.44	0.31	0.60	0.80	0.71
d, Delay for Lane Group [s/veh]	2.87	7.05	7.27	3.41	5.47	6.74	229.97	35.73	33.92	37.04	41.33	38.86
Lane Group LOS	A	A	A	A	A	A	F	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.06	1.82	1.89	0.86	1.46	3.03	8.19	3.20	1.76	3.09	5.22	4.44
50th-Percentile Queue Length [ft]	1.61	45.49	47.36	21.54	36.57	75.78	204.77	80.08	44.05	77.35	130.41	111.06
95th-Percentile Queue Length [veh]	0.12	3.28	3.41	1.55	2.63	5.46	14.58	5.77	3.17	5.57	8.96	7.90
95th-Percentile Queue Length [ft]	2.90	81.88	85.24	38.78	65.83	136.40	364.54	144.14	79.29	139.24	224.05	197.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.87	7.11	7.27	3.41	5.47	6.74	132.85	33.92	33.92	37.04	41.33	39.24
Movement LOS	A	A	A	A	A	A	F	C	C	D	D	D
d_A, Approach Delay [s/veh]	7.03			5.57			110.75			39.38		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	27.79											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	56.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	197	1050	59	133	604	45	206	127	193	258	142	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	1050	59	133	604	45	206	127	193	258	142	315
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	276	16	35	159	12	54	33	51	68	37	83
Total Analysis Volume [veh/h]	207	1105	62	140	636	47	217	134	203	272	149	332
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	31	41	0	14	24	0	19	31	0	24	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	38	38	10	33	33	15	27	19	31
g / C, Green / Cycle	0.14	0.34	0.34	0.09	0.30	0.30	0.14	0.24	0.18	0.28
(v / s)_i Volume / Saturation Flow Rate	0.12	0.33	0.32	0.08	0.18	0.03	0.13	0.19	0.16	0.27
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	240	621	621	156	1063	532	233	436	300	507
d1, Uniform Delay [s]	46.26	35.10	34.84	49.51	33.20	28.06	47.02	38.91	44.47	38.78
k, delay calibration	0.11	0.50	0.50	0.31	0.50	0.50	0.36	0.26	0.34	0.40
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.99	25.28	22.91	35.72	2.48	0.33	35.92	6.96	25.26	25.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.95	0.93	0.90	0.60	0.09	0.93	0.77	0.91	0.95
d, Delay for Lane Group [s/veh]	55.25	60.38	57.75	85.23	35.68	28.39	82.94	45.87	69.73	63.85
Lane Group LOS	E	E	E	F	D	C	F	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	6.11	19.33	18.58	5.34	7.57	0.95	8.17	9.25	9.33	16.05
50th-Percentile Queue Length [ft]	152.76	483.21	464.48	133.56	189.27	23.71	204.20	231.19	233.14	401.16
95th-Percentile Queue Length [veh]	10.16	26.54	25.65	9.13	12.08	1.71	12.86	14.24	14.33	22.62
95th-Percentile Queue Length [ft]	254.10	663.46	641.21	228.33	302.08	42.69	321.38	355.88	358.34	565.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.25	59.15	57.75	85.23	35.68	28.39	82.94	45.87	45.87	69.73	63.85	63.85
Movement LOS	E	E	E	F	D	C	F	D	D	E	E	E
d_A, Approach Delay [s/veh]	58.50			43.69			60.39			65.97		
Approach LOS	E			D			E			E		
d_I, Intersection Delay [s/veh]	56.93											
Intersection LOS	E											
Intersection V/C	0.941											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	36.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	180	1	389	1	31	0	42	472	639	1068	953	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	1	389	1	31	0	42	472	639	1068	953	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	0	102	0	8	0	11	124	168	281	251	5
Total Analysis Volume [veh/h]	189	1	409	1	33	0	44	497	673	1124	1003	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	32	0	55	49	0	39	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	17	17	17	17	17	5	47	47	44	87	87
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.04	0.39	0.39	0.37	0.72	0.72
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.11	0.00	0.02	0.03	0.14	0.37	0.35	0.28	0.28
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	239	248	248	79	248	66	1413	707	1183	1302	1302
d1, Uniform Delay [s]	50.16	50.32	50.31	44.61	45.42	56.88	25.68	35.35	36.75	6.41	6.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.75	6.86	6.84	0.06	0.24	10.95	0.69	24.04	5.13	0.89	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

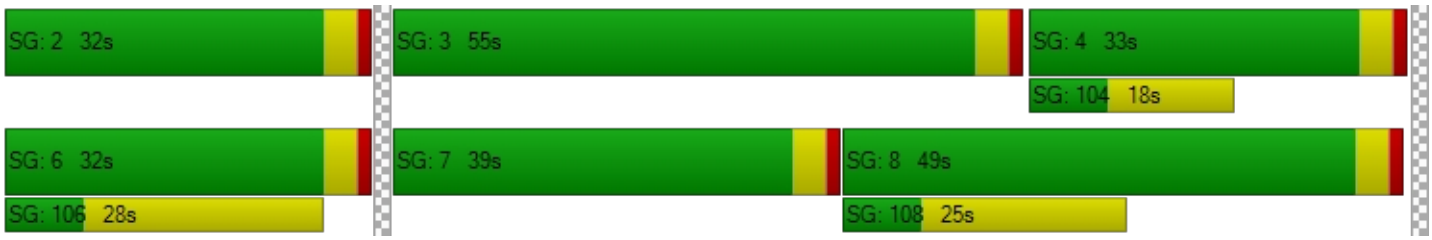
X, volume / capacity	0.79	0.83	0.83	0.01	0.13	0.67	0.35	0.95	0.95	0.39	0.39
d, Delay for Lane Group [s/veh]	55.91	57.18	57.15	44.67	45.66	67.84	26.37	59.39	41.87	7.31	7.31
Lane Group LOS	E	E	E	D	D	E	C	E	D	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	5.88	6.46	6.45	0.03	0.89	1.52	5.14	23.40	16.53	4.84	4.84
50th-Percentile Queue Length [ft]	146.97	161.38	161.22	0.68	22.14	37.95	128.62	584.91	413.32	121.03	121.03
95th-Percentile Queue Length [veh]	9.85	10.62	10.61	0.05	1.59	2.73	8.86	31.33	23.20	8.45	8.45
95th-Percentile Queue Length [ft]	246.37	265.55	265.34	1.23	39.85	68.31	221.62	783.23	580.02	211.24	211.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.91	57.18	57.16	44.67	45.66	45.66	67.84	26.37	59.39	41.87	7.31	7.31
Movement LOS	E	E	E	D	D	D	E	C	E	D	A	A
d_A, Approach Delay [s/veh]	56.77			45.63			46.18			25.41		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	36.60											
Intersection LOS	D											
Intersection V/C	0.932											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	45.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.877

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	496	388	401	212	196	233	173	633	70	234	1155	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	496	388	401	212	196	233	173	633	70	234	1155	239
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	102	106	56	52	61	46	167	18	62	304	63
Total Analysis Volume [veh/h]	522	408	422	223	206	245	182	666	74	246	1216	252
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	35	0	22	32	32	12	37	0	26	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	35	35	18	31	43	8	40	40	12	44	44
g / C, Green / Cycle	0.18	0.29	0.29	0.15	0.26	0.36	0.07	0.34	0.34	0.10	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.23	0.13	0.06	0.14	0.06	0.21	0.20	0.08	0.34	0.14
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	560	521	521	248	936	649	214	603	603	308	1312	656
d1, Uniform Delay [s]	48.80	39.21	39.60	50.38	34.85	28.41	55.39	33.55	33.25	53.09	36.61	28.19
k, delay calibration	0.11	0.50	0.50	0.33	0.50	0.50	0.11	0.15	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.58	11.23	12.86	26.91	0.54	1.67	8.99	1.47	1.21	4.73	3.40	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.78	0.81	0.90	0.22	0.38	0.85	0.62	0.60	0.80	0.93	0.38
d, Delay for Lane Group [s/veh]	56.38	50.44	52.46	77.29	35.39	30.09	64.39	35.02	34.45	57.82	40.01	28.56
Lane Group LOS	E	D	D	E	D	C	E	D	C	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	8.27	12.61	13.34	8.42	2.45	5.53	2.99	9.42	8.98	3.83	17.41	5.43
50th-Percentile Queue Length [ft]	206.70	315.22	333.40	210.59	61.28	138.37	74.78	235.46	224.43	95.82	435.20	135.63
95th-Percentile Queue Length [veh]	12.98	18.43	19.33	13.18	4.41	9.39	5.38	14.45	13.89	6.90	24.25	9.25
95th-Percentile Queue Length [ft]	324.59	460.80	483.13	329.58	110.31	234.83	134.60	361.29	347.28	172.48	606.26	231.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.38	50.44	52.46	77.29	35.39	30.09	64.39	34.77	34.45	57.82	40.01	28.56
Movement LOS	E	D	D	E	D	C	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	53.36			47.32			40.59			40.88		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.38											
Intersection LOS	D											
Intersection V/C	0.877											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	111.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.492

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	366	7	0	1650	26	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	366	7	0	1650	26	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	2	0	434	7	3
Total Analysis Volume [veh/h]	385	7	0	1737	27	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.49	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.09	0.00	111.90	51.76
Movement LOS	A	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.14	2.14
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	53.58	53.58
d_A, Approach Delay [s/veh]	0.00		0.00		93.40	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.68					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	45.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	222	267	383	162	133	132	163	1221	70	153	1186	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	267	383	162	133	132	163	1221	70	153	1186	181
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	70	101	43	35	35	43	321	18	40	312	48
Total Analysis Volume [veh/h]	234	281	403	171	140	139	172	1285	74	161	1248	191
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	35	0	19	32	0	17	41	0	25	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	33	33	14	29	29	13	44	44	13	44	44
g / C, Green / Cycle	0.15	0.28	0.28	0.12	0.24	0.24	0.11	0.36	0.36	0.11	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.14	0.16	0.22	0.10	0.08	0.08	0.10	0.25	0.26	0.09	0.35	0.11
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	255	499	499	197	437	437	184	1306	653	189	1314	657
d1, Uniform Delay [s]	50.27	37.12	40.37	52.18	37.29	37.26	53.07	32.49	32.73	52.40	37.02	27.06
k, delay calibration	0.36	0.50	0.50	0.27	0.50	0.50	0.35	0.11	0.23	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	31.01	4.53	13.09	23.73	1.92	1.90	40.59	0.66	2.96	10.41	4.62	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

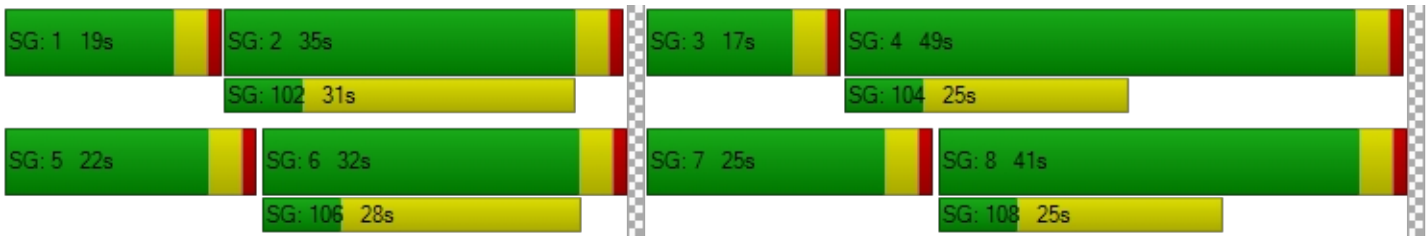
X, volume / capacity	0.92	0.56	0.81	0.87	0.32	0.32	0.93	0.69	0.70	0.85	0.95	0.29
d, Delay for Lane Group [s/veh]	81.28	41.66	53.46	75.91	39.21	39.17	93.66	33.15	35.68	62.81	41.64	27.30
Lane Group LOS	F	D	D	E	D	D	F	C	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	9.10	7.69	12.83	6.35	3.63	3.60	7.21	11.12	11.85	5.30	18.29	3.95
50th-Percentile Queue Length [ft]	227.59	192.31	320.79	158.83	90.71	89.99	180.37	278.01	296.35	132.59	457.21	98.68
95th-Percentile Queue Length [veh]	14.05	12.24	18.71	10.49	6.53	6.48	11.62	16.59	17.50	9.08	25.30	7.10
95th-Percentile Queue Length [ft]	351.29	306.03	467.65	262.17	163.28	161.99	290.50	414.73	437.51	227.01	632.55	177.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.28	41.66	53.46	75.91	39.21	39.17	93.66	33.91	35.68	62.81	41.64	27.30
Movement LOS	F	D	D	E	D	D	F	C	D	E	D	C
d_A, Approach Delay [s/veh]	56.94			53.14			40.71			42.06		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.74											
Intersection LOS	D											
Intersection V/C	0.891											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	57.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	605	845	199	130	375	289	131	331	81	179	949	151
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	605	845	199	130	375	289	131	331	81	179	949	151
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	159	222	52	34	99	76	34	87	21	47	250	40
Total Analysis Volume [veh/h]	637	889	209	137	395	304	138	348	85	188	999	159
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	29	41	0	20	32	0	14	32	32	27	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	42	42	11	28	28	10	36	65	15	41	41
g / C, Green / Cycle	0.21	0.35	0.35	0.10	0.23	0.23	0.08	0.30	0.54	0.13	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.31	0.30	0.08	0.21	0.18	0.08	0.10	0.05	0.11	0.33	0.32
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	667	626	626	163	424	424	142	1065	968	216	611	611
d1, Uniform Delay [s]	46.95	36.91	36.49	53.36	44.33	42.75	54.87	32.93	13.47	51.41	38.97	38.21
k, delay calibration	0.11	0.50	0.50	0.14	0.50	0.50	0.35	0.11	0.11	0.13	0.43	0.41
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.72	17.01	14.81	13.52	22.93	12.24	56.99	0.18	0.04	12.24	26.77	19.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

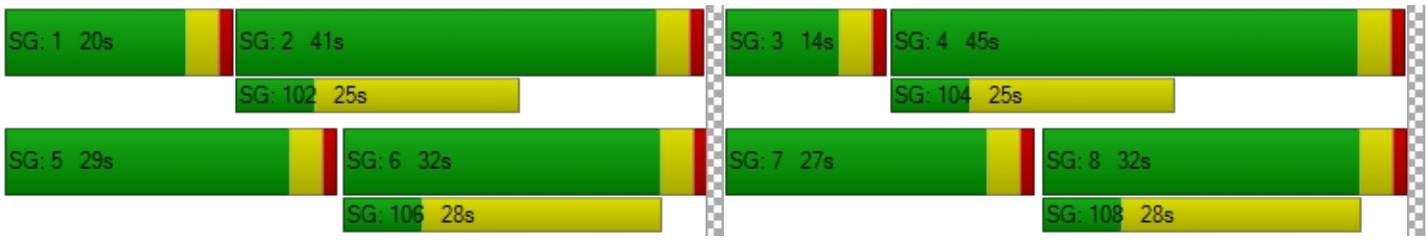
X, volume / capacity	0.96	0.89	0.87	0.84	0.89	0.76	0.97	0.33	0.09	0.87	0.97	0.93
d, Delay for Lane Group [s/veh]	55.67	53.92	51.30	66.88	67.25	54.99	111.85	33.11	13.51	63.65	65.74	57.49
Lane Group LOS	E	D	D	E	E	D	F	C	B	E	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	10.15	18.14	17.20	4.67	13.44	10.35	6.40	3.99	1.13	6.28	21.36	19.10
50th-Percentile Queue Length [ft]	253.87	453.56	430.06	116.83	336.03	258.78	159.99	99.72	28.17	156.89	534.07	477.40
95th-Percentile Queue Length [veh]	15.38	25.13	24.00	8.22	19.45	15.63	10.55	7.18	2.03	10.38	28.94	26.26
95th-Percentile Queue Length [ft]	384.52	628.19	600.11	205.46	486.35	390.69	263.71	179.49	50.71	259.60	723.57	656.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.67	52.94	51.30	66.88	66.66	54.99	111.85	33.11	13.51	63.65	62.37	57.49
Movement LOS	E	D	D	E	E	D	F	C	B	E	E	E
d_A, Approach Delay [s/veh]	53.75			62.45			49.22			61.97		
Approach LOS	D			E			D			E		
d_I, Intersection Delay [s/veh]	57.26											
Intersection LOS	E											
Intersection V/C	0.943											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	77	598	216	237	639	354	261	325	42	172	316	249
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	598	216	237	639	354	261	325	42	172	316	249
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	157	57	62	168	93	69	86	11	45	83	66
Total Analysis Volume [veh/h]	81	629	227	249	673	373	275	342	44	181	333	262
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	12	32	0	0	48	0	0	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	60	49	49	60	51	51	22	22	22	22	22	22
g / C, Green / Cycle	0.67	0.54	0.54	0.67	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.15	0.15	0.19	0.21	0.08	0.08	0.21	0.11	0.19	0.15
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1073	1951	975	1093	2030	1015	167	495	439	110	439	439
d1, Uniform Delay [s]	5.23	11.28	11.13	5.84	10.53	10.80	28.00	28.00	32.77	27.51	31.58	30.12
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.39	0.71	0.48	0.44	1.03	9.62	0.30	5.82	301.40	2.71	1.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

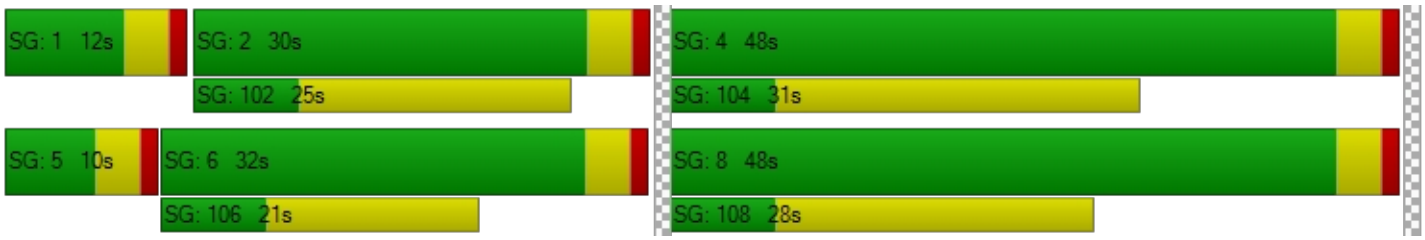
X, volume / capacity	0.08	0.30	0.28	0.23	0.33	0.37	0.82	0.28	0.88	1.65	0.76	0.60
d, Delay for Lane Group [s/veh]	5.37	11.67	11.84	6.33	10.97	11.83	37.62	28.31	38.59	328.91	34.30	31.42
Lane Group LOS	A	B	B	A	B	B	D	C	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	0.50	3.09	2.93	1.73	3.44	4.06	2.84	2.44	8.59	11.06	6.88	5.07
50th-Percentile Queue Length [ft]	12.57	77.23	73.31	43.31	85.93	101.41	71.10	60.98	214.63	276.52	171.98	126.82
95th-Percentile Queue Length [veh]	0.91	5.56	5.28	3.12	6.19	7.30	5.12	4.39	13.39	19.91	11.18	8.77
95th-Percentile Queue Length [ft]	22.63	139.02	131.96	77.96	154.68	182.54	127.99	109.76	334.76	497.74	279.52	219.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.37	11.68	11.84	6.33	10.97	11.83	35.77	38.59	38.59	328.91	34.30	31.42
Movement LOS	A	B	B	A	B	B	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	11.18			10.33			36.25			102.04		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	34.61											
Intersection LOS	C											
Intersection V/C	0.537											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.835

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	216	754	113	325	1011	139	58	157	71	48	174	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	754	113	325	1011	139	58	157	71	48	174	178
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	198	30	86	266	37	15	41	19	13	46	47
Total Analysis Volume [veh/h]	227	794	119	342	1064	146	61	165	75	51	183	187
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	31	22	0	34	25	0	12	32	0	12	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	34	34	22	41	41	5	23	5	23
g / C, Green / Cycle	0.15	0.34	0.34	0.22	0.41	0.41	0.05	0.23	0.05	0.23
(v / s)_i Volume / Saturation Flow Rate	0.13	0.26	0.25	0.20	0.30	0.08	0.04	0.13	0.03	0.21
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	263	613	613	378	1470	735	85	415	79	408
d1, Uniform Delay [s]	41.26	29.39	28.94	37.88	24.89	19.08	46.86	34.22	46.92	37.67
k, delay calibration	0.11	0.50	0.50	0.21	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.14	8.66	7.40	14.13	3.13	0.61	10.67	1.28	8.45	13.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.76	0.73	0.90	0.72	0.20	0.72	0.58	0.64	0.91
d, Delay for Lane Group [s/veh]	49.40	38.04	36.35	52.01	28.02	19.69	57.53	35.50	55.37	51.00
Lane Group LOS	D	D	D	D	C	B	E	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	6.00	11.19	10.41	9.51	10.87	2.28	1.74	5.27	1.43	10.18
50th-Percentile Queue Length [ft]	149.92	279.78	260.34	237.68	271.68	56.89	43.53	131.80	35.71	254.43
95th-Percentile Queue Length [veh]	10.01	16.68	15.71	14.56	16.27	4.10	3.13	9.04	2.57	15.41
95th-Percentile Queue Length [ft]	250.32	416.94	392.65	364.10	406.84	102.40	78.36	225.94	64.28	385.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.40	37.35	36.35	52.01	28.02	19.69	57.53	35.50	35.50	55.37	51.00	51.00
Movement LOS	D	D	D	D	C	B	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	39.64			32.52			39.96			51.53		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	37.90											
Intersection LOS	D											
Intersection V/C	0.835											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	47.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.950

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	350	0	1463	8	0	2	26	959	165	447	683	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	350	0	1463	8	0	2	26	959	165	447	683	12
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	0	385	2	0	1	7	252	43	118	180	3
Total Analysis Volume [veh/h]	368	0	1540	8	0	2	27	1009	174	471	719	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	59	0	0	59	0	33	40	0	21	28	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	54	54	54	54	54	4	36	36	18	51	51
g / C, Green / Cycle	0.45	0.45	0.45	0.45	0.45	0.03	0.30	0.30	0.15	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.22	0.43	0.43	0.00	0.00	0.02	0.28	0.10	0.15	0.20	0.20
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	790	806	806	89	806	51	1075	537	492	760	760
d1, Uniform Delay [s]	23.35	31.97	31.97	18.38	18.32	57.37	41.01	32.68	50.38	25.14	25.11
k, delay calibration	0.11	0.42	0.42	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	20.15	20.15	0.43	0.00	8.37	16.18	1.60	11.25	2.19	2.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

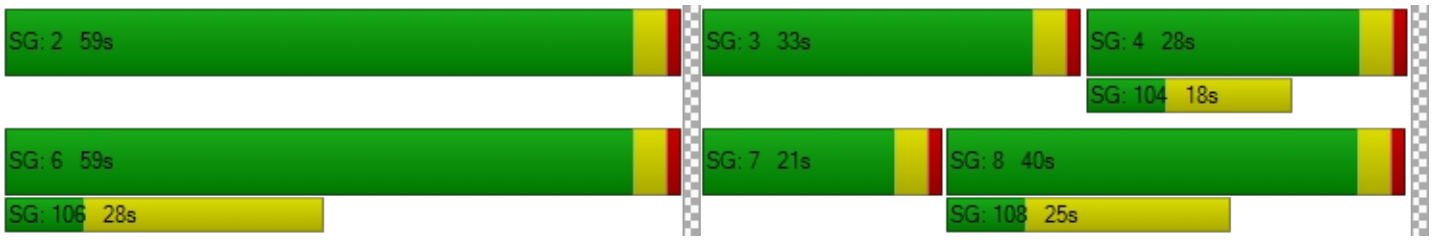
X, volume / capacity	0.47	0.96	0.96	0.09	0.00	0.53	0.94	0.32	0.96	0.48	0.48
d, Delay for Lane Group [s/veh]	23.78	52.12	52.12	18.81	18.32	65.74	57.20	34.27	61.63	27.33	27.27
Lane Group LOS	C	D	D	B	B	E	E	C	E	C	C
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	7.38	25.40	25.40	0.14	0.03	0.93	16.77	4.18	7.77	8.01	7.95
50th-Percentile Queue Length [ft]	184.60	634.90	634.90	3.39	0.78	23.15	419.20	104.55	194.19	200.24	198.72
95th-Percentile Queue Length [veh]	11.84	33.66	33.66	0.24	0.06	1.67	23.48	7.53	12.34	12.65	12.57
95th-Percentile Queue Length [ft]	296.01	841.52	841.52	6.09	1.41	41.68	587.09	188.19	308.46	316.28	314.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	23.78	52.12	52.12	18.81	18.32	18.32	65.74	57.20	34.27	61.63	27.30	27.27
Movement LOS	C	D	D	B	B	B	E	E	C	E	C	C
d_A, Approach Delay [s/veh]	46.66			18.71			54.09			40.74		
Approach LOS	D			B			D			D		
d_I, Intersection Delay [s/veh]	47.03											
Intersection LOS	D											
Intersection V/C	0.950											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	138.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.185

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	203	312	212	270	396	195	363	1546	444	350	760	234
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	312	212	270	396	195	363	1546	444	350	760	234
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	82	56	71	104	51	96	407	117	92	200	62
Total Analysis Volume [veh/h]	214	328	223	284	417	205	382	1627	467	368	800	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	35	0	18	32	32	35	53	0	14	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	31	31	14	35	56	17	49	49	10	41	41
g / C, Green / Cycle	0.08	0.26	0.26	0.12	0.29	0.47	0.15	0.41	0.41	0.08	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.14	0.17	0.12	0.11	0.12	0.58	0.58	0.12	0.22	0.14
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	272	467	467	198	1049	846	465	733	733	267	1242	621
d1, Uniform Delay [s]	53.84	39.34	38.38	53.00	34.09	19.02	49.76	35.58	35.58	55.00	33.09	29.81
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.11	0.11	0.50	0.50	0.17	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.03	6.32	4.60	220.54	1.13	0.15	3.66	200.88	200.88	178.27	0.56	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.63	0.55	1.43	0.40	0.24	0.82	1.43	1.43	1.38	0.64	0.40
d, Delay for Lane Group [s/veh]	58.87	45.66	42.98	273.54	35.22	19.17	53.43	236.46	236.46	233.27	33.66	30.22
Lane Group LOS	E	D	D	F	D	B	D	F	F	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.36	8.50	7.13	18.12	5.06	3.46	5.79	61.72	61.72	10.64	9.83	5.46
50th-Percentile Queue Length [ft]	83.93	212.40	178.24	453.08	126.49	86.47	144.75	1543.06	1543.06	265.93	245.80	136.61
95th-Percentile Queue Length [veh]	6.04	13.28	11.51	28.59	8.75	6.23	9.74	92.47	92.47	17.67	14.97	9.30
95th-Percentile Queue Length [ft]	151.07	331.90	287.72	714.69	218.72	155.65	243.41	2311.71	2311.71	441.69	374.36	232.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.87	45.38	42.98	273.54	35.22	19.17	53.43	236.46	236.46	233.27	33.66	30.22
Movement LOS	E	D	D	F	D	B	D	F	F	F	C	C
d_A, Approach Delay [s/veh]	48.46			106.29			208.22			85.01		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	138.31											
Intersection LOS	F											
Intersection V/C	1.185											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	155.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.415

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	1767	8	7	451	15	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1767	8	7	451	15	4
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	465	2	2	119	4	1
Total Analysis Volume [veh/h]	1860	8	7	475	16	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.02	0.00	0.42	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	16.42	0.00	155.45	101.67
Movement LOS	A	A	C	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.07	0.00	1.64	1.64
95th-Percentile Queue Length [ft]	0.00	0.00	1.66	0.00	40.95	40.95
d_A, Approach Delay [s/veh]	0.00		0.24		144.70	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.27					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	90.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.045

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	157	393	211	306	458	180	290	1470	180	267	1196	382
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	393	211	306	458	180	290	1470	180	267	1196	382
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	103	56	81	121	47	76	387	47	70	315	101
Total Analysis Volume [veh/h]	165	414	222	322	482	189	305	1547	189	281	1259	402
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	35	0	23	32	0	22	41	0	21	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	31	31	19	36	36	18	37	37	17	36	36
g / C, Green / Cycle	0.11	0.26	0.26	0.16	0.30	0.30	0.15	0.31	0.31	0.14	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.17	0.19	0.20	0.18	0.18	0.32	0.32	0.17	0.35	0.22
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	193	467	467	269	548	548	255	1106	553	241	1076	538
d1, Uniform Delay [s]	52.24	40.49	39.47	50.50	36.10	35.28	51.00	41.58	41.58	51.50	42.08	37.99
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.49	0.50	0.15	0.27
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.33	9.30	6.59	118.46	5.71	4.47	119.67	26.92	51.23	110.27	80.02	5.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

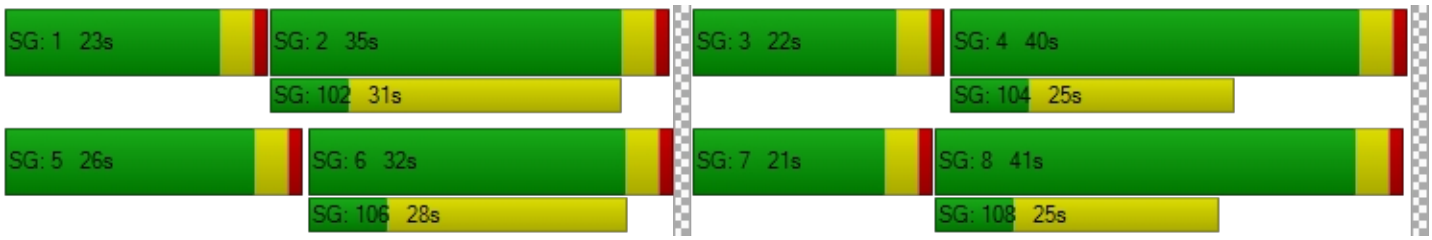
X, volume / capacity	0.86	0.72	0.64	1.20	0.64	0.58	1.20	1.05	1.05	1.17	1.17	0.75
d, Delay for Lane Group [s/veh]	62.57	49.79	46.06	168.96	41.80	39.75	170.67	68.50	92.81	161.77	122.10	43.10
Lane Group LOS	E	D	D	F	D	D	F	F	F	F	F	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	5.43	10.25	8.68	16.92	9.76	8.55	16.12	20.25	23.98	14.61	27.66	11.36
50th-Percentile Queue Length [ft]	135.68	256.32	217.00	422.88	244.12	213.81	403.02	506.13	599.45	365.13	691.38	283.99
95th-Percentile Queue Length [veh]	9.25	15.50	13.51	25.68	14.89	13.35	24.59	28.44	33.02	22.34	39.91	16.89
95th-Percentile Queue Length [ft]	231.19	387.60	337.79	641.89	372.24	333.72	614.75	711.05	825.42	558.41	997.65	422.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	49.10	46.06	168.96	41.25	39.75	170.67	74.64	92.81	161.77	122.10	43.10
Movement LOS	E	D	D	F	D	D	F	E	F	F	F	D
d_A, Approach Delay [s/veh]	51.03			82.38			90.67			111.49		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	90.75											
Intersection LOS	F											
Intersection V/C	1.045											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	44.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	185	488	96	152	778	110	172	1118	343	192	509	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	185	488	96	152	778	110	172	1118	343	192	509	98
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	128	25	40	205	29	45	294	90	51	134	26
Total Analysis Volume [veh/h]	195	514	101	160	819	116	181	1177	361	202	536	103
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	29	0	18	35	0	39	49	49	19	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	30	30	13	35	35	14	41	53	15	42	42
g / C, Green / Cycle	0.07	0.26	0.26	0.11	0.30	0.30	0.12	0.36	0.46	0.13	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.17	0.09	0.27	0.25	0.11	0.33	0.20	0.12	0.18	0.17
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	225	472	472	187	544	544	213	1288	833	222	654	654
d1, Uniform Delay [s]	52.97	38.01	37.57	50.29	38.15	37.58	49.30	35.26	20.77	49.33	28.50	28.16
k, delay calibration	0.11	0.50	0.50	0.25	0.50	0.50	0.11	0.11	0.50	0.35	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.72	7.39	6.35	21.01	18.00	14.58	9.21	2.97	1.64	31.47	0.60	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

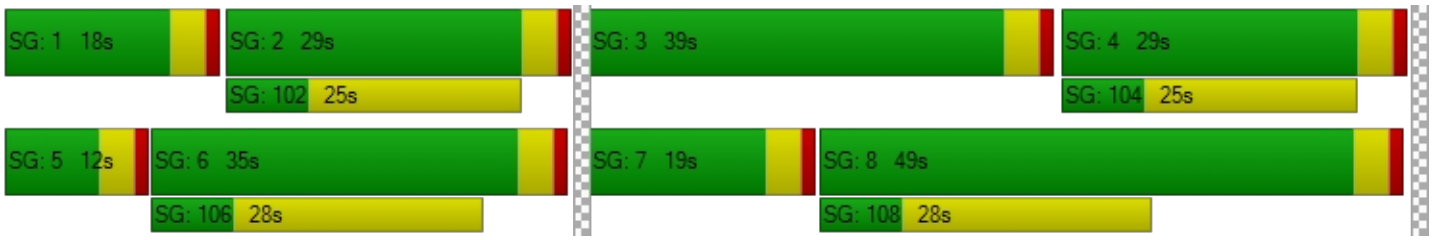
X, volume / capacity	0.87	0.67	0.63	0.85	0.88	0.84	0.85	0.91	0.43	0.91	0.50	0.47
d, Delay for Lane Group [s/veh]	62.69	45.39	43.92	71.30	56.16	52.17	58.50	38.23	22.41	80.80	29.10	28.70
Lane Group LOS	E	D	D	E	E	D	E	D	C	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.09	8.90	8.25	5.61	15.34	14.11	5.62	15.94	6.83	7.65	7.11	6.64
50th-Percentile Queue Length [ft]	77.25	222.62	206.19	140.20	383.50	352.74	140.62	398.55	170.70	191.30	177.84	166.07
95th-Percentile Queue Length [veh]	5.56	13.80	12.96	9.49	21.76	20.27	9.51	22.49	11.11	12.19	11.49	10.87
95th-Percentile Queue Length [ft]	139.05	344.96	323.93	237.29	544.08	506.75	237.86	562.25	277.83	304.72	287.20	271.74

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.69	44.83	43.92	71.30	54.49	52.17	58.50	38.23	22.41	80.80	28.95	28.70
Movement LOS	E	D	D	E	D	D	E	D	C	F	C	C
d_A, Approach Delay [s/veh]	49.01			56.70			37.04			41.37		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	44.85											
Intersection LOS	D											
Intersection V/C	0.897											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX C-IV

YEAR 2025 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	16	620	82	196	456	398	297	79	7	141	175	240
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	620	82	196	456	398	297	79	7	141	175	240
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	163	22	52	120	105	78	21	2	37	46	63
Total Analysis Volume [veh/h]	17	653	86	206	480	419	313	83	7	148	184	253
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	29	0	15	34	0	0	46	0	0	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	68	57	57	68	61	61	15	15	15	15	15	15
g / C, Green / Cycle	0.75	0.64	0.64	0.75	0.68	0.68	0.16	0.16	0.16	0.16	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.01	0.14	0.14	0.12	0.13	0.23	0.09	0.09	0.05	0.09	0.13	0.11
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1700	1700	1800	1800
c, Capacity [veh/h]	1297	2296	1148	1283	2451	1226	111	355	275	241	291	291
d1, Uniform Delay [s]	2.85	6.84	6.85	3.21	5.29	5.98	33.86	34.86	33.42	34.67	36.33	35.73
k, delay calibration	0.50	0.50	0.50	0.37	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.21	0.43	0.20	0.18	0.76	196.10	0.86	0.69	2.53	4.99	3.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.21	0.22	0.16	0.20	0.34	1.41	0.44	0.33	0.61	0.80	0.71
d, Delay for Lane Group [s/veh]	2.87	7.06	7.27	3.41	5.47	6.74	229.97	35.73	34.11	37.21	41.33	38.86
Lane Group LOS	A	A	A	A	A	A	F	D	C	D	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	0.06	1.82	1.90	0.86	1.47	3.03	8.19	3.20	1.77	3.10	5.22	4.44
50th-Percentile Queue Length [ft]	1.61	45.56	47.43	21.55	36.66	75.78	204.77	80.08	44.29	77.55	130.41	111.06
95th-Percentile Queue Length [veh]	0.12	3.28	3.42	1.55	2.64	5.46	14.58	5.77	3.19	5.58	8.96	7.90
95th-Percentile Queue Length [ft]	2.90	82.01	85.38	38.78	65.99	136.40	364.54	144.14	79.72	139.59	224.05	197.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	2.87	7.11	7.27	3.41	5.47	6.74	132.85	34.11	34.11	37.21	41.33	39.24
Movement LOS	A	A	A	A	A	A	F	C	C	D	D	D
d_A, Approach Delay [s/veh]	7.03			5.57			110.80			39.42		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	27.79											
Intersection LOS	C											
Intersection V/C	0.443											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	57.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	197	1051	59	133	605	45	206	127	193	258	142	315
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	197	1051	59	133	605	45	206	127	193	258	142	315
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	277	16	35	159	12	54	33	51	68	37	83
Total Analysis Volume [veh/h]	207	1106	62	140	637	47	217	134	203	272	149	332
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	31	41	0	14	24	0	19	31	0	24	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	38	38	10	33	33	15	27	19	31
g / C, Green / Cycle	0.14	0.34	0.34	0.09	0.30	0.30	0.14	0.24	0.18	0.28
(v / s)_i Volume / Saturation Flow Rate	0.12	0.33	0.32	0.08	0.18	0.03	0.13	0.19	0.16	0.27
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	240	621	621	156	1063	532	233	436	300	507
d1, Uniform Delay [s]	46.26	35.11	34.85	49.51	33.21	28.06	47.02	38.91	44.47	38.78
k, delay calibration	0.11	0.50	0.50	0.31	0.50	0.50	0.36	0.26	0.34	0.40
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.99	25.41	23.04	35.72	2.49	0.33	35.92	6.96	25.26	25.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.95	0.93	0.90	0.60	0.09	0.93	0.77	0.91	0.95
d, Delay for Lane Group [s/veh]	55.25	60.53	57.89	85.23	35.70	28.39	82.94	45.87	69.73	63.85
Lane Group LOS	E	E	E	F	D	C	F	D	E	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	6.11	19.37	18.62	5.34	7.59	0.95	8.17	9.25	9.33	16.05
50th-Percentile Queue Length [ft]	152.76	484.26	465.49	133.56	189.65	23.71	204.20	231.19	233.14	401.16
95th-Percentile Queue Length [veh]	10.16	26.59	25.70	9.13	12.10	1.71	12.86	14.24	14.33	22.62
95th-Percentile Queue Length [ft]	254.10	664.71	642.41	228.33	302.58	42.69	321.38	355.88	358.34	565.39

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.25	59.29	57.89	85.23	35.70	28.39	82.94	45.87	45.87	69.73	63.85	63.85
Movement LOS	E	E	E	F	D	C	F	D	D	E	E	E
d_A, Approach Delay [s/veh]	58.62			43.70			60.39			65.97		
Approach LOS	E			D			E			E		
d_I, Intersection Delay [s/veh]	56.97											
Intersection LOS	E											
Intersection V/C	0.941											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	37.3
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	180	1	389	3	30	1	39	472	639	1068	953	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	1	389	3	30	1	39	472	639	1068	953	23
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	0	102	1	8	0	10	124	168	281	251	6
Total Analysis Volume [veh/h]	189	1	409	3	32	1	41	497	673	1124	1003	24
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	28	0	0	28	0	55	53	0	39	37	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	16	16	4	49	49	43	87	87
g / C, Green / Cycle	0.14	0.14	0.14	0.14	0.14	0.04	0.41	0.41	0.35	0.73	0.73
(v / s)_i Volume / Saturation Flow Rate	0.11	0.11	0.11	0.00	0.02	0.02	0.14	0.37	0.35	0.29	0.29
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	237	246	246	75	246	63	1473	737	1133	1307	1307
d1, Uniform Delay [s]	50.31	50.47	50.46	44.80	45.55	56.97	24.29	33.44	38.58	6.30	6.30
k, delay calibration	0.12	0.13	0.13	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.64	8.46	8.41	0.21	0.24	10.48	0.62	17.75	10.69	0.89	0.89
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

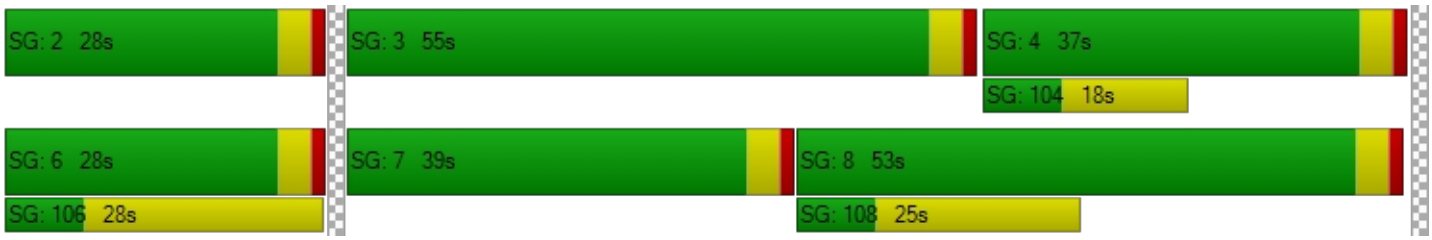
X, volume / capacity	0.80	0.83	0.83	0.04	0.13	0.65	0.34	0.91	0.99	0.39	0.39
d, Delay for Lane Group [s/veh]	56.96	58.93	58.87	45.01	45.80	67.45	24.91	51.19	49.27	7.19	7.19
Lane Group LOS	E	E	E	D	D	E	C	D	D	A	A
Critical Lane Group	No	Yes	No	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	5.94	6.57	6.56	0.08	0.89	1.41	4.98	21.71	17.82	4.81	4.81
50th-Percentile Queue Length [ft]	148.57	164.26	164.06	2.06	22.18	35.29	124.43	542.86	445.52	120.28	120.28
95th-Percentile Queue Length [veh]	9.94	10.77	10.76	0.15	1.60	2.54	8.64	29.36	24.74	8.41	8.41
95th-Percentile Queue Length [ft]	248.52	269.35	269.09	3.70	39.92	63.53	215.90	733.91	618.60	210.21	210.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.96	58.93	58.90	45.01	45.80	45.80	67.45	24.91	51.19	49.27	7.19	7.19
Movement LOS	E	E	E	D	D	D	E	C	D	D	A	A
d_A, Approach Delay [s/veh]	58.29			45.73			40.96			29.18		
Approach LOS	E			D			D			C		
d_I, Intersection Delay [s/veh]	37.26											
Intersection LOS	D											
Intersection V/C	0.932											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	45.4
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.878

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	496	388	401	212	196	235	174	635	70	234	1157	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	496	388	401	212	196	235	174	635	70	234	1157	239
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	131	102	106	56	52	62	46	167	18	62	304	63
Total Analysis Volume [veh/h]	522	408	422	223	206	247	183	668	74	246	1218	252
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	25	35	0	22	32	32	12	37	0	26	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	21	35	35	18	31	43	8	40	40	12	44	44
g / C, Green / Cycle	0.18	0.29	0.29	0.15	0.26	0.36	0.07	0.34	0.34	0.10	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.16	0.23	0.23	0.13	0.06	0.14	0.06	0.21	0.20	0.08	0.34	0.14
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	560	520	520	248	935	648	214	604	604	308	1314	657
d1, Uniform Delay [s]	48.80	39.25	39.65	50.38	34.89	28.49	55.41	33.53	33.23	53.09	36.59	28.15
k, delay calibration	0.11	0.50	0.50	0.33	0.50	0.50	0.11	0.15	0.14	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.58	11.31	12.95	26.91	0.54	1.70	9.26	1.48	1.22	4.73	3.42	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.78	0.81	0.90	0.22	0.38	0.85	0.63	0.60	0.80	0.93	0.38
d, Delay for Lane Group [s/veh]	56.38	50.56	52.60	77.29	35.43	30.19	64.67	35.02	34.45	57.82	40.01	28.52
Lane Group LOS	E	D	D	E	D	C	E	D	C	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	8.27	12.63	13.35	8.42	2.45	5.59	3.02	9.45	9.00	3.83	17.44	5.42
50th-Percentile Queue Length [ft]	206.70	315.63	333.87	210.59	61.32	139.82	75.38	236.13	225.09	95.82	436.01	135.52
95th-Percentile Queue Length [veh]	12.98	18.45	19.35	13.18	4.42	9.47	5.43	14.49	13.92	6.90	24.29	9.24
95th-Percentile Queue Length [ft]	324.59	461.31	483.71	329.58	110.38	236.79	135.68	362.14	348.11	172.48	607.23	230.99

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.38	50.56	52.60	77.29	35.43	30.19	64.67	34.77	34.45	57.82	40.01	28.52
Movement LOS	E	D	D	E	D	C	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	53.44			47.32			40.66			40.87		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	45.41											
Intersection LOS	D											
Intersection V/C	0.878											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	112.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	367	7	0	1651	26	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	367	7	0	1651	26	11
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	2	0	434	7	3
Total Analysis Volume [veh/h]	386	7	0	1738	27	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.49	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.09	0.00	112.39	52.06
Movement LOS	A	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	2.15	2.15
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	53.74	53.74
d_A, Approach Delay [s/veh]	0.00		0.00		93.83	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.69					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	45.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.892

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	222	267	383	162	133	132	163	1223	70	153	1188	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	222	267	383	162	133	132	163	1223	70	153	1188	181
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	70	101	43	35	35	43	322	18	40	313	48
Total Analysis Volume [veh/h]	234	281	403	171	140	139	172	1287	74	161	1251	191
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	35	0	19	32	0	17	41	0	25	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	33	33	14	29	29	13	44	44	13	44	44
g / C, Green / Cycle	0.15	0.28	0.28	0.12	0.24	0.24	0.11	0.36	0.36	0.11	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.14	0.16	0.22	0.10	0.08	0.08	0.10	0.25	0.26	0.09	0.35	0.11
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	255	499	499	197	437	437	184	1307	654	189	1316	658
d1, Uniform Delay [s]	50.27	37.17	40.42	52.18	37.33	37.31	53.07	32.46	32.70	52.40	37.01	27.02
k, delay calibration	0.36	0.50	0.50	0.27	0.50	0.50	0.35	0.11	0.23	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	31.01	4.56	13.21	23.73	1.93	1.91	40.59	0.66	2.96	10.41	4.69	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

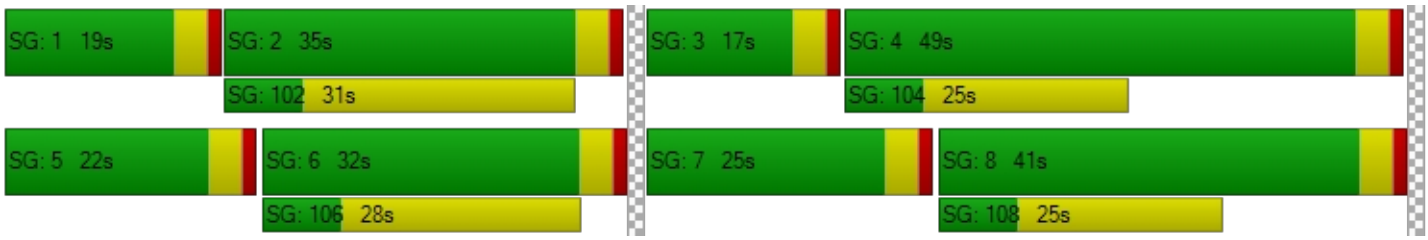
X, volume / capacity	0.92	0.56	0.81	0.87	0.32	0.32	0.93	0.69	0.70	0.85	0.95	0.29
d, Delay for Lane Group [s/veh]	81.28	41.73	53.63	75.91	39.27	39.22	93.66	33.12	35.66	62.81	41.70	27.26
Lane Group LOS	F	D	D	E	D	D	F	C	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	9.10	7.70	12.85	6.35	3.63	3.60	7.21	11.13	11.87	5.30	18.35	3.94
50th-Percentile Queue Length [ft]	227.59	192.51	321.32	158.83	90.79	90.07	180.37	278.29	296.72	132.59	458.76	98.58
95th-Percentile Queue Length [veh]	14.05	12.25	18.73	10.49	6.54	6.49	11.62	16.60	17.52	9.08	25.38	7.10
95th-Percentile Queue Length [ft]	351.29	306.28	468.30	262.17	163.43	162.13	290.50	415.09	437.97	227.01	634.39	177.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	81.28	41.73	53.63	75.91	39.27	39.22	93.66	33.88	35.66	62.81	41.70	27.26
Movement LOS	F	D	D	E	D	D	F	C	D	E	D	C
d_A, Approach Delay [s/veh]	57.03			53.18			40.67			42.10		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.76											
Intersection LOS	D											
Intersection V/C	0.892											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	57.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	605	846	199	130	376	289	131	331	81	179	949	151
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	605	846	199	130	376	289	131	331	81	179	949	151
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	159	223	52	34	99	76	34	87	21	47	250	40
Total Analysis Volume [veh/h]	637	891	209	137	396	304	138	348	85	188	999	159
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	29	41	0	20	32	0	14	32	32	27	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25	42	42	11	28	28	10	36	65	15	41	41
g / C, Green / Cycle	0.21	0.35	0.35	0.10	0.23	0.23	0.08	0.30	0.54	0.13	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.20	0.31	0.30	0.08	0.21	0.18	0.08	0.10	0.05	0.11	0.33	0.32
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	667	626	626	163	424	424	142	1065	968	216	611	611
d1, Uniform Delay [s]	46.95	36.94	36.52	53.36	44.34	42.76	54.87	32.93	13.47	51.41	38.97	38.21
k, delay calibration	0.11	0.50	0.50	0.14	0.50	0.50	0.35	0.11	0.11	0.13	0.43	0.41
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.72	17.17	14.96	13.52	23.08	12.31	56.99	0.18	0.04	12.24	26.77	19.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

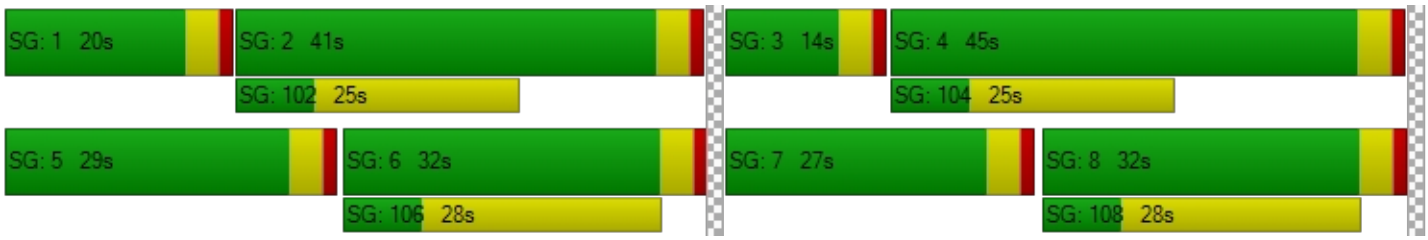
X, volume / capacity	0.96	0.89	0.87	0.84	0.89	0.76	0.97	0.33	0.09	0.87	0.97	0.93
d, Delay for Lane Group [s/veh]	55.67	54.11	51.48	66.88	67.42	55.07	111.85	33.11	13.51	63.65	65.74	57.49
Lane Group LOS	E	D	D	E	E	E	F	C	B	E	E	E
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	10.15	18.21	17.27	4.67	13.48	10.38	6.40	3.99	1.13	6.28	21.36	19.10
50th-Percentile Queue Length [ft]	253.87	455.19	431.74	116.83	336.94	259.39	159.99	99.72	28.17	156.89	534.07	477.40
95th-Percentile Queue Length [veh]	15.38	25.21	24.08	8.22	19.50	15.66	10.55	7.18	2.03	10.38	28.94	26.26
95th-Percentile Queue Length [ft]	384.52	630.13	602.12	205.46	487.45	391.45	263.71	179.49	50.71	259.60	723.57	656.56

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.67	53.13	51.48	66.88	66.81	55.07	111.85	33.11	13.51	63.65	62.37	57.49
Movement LOS	E	D	D	E	E	E	F	C	B	E	E	E
d_A, Approach Delay [s/veh]	53.86			62.56			49.22			61.97		
Approach LOS	D			E			D			E		
d_I, Intersection Delay [s/veh]	57.32											
Intersection LOS	E											
Intersection V/C	0.943											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Peyton Drive at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	34.6
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

Intersection Setup

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	77	599	216	237	640	354	261	325	42	172	316	249
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	599	216	237	640	354	261	325	42	172	316	249
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	158	57	62	168	93	69	86	11	45	83	66
Total Analysis Volume [veh/h]	81	631	227	249	674	373	275	342	44	181	333	262
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	6	6	0	6	6	0	0	6	0	0	6	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	10	30	0	12	32	0	0	48	0	0	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	18	0	0	14	0	0	21	0	0	24	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	60	49	49	60	51	51	22	22	22	22	22	22
g / C, Green / Cycle	0.67	0.54	0.54	0.67	0.56	0.56	0.24	0.24	0.24	0.24	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.15	0.15	0.19	0.21	0.08	0.08	0.21	0.11	0.19	0.15
s, saturation flow rate [veh/h]	1700	3600	1800	1700	3600	1800	1700	1700	1800	1700	1800	1800
c, Capacity [veh/h]	1072	1951	975	1093	2030	1015	167	495	439	110	439	439
d1, Uniform Delay [s]	5.23	11.28	11.13	5.84	10.54	10.80	28.00	28.00	32.77	27.51	31.58	30.12
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.40	0.71	0.49	0.44	1.03	9.62	0.30	5.82	301.40	2.71	1.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

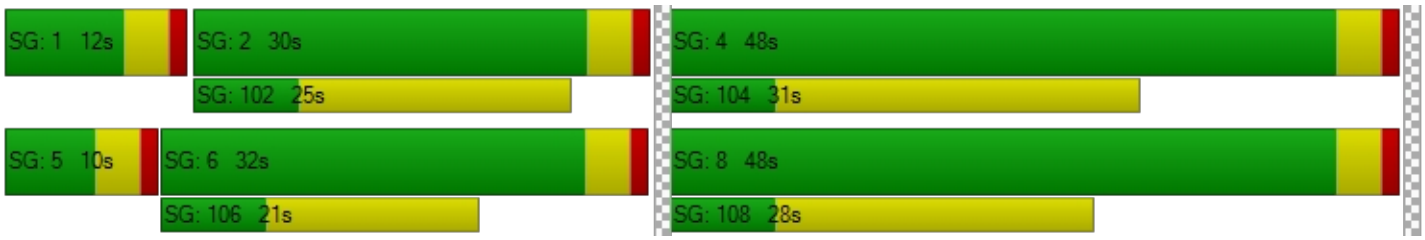
X, volume / capacity	0.08	0.30	0.28	0.23	0.33	0.37	0.82	0.28	0.88	1.65	0.76	0.60
d, Delay for Lane Group [s/veh]	5.37	11.68	11.85	6.33	10.98	11.83	37.62	28.31	38.59	328.91	34.30	31.42
Lane Group LOS	A	B	B	A	B	B	D	C	D	F	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh]	0.50	3.10	2.94	1.73	3.44	4.06	2.84	2.44	8.59	11.06	6.88	5.07
50th-Percentile Queue Length [ft]	12.58	77.45	73.52	43.31	86.09	101.41	71.10	60.98	214.63	276.52	171.98	126.82
95th-Percentile Queue Length [veh]	0.91	5.58	5.29	3.12	6.20	7.30	5.12	4.39	13.39	19.91	11.18	8.77
95th-Percentile Queue Length [ft]	22.64	139.40	132.34	77.96	154.96	182.54	127.99	109.76	334.76	497.74	279.52	219.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.37	11.69	11.85	6.33	10.98	11.83	35.77	38.59	38.59	328.91	34.30	31.42
Movement LOS	A	B	B	A	B	B	D	D	D	F	C	C
d_A, Approach Delay [s/veh]	11.18			10.33			36.25			102.04		
Approach LOS	B			B			D			F		
d_I, Intersection Delay [s/veh]	34.60											
Intersection LOS	C											
Intersection V/C	0.537											

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Chino Hills Parkway at Eucalyptus Avenue

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Eucalyptus Avenue			Eucalyptus Avenue		
Base Volume Input [veh/h]	216	755	113	325	1012	139	58	157	71	48	174	178
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	216	755	113	325	1012	139	58	157	71	48	174	178
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	199	30	86	266	37	15	41	19	13	46	47
Total Analysis Volume [veh/h]	227	795	119	342	1065	146	61	165	75	51	183	187
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	31	22	0	34	25	0	12	32	0	12	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	11	0	0	11	0	0	18	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	34	34	22	41	41	5	23	5	23
g / C, Green / Cycle	0.15	0.34	0.34	0.22	0.41	0.41	0.05	0.23	0.05	0.23
(v / s)_i Volume / Saturation Flow Rate	0.13	0.26	0.25	0.20	0.30	0.08	0.04	0.13	0.03	0.21
s, saturation flow rate [veh/h]	1700	1800	1800	1700	3600	1800	1700	1800	1700	1800
c, Capacity [veh/h]	263	613	613	378	1470	735	85	415	79	408
d1, Uniform Delay [s]	41.26	29.40	28.96	37.88	24.90	19.08	46.86	34.22	46.92	37.67
k, delay calibration	0.11	0.50	0.50	0.21	0.50	0.50	0.11	0.11	0.11	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.14	8.69	7.43	14.13	3.14	0.61	10.67	1.28	8.45	13.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.76	0.73	0.90	0.72	0.20	0.72	0.58	0.64	0.91
d, Delay for Lane Group [s/veh]	49.40	38.09	36.39	52.01	28.04	19.69	57.53	35.50	55.37	51.00
Lane Group LOS	D	D	D	D	C	B	E	D	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	6.00	11.21	10.43	9.51	10.88	2.28	1.74	5.27	1.43	10.18
50th-Percentile Queue Length [ft]	149.92	280.27	260.81	237.68	272.07	56.89	43.53	131.80	35.71	254.43
95th-Percentile Queue Length [veh]	10.01	16.70	15.73	14.56	16.29	4.10	3.13	9.04	2.57	15.41
95th-Percentile Queue Length [ft]	250.32	417.55	393.23	364.10	407.33	102.40	78.36	225.94	64.28	385.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.40	37.39	36.39	52.01	28.04	19.69	57.53	35.50	35.50	55.37	51.00	51.00
Movement LOS	D	D	D	D	C	B	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	39.67			32.53			39.96			51.53		
Approach LOS	D			C			D			D		
d_I, Intersection Delay [s/veh]	37.91											
Intersection LOS	D											
Intersection V/C	0.836											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 5: Rustic Drive/Carbon Canyon Road at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	48.0
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.951

Intersection Setup

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			No		

Volumes

Name	Carbon Canyon Road			Rustic Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	350	1	1463	12	1	3	27	959	165	447	683	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	350	1	1463	12	1	3	27	959	165	447	683	14
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	0	385	3	0	1	7	252	43	118	180	4
Total Analysis Volume [veh/h]	368	1	1540	13	1	3	28	1009	174	471	719	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	6	0	0	6	0	6	6	0	6	6	0
Maximum Green [s]	0	30	0	0	30	0	30	30	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	58	0	0	58	0	32	39	0	23	30	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	0	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	21	0	0	18	0	0	11	0
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	53	53	53	53	53	4	35	35	19	51	51
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.44	0.03	0.29	0.29	0.16	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.22	0.43	0.43	0.01	0.00	0.02	0.28	0.10	0.15	0.20	0.20
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1700	3600	1800	3200	1800	1800
c, Capacity [veh/h]	777	799	799	73	799	53	1057	529	520	765	765
d1, Uniform Delay [s]	23.68	32.45	32.45	18.70	18.60	57.23	41.57	33.12	49.31	24.92	24.87
k, delay calibration	0.11	0.43	0.43	0.11	0.11	0.11	0.50	0.50	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	22.29	22.29	1.17	0.00	7.95	18.67	1.66	6.23	2.16	2.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

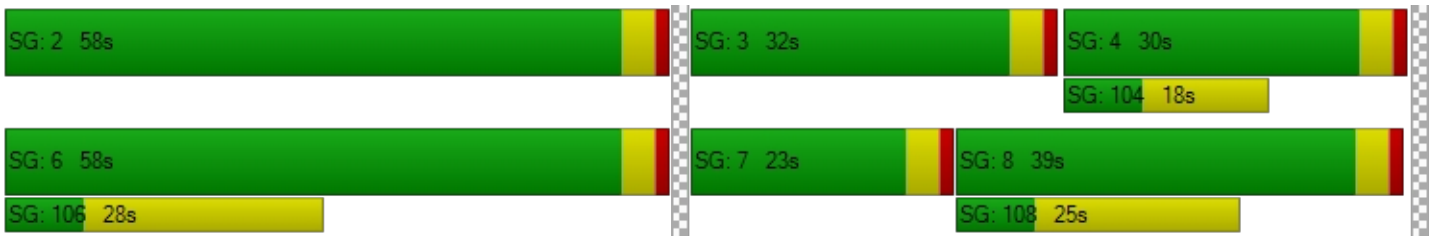
X, volume / capacity	0.47	0.96	0.96	0.18	0.01	0.53	0.95	0.33	0.91	0.48	0.48
d, Delay for Lane Group [s/veh]	24.13	54.74	54.74	19.87	18.60	65.18	60.24	34.78	55.54	27.08	27.01
Lane Group LOS	C	D	D	B	B	E	E	C	E	C	C
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	7.44	26.02	26.02	0.23	0.06	0.95	17.22	4.22	7.36	7.99	7.92
50th-Percentile Queue Length [ft]	186.07	650.38	650.38	5.71	1.58	23.86	430.49	105.56	184.08	199.83	198.08
95th-Percentile Queue Length [veh]	11.92	34.38	34.38	0.41	0.11	1.72	24.02	7.59	11.81	12.63	12.54
95th-Percentile Queue Length [ft]	297.92	859.50	859.50	10.28	2.85	42.95	600.62	189.81	295.34	315.74	313.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.13	54.74	54.74	19.87	18.60	18.60	65.18	60.24	34.78	55.54	27.04	27.01
Movement LOS	C	D	D	B	B	B	E	E	C	E	C	C
d_A, Approach Delay [s/veh]	48.84			19.57			56.70			38.18		
Approach LOS	D			B			E			D		
d_I, Intersection Delay [s/veh]	47.96											
Intersection LOS	D											
Intersection V/C	0.951											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 6: Peyton Drive at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	138.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.186

Intersection Setup

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Peyton Drive			Peyton Drive			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	203	312	212	270	396	197	365	1548	444	350	762	234
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	312	212	270	396	197	365	1548	444	350	762	234
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	82	56	71	104	52	96	407	117	92	201	62
Total Analysis Volume [veh/h]	214	328	223	284	417	207	384	1629	467	368	802	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	6	3	8	0	7	4	0
Auxiliary Signal Groups						3,6						
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	6	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	30	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	35	0	18	32	32	35	53	0	14	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	7	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	21	0	21	0	0	21	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No	No	No	No		No	No	
Maximum Recall	No	No		No	No	No	No	No		No	No	
Pedestrian Recall	No	No		No	No	No	No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	31	31	14	35	56	18	49	49	10	41	41
g / C, Green / Cycle	0.08	0.26	0.26	0.12	0.29	0.47	0.15	0.41	0.41	0.08	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.07	0.16	0.14	0.17	0.12	0.12	0.12	0.58	0.58	0.12	0.22	0.14
s, saturation flow rate [veh/h]	3200	1800	1800	1700	3600	1800	3200	1800	1800	3200	3600	1800
c, Capacity [veh/h]	272	467	467	198	1048	847	468	733	733	267	1240	620
d1, Uniform Delay [s]	53.84	39.34	38.38	53.00	34.09	19.00	49.72	35.58	35.58	55.00	33.18	29.87
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.11	0.11	0.50	0.50	0.17	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.03	6.32	4.60	220.54	1.13	0.15	3.66	201.47	201.47	178.27	0.57	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.63	0.55	1.43	0.40	0.24	0.82	1.43	1.43	1.38	0.65	0.40
d, Delay for Lane Group [s/veh]	58.87	45.66	42.98	273.54	35.22	19.15	53.38	237.04	237.04	233.27	33.76	30.29
Lane Group LOS	E	D	D	F	D	B	D	F	F	F	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.36	8.50	7.13	18.12	5.06	3.49	5.82	61.84	61.84	10.64	9.88	5.47
50th-Percentile Queue Length [ft]	83.93	212.40	178.25	453.08	126.49	87.29	145.47	1546.06	1546.06	265.93	246.91	136.77
95th-Percentile Queue Length [veh]	6.04	13.28	11.51	28.59	8.75	6.28	9.77	92.67	92.67	17.67	15.03	9.31
95th-Percentile Queue Length [ft]	151.07	331.91	287.72	714.69	218.72	157.12	244.37	2316.78	2316.78	441.69	375.75	232.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.87	45.39	42.98	273.54	35.22	19.15	53.38	237.04	237.04	233.27	33.76	30.29
Movement LOS	E	D	D	F	D	B	D	F	F	F	C	C
d_A, Approach Delay [s/veh]	48.46			106.10			208.61			85.00		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	138.46											
Intersection LOS	F											
Intersection V/C	1.186											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Control Type:	Two-way stop	Delay (sec / veh):	156.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.417

Intersection Setup

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Carbon Canyon Road		Carbon Canyon Road		Carriage Hills Lane	
Base Volume Input [veh/h]	1768	8	7	452	15	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1768	8	7	452	15	4
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	465	2	2	119	4	1
Total Analysis Volume [veh/h]	1861	8	7	476	16	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.02	0.00	0.42	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	16.43	0.00	156.09	102.09
Movement LOS	A	A	C	A	F	F
95th-Percentile Queue Length [veh]	0.00	0.00	0.07	0.00	1.64	1.64
95th-Percentile Queue Length [ft]	0.00	0.00	1.66	0.00	41.05	41.05
d_A, Approach Delay [s/veh]	0.00		0.24		145.29	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.27					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Pipeline Avenue at Chino Hills Parkway

Control Type:	Signalized	Delay (sec / veh):	91.1
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.046

Intersection Setup

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pipeline Avenue			Pipeline Avenue			Chino Hills Parkway			Chino Hills Parkway		
Base Volume Input [veh/h]	157	393	211	306	458	180	290	1472	180	267	1198	382
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	393	211	306	458	180	290	1472	180	267	1198	382
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	103	56	81	121	47	76	387	47	70	315	101
Total Analysis Volume [veh/h]	165	414	222	322	482	189	305	1549	189	281	1261	402
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	0	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	26	35	0	23	32	0	22	41	0	21	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	24	0	0	21	0	0	18	0	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	31	31	19	36	36	18	37	37	17	36	36
g / C, Green / Cycle	0.11	0.26	0.26	0.16	0.30	0.30	0.15	0.31	0.31	0.14	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.17	0.19	0.20	0.18	0.18	0.32	0.32	0.17	0.35	0.22
s, saturation flow rate [veh/h]	1700	1800	1800	1700	1800	1800	1700	3600	1800	1700	3600	1800
c, Capacity [veh/h]	193	467	467	269	548	548	255	1106	553	241	1076	538
d1, Uniform Delay [s]	52.24	40.49	39.47	50.50	36.10	35.28	51.00	41.58	41.58	51.50	42.08	37.99
k, delay calibration	0.11	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.49	0.50	0.15	0.27
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.33	9.30	6.59	118.46	5.71	4.47	119.67	27.36	51.66	110.27	80.84	5.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

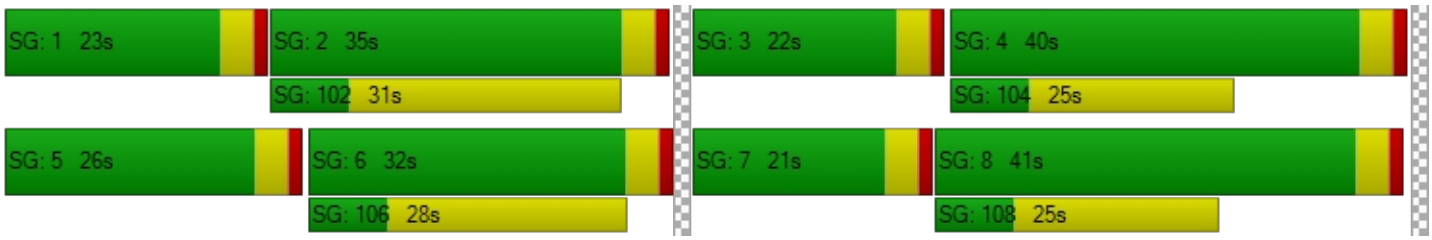
X, volume / capacity	0.86	0.72	0.64	1.20	0.64	0.58	1.20	1.05	1.05	1.17	1.17	0.75
d, Delay for Lane Group [s/veh]	62.57	49.79	46.06	168.96	41.80	39.75	170.67	68.93	93.24	161.77	122.92	43.10
Lane Group LOS	E	D	D	F	D	D	F	F	F	F	F	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh]	5.43	10.25	8.68	16.92	9.76	8.55	16.12	20.31	24.04	14.61	27.78	11.36
50th-Percentile Queue Length [ft]	135.68	256.32	217.00	422.88	244.12	213.81	403.02	507.80	601.09	365.13	694.45	283.99
95th-Percentile Queue Length [veh]	9.25	15.50	13.51	25.68	14.89	13.35	24.59	28.54	33.12	22.34	40.10	16.89
95th-Percentile Queue Length [ft]	231.19	387.60	337.79	641.89	372.24	333.72	614.75	713.57	828.05	558.41	1002.43	422.18

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.57	49.10	46.06	168.96	41.25	39.75	170.67	75.07	93.24	161.77	122.92	43.10
Movement LOS	E	D	D	F	D	D	F	E	F	F	F	D
d_A, Approach Delay [s/veh]	51.03			82.38			91.02			112.03		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	91.06											
Intersection LOS	F											
Intersection V/C	1.046											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Chino Hills Parkway at Grand Avenue

Control Type:	Signalized	Delay (sec / veh):	44.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.897

Intersection Setup

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chino Hills Parkway			Chino Hills Parkway			Grand Avenue			Grand Avenue		
Base Volume Input [veh/h]	185	489	96	152	779	110	172	1118	343	192	509	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	185	489	96	152	779	110	172	1118	343	192	509	98
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	129	25	40	205	29	45	294	90	51	134	26
Total Analysis Volume [veh/h]	195	515	101	160	820	116	181	1177	361	202	536	103
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	6	0	6	6	0	6	6	6	6	6	0
Maximum Green [s]	30	30	0	30	30	0	30	30	30	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	29	0	18	35	0	37	49	49	19	31	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	18	0	0	21	0	0	21	21	0	18	0
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	R	L	C	C
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	30	30	13	35	35	14	41	53	15	42	42
g / C, Green / Cycle	0.07	0.26	0.26	0.11	0.30	0.30	0.12	0.36	0.46	0.13	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.17	0.09	0.27	0.25	0.11	0.33	0.20	0.12	0.18	0.17
s, saturation flow rate [veh/h]	3200	1800	1800	1700	1800	1800	1700	3600	1800	1700	1800	1800
c, Capacity [veh/h]	225	472	472	187	544	544	212	1288	833	222	655	655
d1, Uniform Delay [s]	52.97	38.02	37.58	50.29	38.17	37.60	49.31	35.26	20.77	49.33	28.50	28.16
k, delay calibration	0.11	0.50	0.50	0.25	0.50	0.50	0.11	0.11	0.50	0.35	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.72	7.42	6.38	21.01	18.10	14.66	9.25	2.97	1.64	31.47	0.60	0.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

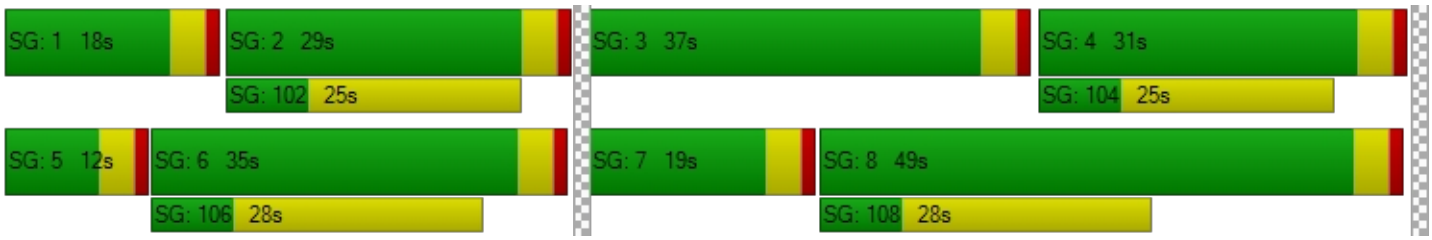
X, volume / capacity	0.87	0.67	0.63	0.85	0.88	0.84	0.85	0.91	0.43	0.91	0.50	0.47
d, Delay for Lane Group [s/veh]	62.69	45.44	43.96	71.30	56.27	52.25	58.55	38.23	22.41	80.80	29.09	28.69
Lane Group LOS	E	D	D	E	E	D	E	D	C	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh]	3.09	8.92	8.27	5.61	15.37	14.14	5.63	15.94	6.83	7.65	7.11	6.64
50th-Percentile Queue Length [ft]	77.25	223.11	206.65	140.20	384.31	353.46	140.68	398.55	170.70	191.30	177.82	166.04
95th-Percentile Queue Length [veh]	5.56	13.82	12.98	9.49	21.80	20.31	9.52	22.49	11.11	12.19	11.49	10.87
95th-Percentile Queue Length [ft]	139.05	345.59	324.52	237.29	545.06	507.63	237.94	562.25	277.83	304.72	287.16	271.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.69	44.87	43.96	71.30	54.59	52.25	58.55	38.23	22.41	80.80	28.94	28.69
Movement LOS	E	D	D	E	D	D	E	D	C	F	C	C
d_A, Approach Delay [s/veh]	49.04			56.79			37.04			41.36		
Approach LOS	D			E			D			D		
d_I, Intersection Delay [s/veh]	44.88											
Intersection LOS	D											
Intersection V/C	0.897											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



APPENDIX D

TRAFFIC SIGNAL WARRANTS WORKSHEETS

List of Intersections
Buddhist Temple, Chino Hills

Vistro Model Number	Report Number	Key Study Intersections
3	1	Peyton Drive at Eucalyptus Avenue
15	2	Chino Hills Parkway at Grand Avenue
4	3	Chino Hills Parkway at Eucalyptus Avenue
5	4	Rustic Drive/Carbon Canyon Road at Chino Hills Parkway
6	5	Peyton Drive at Chino Hills Parkway
14	6	Pipeline Avenue at Chino Hills Parkway
13	7	Carbon Canyon Road at Carriage Hills Lane

APPENDIX D-I

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Signal Warrants Report For Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	257	1370	30
2	247	1315	29
3	242	1288	28
4	206	1096	24
5	195	1041	23
6	175	932	20
7	162	863	19
8	154	822	18
9	123	658	14
10	116	617	14
11	116	617	14
12	111	589	13
13	100	534	12
14	93	493	11
15	93	493	11
16	90	479	11
17	51	274	6
18	28	151	3
19	26	137	3
20	10	55	1
21	8	41	1
22	8	41	1
23	5	27	1
24	5	27	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	1627	1	30	No	No	No	No	No	No	No	No	No	No
2	3	1562	1	29	No	No	No	No	No	No	No	No	No	No
3	3	1530	1	28	No	No	No	No	No	No	No	No	No	No
4	3	1302	1	24	No	No	No	No	No	No	No	No	No	No
5	3	1236	1	23	No	No	No	No	No	No	No	No	No	No
6	3	1107	1	20	No	No	No	No	No	No	No	No	No	No
7	3	1025	1	19	No	No	No	No	No	No	No	No	No	No
8	3	976	1	18	No	No	No	No	No	No	No	No	No	No
9	3	781	1	14	No	No	No	No	No	No	No	No	No	No
10	3	733	1	14	No	No	No	No	No	No	No	No	No	No
11	3	733	1	14	No	No	No	No	No	No	No	No	No	No
12	3	700	1	13	No	No	No	No	No	No	No	No	No	No
13	3	634	1	12	No	No	No	No	No	No	No	No	No	No
14	3	586	1	11	No	No	No	No	No	No	No	No	No	No
15	3	586	1	11	No	No	No	No	No	No	No	No	No	No
16	3	569	1	11	No	No	No	No	No	No	No	No	No	No
17	3	325	1	6	No	No	No	No	No	No	No	No	No	No
18	3	179	1	3	No	No	No	No	No	No	No	No	No	No
19	3	163	1	3	No	No	No	No	No	No	No	No	No	No
20	3	65	1	1	No	No	No	No	No	No	No	No	No	No
21	3	49	1	1	No	No	No	No	No	No	No	No	No	No
22	3	49	1	1	No	No	No	No	No	No	No	No	No	No
23	3	32	1	1	No	No	No	No	No	No	No	No	No	No
24	3	32	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	39.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:19
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	30
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1657
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	1462	325	12
2	1404	312	12
3	1374	306	11
4	1170	260	10
5	1111	247	9
6	994	221	8
7	921	205	8
8	877	195	7
9	702	156	6
10	658	146	5
11	658	146	5
12	629	140	5
13	570	127	5
14	526	117	4
15	526	117	4
16	512	114	4
17	292	65	2
18	161	36	1
19	146	33	1
20	58	13	0
21	44	10	0
22	44	10	0
23	29	7	0
24	29	7	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	1787	1	12	No	No	No	No	No	No	No	No	No	No
2	3	1716	1	12	No	No	No	No	No	No	No	No	No	No
3	3	1680	1	11	No	No	No	No	No	No	No	No	No	No
4	3	1430	1	10	No	No	No	No	No	No	No	No	No	No
5	3	1358	1	9	No	No	No	No	No	No	No	No	No	No
6	3	1215	1	8	No	No	No	No	No	No	No	No	No	No
7	3	1126	1	8	No	No	No	No	No	No	No	No	No	No
8	3	1072	1	7	No	No	No	No	No	No	No	No	No	No
9	3	858	1	6	No	No	No	No	No	No	No	No	No	No
10	3	804	1	5	No	No	No	No	No	No	No	No	No	No
11	3	804	1	5	No	No	No	No	No	No	No	No	No	No
12	3	769	1	5	No	No	No	No	No	No	No	No	No	No
13	3	697	1	5	No	No	No	No	No	No	No	No	No	No
14	3	643	1	4	No	No	No	No	No	No	No	No	No	No
15	3	643	1	4	No	No	No	No	No	No	No	No	No	No
16	3	626	1	4	No	No	No	No	No	No	No	No	No	No
17	3	357	1	2	No	No	No	No	No	No	No	No	No	No
18	3	197	1	1	No	No	No	No	No	No	No	No	No	No
19	3	179	1	1	No	No	No	No	No	No	No	No	No	No
20	3	71	1	0	No	No	No	No	No	No	No	No	No	No
21	3	54	1	0	No	No	No	No	No	No	No	No	No	No
22	3	54	1	0	No	No	No	No	No	No	No	No	No	No
23	3	36	1	0	No	No	No	No	No	No	No	No	No	No
24	3	36	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	49
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	12
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1799
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

APPENDIX D-II

YEAR 2025 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

Signal Warrants Report For Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	374	1651	37
2	359	1585	36
3	352	1552	35
4	299	1321	30
5	284	1255	28
6	254	1123	25
7	236	1040	23
8	224	991	22
9	180	792	18
10	168	743	17
11	168	743	17
12	161	710	16
13	146	644	14
14	135	594	13
15	135	594	13
16	131	578	13
17	75	330	7
18	41	182	4
19	37	165	4
20	15	66	1
21	11	50	1
22	11	50	1
23	7	33	1
24	7	33	1

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	2025	1	37	No	No	No	No	No	No	No	No	No	No
2	3	1944	1	36	No	No	No	No	No	No	No	No	No	No
3	3	1904	1	35	No	No	No	No	No	No	No	No	No	No
4	3	1620	1	30	No	No	No	No	No	No	No	No	No	No
5	3	1539	1	28	No	No	No	No	No	No	No	No	No	No
6	3	1377	1	25	No	No	No	No	No	No	No	No	No	No
7	3	1276	1	23	No	No	No	No	No	No	No	No	No	No
8	3	1215	1	22	No	No	No	No	No	No	No	No	No	No
9	3	972	1	18	No	No	No	No	No	No	No	No	No	No
10	3	911	1	17	No	No	No	No	No	No	No	No	No	No
11	3	911	1	17	No	No	No	No	No	No	No	No	No	No
12	3	871	1	16	No	No	No	No	No	No	No	No	No	No
13	3	790	1	14	No	No	No	No	No	No	No	No	No	No
14	3	729	1	13	No	No	No	No	No	No	No	No	No	No
15	3	729	1	13	No	No	No	No	No	No	No	No	No	No
16	3	709	1	13	No	No	No	No	No	No	No	No	No	No
17	3	405	1	7	No	No	No	No	No	No	No	No	No	No
18	3	223	1	4	No	No	No	No	No	No	No	No	No	No
19	3	202	1	4	No	No	No	No	No	No	No	No	No	No
20	3	81	1	1	No	No	No	No	No	No	No	No	No	No
21	3	61	1	1	No	No	No	No	No	No	No	No	No	No
22	3	61	1	1	No	No	No	No	No	No	No	No	No	No
23	3	40	1	1	No	No	No	No	No	No	No	No	No	No
24	3	40	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	93.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:57
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	37
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	2062
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 13: Carbon Canyon Road at Carriage Hills Lane

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	1776	459	19
2	1705	441	18
3	1669	431	18
4	1421	367	15
5	1350	349	14
6	1208	312	13
7	1119	289	12
8	1066	275	11
9	852	220	9
10	799	207	9
11	799	207	9
12	764	197	8
13	693	179	7
14	639	165	7
15	639	165	7
16	622	161	7
17	355	92	4
18	195	50	2
19	178	46	2
20	71	18	1
21	53	14	1
22	53	14	1
23	36	9	0
24	36	9	0

Warrant Analysis by Hour

Hour	Major Lanes		Minor Lanes		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	2235	1	19	No	No	No	No	No	No	No	No	No	No
2	3	2146	1	18	No	No	No	No	No	No	No	No	No	No
3	3	2100	1	18	No	No	No	No	No	No	No	No	No	No
4	3	1788	1	15	No	No	No	No	No	No	No	No	No	No
5	3	1699	1	14	No	No	No	No	No	No	No	No	No	No
6	3	1520	1	13	No	No	No	No	No	No	No	No	No	No
7	3	1408	1	12	No	No	No	No	No	No	No	No	No	No
8	3	1341	1	11	No	No	No	No	No	No	No	No	No	No
9	3	1072	1	9	No	No	No	No	No	No	No	No	No	No
10	3	1006	1	9	No	No	No	No	No	No	No	No	No	No
11	3	1006	1	9	No	No	No	No	No	No	No	No	No	No
12	3	961	1	8	No	No	No	No	No	No	No	No	No	No
13	3	872	1	7	No	No	No	No	No	No	No	No	No	No
14	3	804	1	7	No	No	No	No	No	No	No	No	No	No
15	3	804	1	7	No	No	No	No	No	No	No	No	No	No
16	3	783	1	7	No	No	No	No	No	No	No	No	No	No
17	3	447	1	4	No	No	No	No	No	No	No	No	No	No
18	3	245	1	2	No	No	No	No	No	No	No	No	No	No
19	3	224	1	2	No	No	No	No	No	No	No	No	No	No
20	3	89	1	1	No	No	No	No	No	No	No	No	No	No
21	3	67	1	1	No	No	No	No	No	No	No	No	No	No
22	3	67	1	1	No	No	No	No	No	No	No	No	No	No
23	3	45	1	0	No	No	No	No	No	No	No	No	No	No
24	3	45	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	145.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:46
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	2254
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

APPENDIX E

PROJECT DRIVEWAY LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX E-I

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 18: Rustic Drive at Project Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Base Volume Input [veh/h]	0	3	0	0	2	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	0	2	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	0	1	0
Total Analysis Volume [veh/h]	0	3	0	0	2	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.53	8.33
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.15	0.15
d_A, Approach Delay [s/veh]	0.00		3.61		8.53	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.41					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 19: Rustic Drive at Project Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Base Volume Input [veh/h]	3	4	0	2	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	4	0	2	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	1	1	0
Total Analysis Volume [veh/h]	3	4	0	2	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Rustic Drive at Project Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Base Volume Input [veh/h]	0	3	0	0	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	0	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	0	1	0
Total Analysis Volume [veh/h]	0	3	0	0	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.54	8.33
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		3.61		8.54	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.27					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 19: Rustic Drive at Project Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Base Volume Input [veh/h]	3	3	0	3	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	3	0	3	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	1	1	0
Total Analysis Volume [veh/h]	3	3	0	3	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	A					

APPENDIX E-II

YEAR 2025 CUMULATIVE PLUS PROJECT TRAFFIC CONDITIONS

Intersection Level Of Service Report
Intersection 18: Rustic Drive at Project Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Base Volume Input [veh/h]	0	3	0	0	2	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	0	2	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	0	1	0
Total Analysis Volume [veh/h]	0	3	0	0	2	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.53	8.33
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.15	0.15
d_A, Approach Delay [s/veh]	0.00		3.61		8.53	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.41					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 19: Rustic Drive at Project Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Base Volume Input [veh/h]	3	4	0	2	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	4	0	2	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	1	1	0
Total Analysis Volume [veh/h]	3	4	0	2	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 18: Rustic Drive at Project Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 1	
Base Volume Input [veh/h]	0	3	0	0	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	0	0	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	0	0	1	0
Total Analysis Volume [veh/h]	0	3	0	0	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.22	0.00	8.54	8.33
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		3.61		8.54	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.27					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 19: Rustic Drive at Project Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Rustic Drive		Rustic Drive		Project Driveway 2	
Base Volume Input [veh/h]	3	3	0	3	3	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	3	0	3	3	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	1	1	0
Total Analysis Volume [veh/h]	3	3	0	3	3	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.23	0.00	8.56	8.35
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.00	0.00	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft]	0.00	0.00	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	0.00		0.00		8.56	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	A					

Appendix F

Assembly Bill (AB) 52 Consultation Letter

GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

RE: AB52 consultation response for the Initial Study for the proposed Buddhist Temple of Chino Hills project in the City of Chino Hills.

Dear Jerrod Waters
Senior Planner
City of Chino

Date 14, 2016

Please find this letter in response to your request for consultation dated December 13, 2016. I have reviewed the project site and do have concerns for cultural resources. Your project lies in an area where the Ancestral territories of the Kizh (Kitc) Gabrieleño's villages adjoined and overlapped with each other, at least during the Late Prehistoric and Protohistoric Periods. The homeland of the Kizh Gabrieleño was probably the most influential Native American group in aboriginal southern California (Bean and Smith 1978a:538), was centered in the Los Angeles Basin, and reached as far east as the San Bernardino-Riverside area. The homeland of our neighbors the Serranos was primarily the San Bernardino Mountains, including the slopes and lowlands on the north and south flanks. Whatever the linguistic affiliation, Native Americans in and around the project area exhibited similar organization and resource procurement strategies. Villages were based on clan or lineage groups. Their home/ base sites are marked by midden deposits often with bedrock mortars. During their seasonal rounds to exploit plant resources, small groups would migrate within their traditional territory in search of specific plants and animals. Their gathering strategies of ten left behind signs of special use sites, usually grinding slicks on bedrock boulders, at the locations of the resources.

Due to the project location and the high sensitivity of the area location, we would like to request one of our certified Native American Monitor to be on site during any and all ground disturbances (including but not limited to pavement removal, post holing, auguring, boring, grading, excavation and trenching) to protect any cultural resources which may be effected during construction or development. In all cases, when the Native American Heritage Commission states there are "no records of sacred sites in the project area" the NAHC will always refer lead agencies to the respective Native American Tribe because the NAHC is only aware of general information and are not the experts on each California Tribe. Our Elder Committee & Tribal Historians are the experts for our Tribe and are able to provide a more complete history (both written and oral) regarding the location of historic villages, trade routes, cemeteries and sacred/religious sites in the project area. While the property may be located in an area that has been previously developed, numerous examples can be shared to show that there still is a possibility that unknown, yet significant, cultural resources will be encountered during ground disturbance activities. Please note, if they haven't been listed with the NAHC, it doesn't mean that they aren't there. Not everyone reports what they know.

The recent implementation of AB52 dictates that lead agencies consult with Native American Tribes who can prove and document traditional and cultural affiliation with the area of said project in order to protect cultural resources. However, our tribe is connected Ancestrally to this project location area, what does Ancestrally or Ancestral mean? The people who were in your family in past times, Of, belonging to, inherited from, or denoting an ancestor or ancestors http://www.thefreedictionary.com/ancestral. Our priorities are to avoid and protect without delay or conflicts - to consult with you to avoid unnecessary destruction of cultural and biological resources, but also to protect what resources still exist at the project site for the benefit and education of future generations. At your convenience we can Consultation either by Phone or Face to face. Thank you

CC: NAHC

With respect,

Andrew Salas, Chairman
cell (626)926-4131

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CITY OF CHINO HILLS
COMMUNITY DEVELOPMENT DEPARTMENT

Andrew Salas, Chairman
Nadine Salas, Vice-Chairman
Christina Swindall Martinez, secretary
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